Is It Family or School? Getting the Question Right
Author(s): Karl Alexander
Source: *RSF: The Russell Sage Foundation Journal of the Social Sciences*, Vol. 2, No. 5, The Coleman Report and Educational Inequality Fifty Years Later (September 2016), pp. 18-33
Published by: Russell Sage Foundation
Stable URL: https://www.jstor.org/stable/10.7758/rsf.2016.2.5.02
Accessed: 20-02-2019 23:10 UTC

REFERENCES
Linked references are available on JSTOR for this article:
https://www.jstor.org/stable/10.7758/rsf.2016.2.5.02?seq=1&cid=pdf-reference#references_tab_contents
You may need to log in to JSTOR to access the linked references.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at
org/terms

This article is licensed under a Attribution-NonCommercial-NoDerivs 3.0 Unported. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-nd/3.0/.

Russell Sage Foundation is collaborating with JSTOR to digitize, preserve and extend access to *RSF: The Russell Sage Foundation Journal of the Social Sciences*

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

Is It Family or School? Getting the Question Right

KARL ALEXANDER

Much research has tried to parse the school's contribution to children's learning apart from the family's and the family's contribution apart from the school's as though they were discrete and separable. The 1966 Equality of Educational Opportunity *report helped launch this agenda, finding in favor of family. In this essay I argue that the framing of the issue as "family versus school" is fundamentally flawed. Rather, family and school (and neighborhood) together shape children's academic development. I argue that the strong effect associated with school socioeconomic composition in the original report, and stronger still in more recent studies, is in fact an expression of family influence: family determines where children live and the schools they attend. But it is a school influence as well. When properties of family, neighborhood, and school overlap, as they do under conditions of extreme neighborhood and school segregation, poor children's profile has them triply disadvantaged. The same ecological perspective on children's learning implies that by reducing the degree of overlap across these "overlapping spheres of influence," school socioeconomic context can function instead to offset family disadvantage. Relevant literatures are reviewed and the concluding section considers the potential of socioeconomic integration at the school level as a policy lever for improving poor children's educational prospects.*

Keywords: educational inequality, achievement gap, school socioeconomic integration, school effects, family effects

What are the social forces that govern children's academic development? This question arguably has been, and remains, the core problematic for the sociology of education as a field of inquiry, with the achievement gap across social lines a particular focus. In pursuit of answers, studies typically attempt to parse the school's contribution to children's learning apart from the family's and the family's contribution apart from the school's. Which of the two has the greater weight? James S. Coleman's *Equality of Educational Opportunity* report (Coleman et al. 1966; hereafter Coleman Report), which helped launch this agenda, found decidedly in favor of family.

In this essay, I argue that framing the issue as "family versus school" asks the wrong question. Rather, family and school, along with neighborhood, *together* shape children's academic development, and in ways that may not always be separable. When we think of family resources in support of children's schooling, it is natural to look to the interior of family life—for example, the family's material well-being, the structural integrity of the family, and the parents' engagement with their children's

Karl Alexander is director of the Thurgood Marshall Alliance and John Dewey Professor Emeritus of Sociology at Johns Hopkins University.

Direct correspondence to: Karl Alexander at karl@jhu.edu, School of Education, 2800 N. Charles St., Johns Hopkins University, Baltimore, MD 21218.

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

learning and their children's schools. But the family's reach extends beyond the confines of the household. Where children live and the schools they attend also are parental decisions, and owing to the deeply entrenched residential and school segregation of life in the United States today, the imperatives of family, neighborhood, and school tend to be mutually reinforcing—privileging those already privileged and disadvantaging those already disadvantaged.

THE COLEMAN REPORT AS BACKDROP

Daniel Patrick Moynihan's *New York Times* obituary (1995) for his good friend James Coleman began by recounting an incident at the Harvard Faculty Club on the occasion of the 1966 release of the Coleman Report. Moynihan tells us that he was approached by Seymour Martin Lipset, another eminent member of the faculty, who excitedly pronounced: "You know what Coleman is finding don't you? . . . All family." A few years later, Godfrey Hodgson (1975) introduced his expansive essay on the Coleman Report with the same story: "Hello Pat," Lipset began, "guess what Coleman found? . . . schools make no difference, families make the difference." Though shaded differently, both renderings convey the large takeaway point at the time of the report's rollout: in the tug of war between family and school in shaping children's academic development, family wins. And it is a decisive victory.

The conclusion that "schools make no difference" was a disheartening revelation for those who believed that poor and minority children suffer under the weight of woefully deficient schools. The Coleman Report was expected to provide scientific justification for school improvement as the remedy for generations of racial injustice. Instead, it implicated the private sphere of family life, seeming to leave little room for school reform as a solution.

Some who were distressed by the report's message dismissed it on technical grounds. Others took what they could from it—for example, the "news" that school segregation remained widespread throughout the United States a decade after the Supreme Court struck down the South's dual school system, that differences in children's educational experiences *within* individual schools counted for more than did average differences across schools (the latter being the report's perspective), and that teacher quality seemed to matter some, as did the socioeconomic makeup of a school's enrollment, such that poor and minority children perform better academically in schools with a diverse student body. But against the weight of family advantage and disadvantage, these were mere crumbs, and the decades that followed offered little relief from the deep malaise that set in:

> In 1969, Arthur Jensen began his famous paper in the *Harvard Educational Review* (Jensen 1969, 2) with the assertion that "Compensatory Education has been tried and apparently has failed," following with: "Why has there been such uniform failure of compensatory education programs wherever they have been tried?" (3).
>
> In 1972, Frederick Mosteller, a Harvard statistician, and Daniel Patrick Moynihan published the results of a faculty seminar in which distinguished academics from several disciplines revisited the Coleman Report data, analytic procedures, and conclusions. The result? According to the book's dust jacket: "This study turned understanding of a major area of social policy upside down, as had no comparable event in the history of social science" (Mosteller and Moynihan 1972).
>
> In 1989, Robert Slavin's literature review on the educational effectiveness of small classes concluded that there was little benefit short of one-on-one tutoring.
>
> Also in 1989, and then updated a decade later, Eric Hanushek's (1989, 1997) review of the evidence on school funding concluded that "variations in school expenditures are not systematically related to variations in student performance."

In light of such pronouncements, Barbara Heyns (1978, 186) was moved to elevate education research above economics as the "dismal

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

science," a legacy of the Coleman Report that remains with us still. According to Debra Viadero (2006, 23), writing on the occasion of the fortieth anniversary of the report: "What most people took away from the report . . . was the notion that 'schools don't matter.'" She then followed with a telling quote from David Armor, one of the Harvard seminar participants: "No one has found a way, on a large-scale basis, to overcome the influence of family."

Around the same time, Adam Gamoran and Daniel Long (2007, 23) credited the report with "the seminal finding in U.S. sociology of education."[1] Such acclaim after some forty years is quite remarkable, and not much has changed over the ensuing decade. The Coleman Report and the idea that "schools make no difference" continue to be invoked as authoritative, despite the following four facts that bear on the family-school tug-of-war:

1. The Coleman Report did not conclude that "schools make no difference."
2. Studies since, using more rigorous methods applied to both the same data and to new data, buttress—indeed strengthen—the report's actual conclusions.
3. Conclusions from the other studies cited as reinforcing the view that schools make no difference all have been refuted by scholars of comparable standing.
4. Pitting family against school as a contest between "this" and "that" is a flawed framing of the social forces that drive student learning and has led to much wrongheaded thinking.

I address these several points in the sections that follow, starting with the fourth, as it is fundamental.

THE FRAMING: IS IT "FAMILY OR SCHOOL?" OR "FAMILY AND SCHOOL?"

Richard Jessor's 1993 *American Psychologist* essay sketches an ecological perspective on children's development that is at once familiar and profoundly insightful. It follows in the social ecological tradition of Uri Bronfenbrenner (1979), but absent the obscure language. For Jessor, children's development is governed by experiences in the three institutional settings they encounter daily, up close and personal: family, neighborhood, and school. The resources available to children in these three settings, and how they are deployed, combine to channel youth along different developmental paths, ones that often overlap lines of race, gender, and family background.

At a farther remove, but still relevant, are the broader sociostructural and sociocultural contexts within which family, neighborhood, and school themselves are embedded. In my research (for example, Alexander, Entwisle, and Olson 2014), the background context is deindustrialized Baltimore over the last two decades of the twentieth century into the first decade of the twenty-first. The Annie Casey Foundation (2010, 2) has characterized this span of years as a time of

> crippling trends and tragic events—the dramatic loss of manufacturing jobs and tax base, the ruinous riots of 1967 and 1968; the exodus of first white then African-American, middle class families; the sequential epidemics of heroin, crack cocaine, and HIV; the intensified crime and gang activity that fed and feasted off the drug trade; and the activities of slumlords, property flippers and predatory lenders. The end result has been an ever-deepening cycle of disinvestment and decline.

It is fundamental to the life-course perspective on human development that the life paths children follow and the characteristic differences across social lines in those life paths are historically situated. It is self-evident that the conditions just described pose challenges for the healthy development of many of Baltimore's children. Those challenges play out at the interior of family life, in Baltimore's high-poverty neighborhoods, and in Baltimore's public schools, where enrollment systemwide in 2014

1. For Gamoran and Long (2007, 23), the seminal finding is that "*variation between schools* in their resources mattered little for *variation among individual students*."

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

was 84 percent low-income and 83 percent African American.[2]

There is nothing exceptional in Jessor's rendering to this point. That comes with his insight that family, neighborhood, and school are *overlapping spheres of influence* in children's development. That is to say, children's experience of family life, their neighborhood exposure, and the character of the schools they attend are not isolated silos. Rather, they are experienced holistically, as a mosaic. Children who grow up in poor families, live in high-poverty neighborhoods, and attend schools with high-poverty enrollments are triply disadvantaged. This profile, sadly, is all too common, and children who are burdened by it find themselves disadvantaged at every turn. It does not auger well.

Now to my point: poor children's experiences across these settings are an expression of family disadvantage. In deciding where to live, parents, poor and nonpoor alike, determine the character of their children's neighborhood exposure and of the schools they attend. Family, neighborhood, and school as overlapping spheres of influence in children's development characterize both family advantage (a middle-class experience profile) and family disadvantage (a low-income experience profile).

To speak of school influence as something apart from family influence is a false divide. We might try to force their separation heuristically for analytical purposes, but the counterfactual reality so imagined is just that: imaginary. In children's lived lives, school influence is an expression of family influence. That realization is critical to a proper understanding of the Coleman Report's results.

WHAT THE COLEMAN REPORT REALLY CONCLUDED

To see clearly that school influence is an expression of family influence requires going beyond thumbnail accounts, most of which misconstrue the report's import. Here, then, is the original source material (Coleman et al. 1966, 258):

> Of the many implications of the study of school effects on achievement, one appears to be of overriding importance.
>
> This is the implication that follows from the following results taken together:
>
> 1. The great importance of family background for achievement;
> 2. The fact that the relation of family background to achievement does not appear to diminish over the years of school;
> 3. The relatively small amount of school-to-school variation that is not accounted for by differences in family background . . .
> 4. The small amount of variation in achievement explicitly accounted for by variations in facilities and curriculum;
> 5. Given the fact that no school factors account for much variation in achievement, teacher's characteristics account for more than any other . . .
> 6. The fact that the social composition of the student body is more highly related to achievement, independently of the student's own social background, than is any school factor . . .
>
> Taking all these results together, one implication stands out above all: The schools bring little influence to bear on a child's achievement that is independent of his background and general social context.

The report continues with specific reference to home, neighborhood, and peer environments: "For equality of educational opportunity through the schools must imply a strong effect of schools that is independent of the child's immediate social environment; and that strong independent effect is not present in American schools."

Points 1, 3 and 6 are key, as is the language of "independent effects." Family background is of overriding importance—no one would dispute that.[3] But the fact that school-to-school variation in school achievement closely tracks

2. Baltimore City Public Schools, "By the Numbers," available at: http://www.baltimorecityschools.org/about/by_the_numbers (updated July 17, 2015).

3. It also should be noted, however, that the report's assessment of family background is quite limited; it includes

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

family background precisely exemplifies Jessor's "overlapping spheres of influence" thesis.

In fact, school influence on children's achievement is so deeply embedded in children's family life that they hardly are separable.[4] These tight linkages across institutional contexts additionally imply that the social organization of schooling, as constituted back then and still today, functions mainly to maintain or reproduce children's place in the social order. To illustrate, in 2005 nationally, poor students were in the majority in 84 percent of schools with minority enrollments of 90 to 100 percent; in schools with minority enrollments of 10 percent or less, just 18 percent of schools had majority low-poverty enrollments (Orfield and Lee 2007).

The insight that the social composition of the student body is the strongest school-based correlate of student achievement, independent of the child's family background, pinpoints the particular mechanism that channels family influence through the school: neighborhood residential segregation.

Owing to such segregation, most schools enroll mainly children of like background. High-poverty neighborhoods and high-poverty schools are population aggregates. Their properties do not inhere in any single family, and they have consequences beyond those located at the interior of family life. In that sense, they are independently consequential. But their force derives from the residential decisions of individual families, which are historically grounded and contemporaneously maintained. Change the demographics of neighborhood and school and the entire formula potentially changes: with less overlap across spheres, the evidence suggests that the social composition of the school would reverse function and serve to weaken the link between family background and school achievement. But such a circumstance today is the exception, not the rule.

As the national commitment to school desegregation has waned, segregation at the school level has increased: "Nearly 40 years after the assassination of Dr. Martin Luther King, Jr., we have now lost almost all the progress made in the decades after his death in desegregating our schools" (Orfield and Lee 2007, 11). That reversal has been most dramatic in the South, which for a brief period could claim the lowest levels of racial segregation in the country: in 1988 the percentage of black students attending majority-white schools in the South stood at 43.5 percent (up from essentially zero in 1954 and 2.3 percent at the passage of the 1964 Civil Rights Act); by 2005 it had dropped to 27 percent, just a bit above the figure for 1968 (Orfield and Lee 2007, 23).[5]

In an earlier era, the force of law, commercial practices, and, not infrequently, violence maintained segregated schooling and housing and kept neighborhoods separate along lines of race, ethnicity, and income. Today there is formal commitment to "equality of opportunity," but the largely informal practices that maintain such separation are no less powerful than in the past (Bonilla-Silva 1996).

Neighborhood segregation begets school segregation. Consider the parallels in Baltimore, as reported by John Logan (2002): during the 1989–1990 school year, neighborhood and school segregation indices were 79.1 and 76.3, respectively; a decade later, at 74.3 and 79.0, they had barely changed.[6] That the paired fig-

just a handful of surface indicators as reported by children and absent a meaningful theory or conceptualization of the processes by which parents and a family's resources are thought to guide children's academic development.

4. Research on summer learning loss, reviewed later in this essay, complicates that conclusion, but for now I let the point stand.

5. The situation for residential segregation is more complicated, as over time segregation by race has decreased while segregation by family income has increased (see, for example, Reardon and Bischoff 2011; Reardon et al. 2009). However, poor blacks specifically remain as isolated as ever (Massey and Brodmann 2014, 7).

6. Segregation indices represent the percentages of children who would have to change their school or neighborhood for every school and neighborhood in the city to have the same percentage African American as the citywide percentage.

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

ures are similar and high is hardly coincidental.

This degree of alignment reveals why attempting to separate the influence of family from the influence of school as though they are discrete entities serves little purpose. It is not that such a separation cannot be done—the Coleman Report achieved an approximation of it using the tools then available, and an even better job of it can be done today. The problem, rather, is conceptual: focusing on the independent contributions of family and school misses their overlapping contributions. It is not a matter of family *or* school, but of family *and* school.

AMPLIFYING THE "KEY FINDING"

In this section, I review studies from the contemporary literature that add weight to the Coleman Report's conclusions regarding poor and minority children's learning in relation to their school's enrollment mix. These studies instruct us that the report very likely understates the importance of school context, an insight that is startlingly important. I also review studies that compare school-year learning with summer learning, as these comparisons afford a rather different perspective on the contributions of family and school.

Borman and Dowling (2010)

Geoffrey Borman and Maritza Dowling (2010) reanalyze the original Coleman Report data for ninth-graders, acquired through the University of Michigan's Inter-University Consortium for Political and Social Research, a secondary analysis data archive. Some of the original ninth-grade data were missing, but otherwise Borman and Dowling use the same data, predictor set, and variable operationalizations as in the original Coleman Report. Their dependent variable is a test of verbal achievement, a short vocabulary test administered in the original project. The Coleman Report centered on the same test, which it characterized as a test of "verbal ability."

With these parallels to the Coleman analysis, Borman and Dowling's study also suffers the original project's limitations, a large one being its cross-sectional research design. The project did not monitor children's learning over time; rather, it assessed achievement levels at a single point in time and how those covaried in relation to school and family characteristics. Static comparisons across grade levels for different students might look like learning trajectories, but they are not. Still, if the original analysis is accorded credibility, as clearly it has been, then so too should Borman and Dowling's.

In addition to these many parallels, there is one large difference that sets the Borman-Dowling study apart from the original: its mode of analysis. The original report relied on simple correlational and regression analyses. Borman and Dowling instead use an approach that adjusts for the nested data structure that is characteristic of classroom- and school-based research. The methods used in the Coleman Report assume independence of observations, meaning, in this instance, that what happens to one child has nothing to do with what happens to another child. But children who attend the same school or are enrolled in the same classroom share many experiences, including some that no doubt have bearing on their learning.

Owing to this shared experience, the forces that impinge on children's learning vary less across persons than they would if, for example, each child attended a different school. As a result, there is a strain toward homogeneity in the data collected from them and about them. This nesting can be multilayered—for example, children within classrooms, within schools, within school districts, or within states—and to ignore that possibility risks getting biased results. The distortion can be large or small, but since the extent of bias usually is unknown, it looms large as a concern.

Borman and Dowling use hierarchical linear modeling (HLM) to adjust for the fact that observations are nested and not independent, and this does indeed affect the results. We know this because they also report results using the report's original mode of analysis. Here is what they conclude:

> Going to a high-poverty school or a highly segregated African American school has a profound effect on a student's achievement outcomes, above and beyond the effect of his or her individual poverty or minority status.

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

> Specifically, both the racial/ethnic and social class composition of a student's school are more than 1¾ times more important than a student's individual race/ethnicity or social class for understanding educational outcomes. In dramatic contrast to previous analyses of the Coleman data, these findings reveal that school contexts dwarf the effects of family background. (Borman and Dowling 2010, 1239)

All family? Schools don't matter? That hardly seems the case.

Rumberger and Palardy (2005)

Russell Rumberger and Gregory Palardy (2005) pose similar questions using a different data source: the National Educational Longitudinal Survey of 1988, which affords national coverage. This project began in 1988 with a large, representative sample of eighth-grade students and their schools and tracked their educational progress through twelfth grade. Because it monitored the learning of the same students over time, Rumberger and Palardy are able to evaluate *changes* in test scores in relation to characteristics of children's families and schools and in relation to experiences at school. They analyze learning in several achievement domains: math, science, reading, social science, and a composite of all four via HLM, the same mode of analysis used by Borman and Dowling.

Their results are complicated and nuanced, with comparisons across testing domains, different kinds of students (classified by race-ethnicity and family socioeconomic status), and different kinds of schools (for example, low-, mid-, and high-SES). Still, the results of most immediate interest are straightforward:

> The results of this study confirm a widely held belief of many parents: that whom you go to school with matters. But what appears to matter most is the socioeconomic, not the racial composition of schools. . . . While students' own social backgrounds were related to their achievement, so too were the average social class backgrounds of all the students in their school. In fact, the effects of school SES were almost as large, and sometimes much larger, than the effects of student SES. (Rumberger and Palardy 2005, 2020)

Rumberger and Palardy continue by noting that their results confirm the original conclusions of the Coleman Report, although with much closer balance between the influence of school and the influence of family.

Here too, then, the school's enrollment mix—its socioeconomic makeup in particular—emerges as highly consequential for children's learning. For poor and minority children, attending a school with a diverse student body boosts achievement and attending a school with mainly others of like background depresses achievement; thus, when poor children live in high-poverty neighborhoods and attend high-poverty schools, their learning suffers. The original Coleman Report suggested this; these studies strengthen the point.

Schwartz (2010)

Heather Schwartz (2010) focuses on a single community, Montgomery County, Maryland, comparing the school performance of poor children who live in predominantly middle-class neighborhoods against other poor children who live in less affluent communities. This uncommon circumstance is afforded by the county's inclusionary housing policy, which requires real estate developers to set aside a portion of homes to be rented or sold at below market rates. There were 12,000 such units in wealthy Montgomery County at the time of Schwartz's project, one-third of which had been acquired for public housing.

Public housing applicants were randomly selected for placement. Schwartz (2010, 5) examines the experience of 850 children so placed who, as she puts it, "attended elementary schools and lived in neighborhoods that fell along a spectrum of very-low-poverty to moderate-poverty rates." With 40 percent to 85 percent the range of low-income enrollments, Montgomery County has few schools with extreme levels of concentrated poverty. This contrasts sharply with the experience in Baltimore, where most black children attend hypersegregated schools with African American enrollments of 90 percent or more. Still, these differences in Montgomery County are large, and

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

potentially meaningful. Additionally, most of the higher-poverty schools there received supplemental resources not provided to schools with low-poverty enrollments: funding for full-day as opposed to half-day kindergarten, staffing to reduce class size (from twenty-five to seventeen), extra staff professional development, and an enhanced literacy curriculum. Schwartz takes advantage of these resource differences to compare the benefits of income integration to resource enhancement in higher-poverty settings, two very different approaches to addressing needy children's educational challenges.

Assigning families to neighborhoods and children to schools by a random draw effectively eliminates any self-selection of more highly motivated parents into stronger schools. At the time of the Coleman Report, with near-universal segregation by race, one has to wonder whether the small number of black children in schools with diverse enrollments would have done equally as well if they had attended the high-poverty, segregated schools typically attended by other black children. If family is all that matters, then perhaps so, and with residential and school segregation still high, the same uncertainty prevails today. But not in Montgomery County. Taking parental choice out of the picture shows that *school differences* are likely to signify *school effects*. And what are those schools effects? According to Schwartz:

> School-based economic integration effects accrued over time. After five to seven years, students in public housing who were randomly assigned to low-poverty elementary schools significantly outperformed their peers in public housing who attended moderate-poverty schools in both math and reading. Further, by the end of elementary school, the initial large achievement gap between children in public housing who attended the district's most advantaged schools and their non-poor students in the district was cut in half for math and one-third for reading. (Schwartz 2010, 6)

Imagine that—improved performance by poor students compared to other poor students attending resource-enhanced schools and a greatly diminished achievement gap compared to nonpoor students. These gains took time to materialize, with economic integration in children's neighborhoods and schools both implicated (the latter in larger measure). Schwartz adds that these impressive results are probably a lower bound to the benefits that poor children could realize by attending low-poverty schools: she notes that fewer than 1 percent of Montgomery County's elementary schools have high-poverty enrollments, compared to 40 percent of urban elementary schools nationwide.

These results also accord with Coleman's conclusions. Indeed, to this point, we have encountered no contradictions to the Coleman Report, although the school context effects documented in these more recent studies are vastly larger than those in the report. These studies thus add force to the report's conclusions, help establish their contemporary relevance, and suggest, in a way that the report analysis could not, a path to school improvement for poor children: reduce the degree of overlap in the "overlapping spheres of influence" that impedes their academic development.

THE SEASONALITY OF LEARNING

Interest in summer learning as distinct from school-year learning extends back to the first decade of the twentieth century (see Cooper et al. 1996). The modern era of research on the topic was launched by Barbara Heyns in her remarkable book *Summer Learning and the Effects of Schooling* (1978). Her great insight was that comparing children's summer learning to their school-year learning affords leverage for disentangling the influence of school from the influence of family.

It is clear that the overlap of school characteristics with family characteristics poses challenges for poor children, but that same overlap also poses challenges for researchers. Observational (that is, non-experimental) data oblige the separation of family influence from school influence by statistical means, yet the social forces combined by nature do not yield easily to artificial devices. When the overlap is severe the separation is uncertain, and confounds

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

such as parental self-selection into schools with diverse enrollments cloud interpretation. Random assignment, as in Montgomery County, is uncommon, but the school-year calendar affords the same kind of contrast in a natural experiment that is near-universal.

Children are in their families and neighborhoods throughout the year but are in school intermittently. The long summer break, typically three months in the United States, isolates the school's contribution to children's learning: if achievement gains track differently over the summer months, when children are not in school, than during the school year, then time out from school must be implicated. This also eliminates the parental self-selection confound, as the school calendar applies to everyone.[7]

Heyns analyzes achievement gains by family income level and race-ethnicity (African American or white) for a large sample (nearly 3,000) of Atlanta middle school students over an eighteen-month period bracketing two school years and the summer between. Her findings are both expected and unexpected. Among the former is that children, regardless of their background, learn more and learn more efficiently when they are in school—thank goodness for that! Among the latter findings is that poor children and African American children come close to keeping up academically during the school year. That is to say, their learning from fall to spring is nearly at parity with that registered by whites and children from higher-income families. But these children are not performing at the same level at year's end, and the reason why is revealing: they fall behind during the summer months owing to a dearth of learning resources in their families and neighborhoods.

Heyns's study thus reveals that the achievement gap across social lines traces substantially to differences in out-of-school learning opportunities over the long summer break.[8] On this basis, she concludes that school—regular school—is compensatory education for poor and disadvantaged minority children (Heyns 1978, 188).

We find much the same in our Baltimore research (Alexander, Entwisle, and Olson 2001; Entwisle, Alexander, and Olson 1997; Entwisle, Alexander, and Olson 2001). Our summer learning studies track test score gains for a representative sample of children who began first grade in twenty Baltimore City public schools in the fall of 1982, with seasonal comparisons through the end of elementary school (five school years and the four summers between).[9]

In reading comprehension (assessed via the California Achievement Test battery), low-income and middle-class children's scores differed by a half-grade equivalent in the fall of first grade; by the end of fifth grade the gap had increased to three grade equivalents.[10] To be reading at a third- or fourth-grade level when poised to transition to middle school is hardly what we would want for our children, but in Baltimore, just as in Atlanta, most of the gap increase over this span of years happened during the summer months. During the summer, middle-class children's reading skills continued to improve, but low-income children's did not, a pattern known as "summer slide" or "summer setback." The school-year pattern was altogether different, as then low-income children and middle-class children registered similar progress.

In the late 1990s, the Early Childhood Longitudinal Study-Kindergarten cohort (ECLS-K), national in scope, yielded broadly similar results for learning over kindergarten, first grade, and the summer in between (Downey, von Hip-

7. Heyns also monitors summer school attendance, another facet of the "in school" versus "not in school" comparison.

8. This is not apparent under the more common accountability regime that tracks testing from spring to spring, blurring together school year and summer learning.

9. The city schools at the time were doing twice-annual achievement testing, in the fall and spring. It is this schedule that allows for the separation of school-year learning (fall to spring) from summer learning (spring to fall across successive school years).

10. A similar pattern maintained for math concepts and applications.

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

pel, and Broh 2004; Burkam et al. 2004). This was clearest for disparities along lines of family socioeconomic level, which paralleled the patterns seen in Atlanta and Baltimore:

> Past seasonal researchers have argued that inequality in cognitive skills emerges primarily when school is not in session, and that it likely is a function of different family and neighborhood experiences. . . . With substantially better data than previous researchers, we provide the strongest support to date for this position. . . . With respect to socioeconomic status, the primary source of inequality lies in children's disparate non-school environments. (Downey, von Hippel, and Broh 2004, 632)

"Better data" here refers to the ECLS-K's national coverage and large sample size. Also, with testing dates and school-year starting and ending dates known, ECLS-K analyses more accurately bracket the relevant seasonal intervals (in-school or summer).[11]

The patterning of learning disparities along lines of family socioeconomic background is consistent across these several studies, despite their many differences.[12] They span three decades, cover different student populations in different localities at different grade levels, and monitor different domains of achievement using different instruments. Overriding these differences of detail are two profound insights: (1) poor children are capable learners in that they come close to keeping up when they are in school; (2) it is mainly family disadvantage, not school disadvantage, that holds children back.

From the literature on summer learning we see that when the influences of family and school are convincingly separated, both emerge as powerful forces in children's learning. And what of David Armor's assertion that "no one has found a way, on a large-scale basis, to overcome the influence of family"? Research into the seasonality of learning gives the lie to any such claim. School—and better still, a high-quality school experience—is the key to counteracting family disadvantage.

REGARDING THE NAYSAYERS

And what of those "dismal science" voices proclaiming the irrelevance of educational resources? After examining the relevant literatures, expanded to include trends in test performance over time and international comparisons, the economist Alan Krueger (1998, 30) had this to say: "The . . . widely held belief that American schools have failed . . . is not supported by the evidence. The evidence suggests that the perceived crisis in education has been greatly exaggerated, if indeed there is a crisis at all."

And Krueger was hardly alone. Other voices from around the same time also pushed back against the assertion that America's schools are in decline and ineffectual (see, for example, Bracey 2004; Berliner and Biddle 1995; Rothstein 1995), including mine (Alexander 1997). And what of the naysayers' specific assertions? In each area, there have been countervailing voices, also highly regarded and with supporting evidence:

1. Against Jensen's (1969) assertion that compensatory education has been tried and failed is evidence of impressive benefits of the Perry Preschool, ABECEDARIAN, and other early education programs that extend beyond achievement effects to include reduced risk of grade retention and high school dropout and, in young adulthood, lower levels of criminality and unemployment; see Barnett (2008, 2011), Heckman (2008), and Schweinhart and Weikart (1997) for small-scale studies that extend over many years. Large-scale studies, but of shorter duration, have demonstrated effectiveness for academic outcomes specifically—for example, in Oklahoma (Gormley

11. Having these dates provided an important technical check. Such adjustments might have altered estimates of school-year and summer learning gains, as well as of differences in the seasonal patterning of gains along social lines, but those details instead proved to be robust.

12. The same does not hold for the achievement gap by race-ethnicity: in the ECLS-K data, that gap expanded during the school year and there was little difference in learning rates summer versus school year.

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

2013) and New Jersey (Barnett, Jung, and Youn 2013).

2. Against Slavin's (1989) conclusion that smaller class sizes are no more effective than larger enrollments is evidence from the Tennessee class size experiment—a true experiment in which poor and minority children were found to derive substantial and long-lasting benefits from smaller classes in the early elementary grades (for example, Krueger and Whitmore 2002), extending, it seems, even to earnings in young adulthood (for example, Chetty et al. 2010).
3. And against Hanushek's (1989, 1997) assertion that expenditures and the things that expenditures are used to purchase have little bearing on achievement, Larry Hedges, Richard Laine, and Rob Greenwald (1994, 11) conclude, after reviewing the same body of evidence, that effects for per pupil expenditures are "substantially positive" and effects for teacher salary, administrative inputs, and facilities are "typically positive."

There have always been conflicting evidence, conclusions, and claims about the efficacy of schools and schooling in promoting student success, and it seems safe to predict that this will continue. But the extent to which the negative voices have dominated public perceptions—and I would say professional perceptions as well—really is quite striking. Why that is the case is hard to say, although I suspect that the foundation laid by the Coleman Report has played a role.

My pushback against these negative voices should not be construed as a belief that we have arrived at some blissful state of educational nirvana. To the contrary, the challenges we confront, especially for poor children in high-poverty school systems, are daunting and deeply entrenched. They will not yield easily, and the resources that we know can help these children often are in short supply in the schools they attend. One of those resources, the one I take up in my concluding comments, is the opportunity to attend schools not burdened by the drag of concentrated poverty.

CONCLUDING THOUGHTS

My conclusion from the review in this essay of five decades of research is that there indeed are enduring truths to be found in the Coleman Report, but they are not the ones typically touted. Moreover, I can imagine a future in which they no longer maintain; that is to say, though the report's insights remain relevant, they are not immutable. At issue are consequences for children's learning that flow from the overlapping spheres of influence emanating from family, neighborhood, and school. Alter the degree of overlap and the entire formula potentially changes. The Coleman Report instructs us that the surest route to helping poor and minority children keep up academically is to enable them to attend schools that are not just desegregated but authentically integrated —by which I mean that the experience of diversity infuses children's daily experience: As Coleman notes, "School integration is vital . . . because it is the most consistent mechanism for improving the quality of education of disadvantaged children." He continues: "So long as middle-class students remain a majority in a given school they establish the achievement tone . . . and by attending such a school disadvantaged students make more consistent educational gains than by any other mechanism."

This was Coleman in 1970, sharing lessons he learned from the report that bears his name.[13] His conclusion implies that weakening the link between family background and the character of the schools that children attend could well be transformative. School choice has that potential, although at present it is largely unrealized.[14] So too would a renewed commitment to neighborhood and school desegregation along lines of family income (see, for example, Kahlenberg 2010; Semuels 2015); certainly that is what the Montgomery County research indicates. Consider this, from recent

13. Jack Rosenthal, "School Expert Calls Integration Vital Aid to Educating the Disadvantaged," *New York Times,* March 9, 1970.

14. See, for example, Diane Ravitch's (2010) critique of the pro–charter school documentary *Waiting for "Superman."*

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

commentary: "Desegregation is the best way to improve our schools. Racial achievement gaps were narrowest during the height of school integration."[15] And as Nikole Hannah-Jones told Ira Glass, "Integration works. . . . We have this thing that we know works, that the data shows works, that we know is best for kids, and we will not talk about it. . . . It's not even on the table."[16]

Hannah-Jones overstates the case, but only somewhat. The Century Foundation has identified ninety-one school districts and individual charter schools throughout the United States that have a purposeful commitment to diversity (Potter, Quick, and Davies 2016). Those include some large school systems, including Hartford, Connecticut (Eaton 2013) and Louisville, Kentucky (Semuels 2015), both of which are pursuing a metropolitan regional approach. And Louisville holds the distinction of being a Southern school system that maintained its commitment to integration even after the court order that forced desegregation was lifted. Hartford and Louisville are exceptions, however, and ninety-one districts and schools is too few altogether—many too few.

If we have known for a half-century that school desegregation works—and not just for disadvantaged minority children[17]—why isn't that the conventional wisdom, rather than the rhetoric of "schools make no difference"? And why the retreat from one of the few demonstrable interventions that is known to work? No doubt there are many considerations, but I suspect that the Coleman Report's "family versus school" framing has played a role, together with the misconstruals of its results and their implications.

As noted by George Theoharis, when the Supreme Court's school desegregation mandate did eventually begin to be enforced vigorously, levels of school segregation nationally declined dramatically.[18] In parallel, and I think not coincidentally, the achievement gap across lines of race-ethnicity also declined dramatically. In a 1997 essay, I wrote: "Would it surprise you to learn that the 'IQ' gap separating black and white youth declined by almost a third between 1970 and 1990?" (Alexander 1997, 1). A year later, Krueger (1998, 31) pointed out that the black-white gap in math National Assessment of Educational Progress (NAEP) scores among seventeen-year-olds declined by nearly half between 1970 and 1990.[19]

Nothing is fixed. Attempts to parse the "whether" of school versus family seek a definitive answer, but this false dichotomy fundamentally misconstrues the backdrop to children's learning. Family matters, to be sure, but school also matters, and it is how the two intersect that sets children on their developmental paths. The consequences that follow when many poor children live in high-poverty communities and attend schools with high-poverty enrollments are easy to anticipate, but are those consequences really removed from family? That the school's enrollment mix emerges consistently in research as the school factor most strongly implicated in children's learning makes it a difficult to case to argue.

In generating opportunity, family and school are indeed in tension, but it is a tension not captured in the "school versus family" framing. Here too Coleman understood the sense of it better than most: what counts is the balance between private family resources and

15. George Theoharis, "'Forced Busing' Didn't Fail. Desegregation Is the Best Way to Improve Our Schools," *Washington Post,* October 23, 2015.

16. Nikole Hannah-Jones, "The Problem We All Live With," interview with Ira Glass, *This American Life,* July 31, 2015, available at: http://thisamericanlife.org/radio-archives/episode/562/transcript (accessed June 28, 2016).

17. Anya Kamenetz, "The Evidence That White Children Benefit from Integrated Schools," nprED, October 19, 2015, available at: http://www.npr.org/sections/ed/2015/10/19/446085513/the-evidence-that-white-children-benefit-from-integrated-schools (accessed June 28, 2016).

18. Theoharis, "'Forced Busing' Didn't Fail"; see also Orfield and Lee 2005.

19. Recent NAEP data indicate an upward track in scores since 2000 among whites, Latinos, and African Americans, accompanied by a modest reduction in the gap (Education Trust 2015). This trend, unlike the earlier one, is probably not driven by school desegregation.

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

public resources in support of children's learning. At present, the private and public resources invested in children's schooling are highly unequal, and they favor families of means. On that basis, Coleman concluded that complete parity across social lines in schooling probably is not feasible. The goal, rather, should be to move toward greater parity or gap reduction, which he believed was both feasible and desirable (Coleman 1975).

The resources at issue are not just material, as important as those are. In our Baltimore research, the typical "urban disadvantaged" parent, white or African American, had not finished high school; many were single parents weighed down by the so-called feminization of poverty. These parents themselves struggled at school, and many suffered a low literacy level and a weak command of formal English (see, for example, Farkas and Beron 2004; Hart and Risley 1995).

Given that it is hard for these parents to model and support the kinds of learning that are valued in school and to provide the enriching experiences so critical to children's healthy development, is it realistic to expect that their children will arrive at school as well prepared as the children of middle-class and professional parents? The consequences of family resource inequality for children's schooling are apparent at kindergarten entry (Lee and Burkam 2002). And because those inequalities are ever-present in children's lives, so too is their drag (Alexander, Entwisle, and Olson 2007; Entwisle, Alexander, and Olson 1997)—absent, that is, an effective counterbalance to them.

The public resources invested in children's schooling could be that counterbalance, but these resources are less abundant than the private resources commanded by some families. Moreover, public investments in children do not always, or even usually, favor the disadvantaged. Parents of means understand that a good school matters, and they see to it that their children attend one, either by paying a premium to purchase a home in a community that maintains good schools or by enrolling their children in a private school. Schools in wealthier communities serve the interests of their residents, and when those communities are isolated by race and family income, as is typical, the interests they serve are those of the well-to-do.

But it also needs to be said that schools do not simply reinforce patterns of family advantage and disadvantage. Rather, poor children fall behind when their learning depends on the sparse resources available to them at home and in their communities. Their schools, even those burdened by concentrated poverty, help them to keep up academically. From research on summer learning loss we learn that the portion of school influence that is separable from family serves to lift up poor children, not hold them back.

The key insight here is that the "overlap" of these overlapping spheres of influence is not perfect. Schools are at the very same time agents of social reproduction, favoring those already favored, *and* agents of social mobility. There is no logical contradiction in this duality, but to achieve greater public resource balance and so tilt the scales more in favor of social mobility, poor children need to have access to the same quality schooling as do the nonpoor.

And what exactly might that look like? Decades of research anchored in the Coleman Report instruct us that the most valuable school resource for poor and minority children inheres in the school's demographic makeup. Poor children do best academically when they attend schools not burdened by concentrated poverty. Resource enhancement in high-poverty schools is a second-best option, as results under that approach are less impressive (Schwartz 2010) and there is little precedent for achieving sustained excellence in such settings on a broad scale.[20]

Richard Kahlenberg (2001, 2012), a leading advocate for school socioeconomic integration, has cataloged the many advantages that accrue to poor children when they attend schools that enroll a solid middle-class core:

20. Samuel Casey Carter (2000) identifies a number of individual schools that appear to meet this standard, but his report has received much critical commentary; see, for example, Billing and Bracey (2000) and Schmidt (2001). For a counterargument, see Duncan and Murnane (2013).

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

beneficial peer influences, such as stronger academic motivation and preparation; a more orderly classroom environment with less student mobility and fewer absences; improvement in parental resources through more effective advocacy and involvement; higher-quality teachers with higher expectations for their students; and a more demanding curriculum. To this list Rumberger and Palardy (2005) add the amount of homework students do and their feelings of safety at school.[21] Meanwhile, Roslyn Mickelson (2005) and Karolyn Tyson (2011), among others, have revealed the harm done to poor and minority children in nominally desegregated schools when they are isolated in low-level remedial programs—internal resegregation through tracking. The goal must be authentic integration; simply having children of different backgrounds in the same building is not enough.

Not every wealthy suburban school provides an optimal learning environment, and not all high-poverty urban schools are distressed. These are tendencies, but as tendencies they are quite real and they matter. They matter for the poor children who are resource-deprived in their homes, their communities, and their schools, and they ought to matter for those of us who wish a brighter future for them.

To advance the cause of socioeconomic integration will not be easy, and certainly the demographic profile districtwide in places like Baltimore poses daunting challenges. But from the experience in those communities and individual schools throughout the country that are committed to this goal (Kahlenberg 2012; Kahlenberg and Potter 2014), we know that it is not impossible. If the Coleman Report helped trigger what I have called a deep malaise, perhaps the time has come to reverse course. From that document, and Coleman's own good counsel, we know "what works." What is needed is the will to follow through.

REFERENCES

Alexander, Karl L. 1997. "Public Schools and the Public Good." *Social Forces* 76(1): 1–30.

Alexander, Karl L., Doris R. Entwisle, and Linda S. Olson. 2001. "Schools, Achievement, and Inequality: A Seasonal Perspective." *Educational Evaluation and Policy Analysis* 23(2): 171–91.

———. 2007. "Lasting Consequences of the Summer Learning Gap." *American Sociological Review* 72(2): 167–80.

———. 2014. *The Long Shadow: Family Background, Disadvantaged Urban Youth, and the Transition to Adulthood.* New York: Russell Sage Foundation.

Annie Casey Foundation. 2010. *The East Baltimore Revitalization Initiative: A Case Study of Responsible Redevelopment.* Baltimore: Annie E. Casey Foundation.

Barnett, W. Steven. 2008. "Preschool Education and Its Lasting Effects: Research and Policy Implications." Tempe: Arizona State University, Education Policy Research Unit.

———. 2011. "Effectiveness of Early Educational Intervention." *Science* 333(6045): 975–78.

Barnett, W. Steven, Kwanghee Jung, and Min-Jong Youn. 2013. "Abbott Preschool Program Longitudinal Effects." Rutgers, N.J.: National Institute for Early Education Research.

Berliner, David C., and Bruce J. Biddle. 1995. *The Manufactured Crisis: Myths, Fraud, and the Attack on America's Public Schools.* Reading, Mass.: Addison-Wesley.

Billing, Bruce, and Gerald Bracey. 2000. "No Excuses, Lots of Reasons: A Response to *No Excuses: Lessons from 21 High-Performing, High-Poverty Schools*." Education Policy Project (July 1).

Bonilla-Silva, Eduardo. 1996. "Rethinking Racism: Toward a Structural Interpretation." *American Sociological Review* 62(3): 465–80.

Borman, Geoffrey D., and Maritza Dowling. 2010. "Schools and Inequality: A Multilevel Analysis of Coleman's Equality of Educational Opportunity Data." *Teachers College Record* 112(5): 1201–46.

Bracey, Gerald. 2004. *Setting the Record Straight: Responses to Misconceptions About Public Education in the U.S.* Portsmouth, N.H.: Heinemann.

Bronfenbrenner, Urie. 1979. *The Ecology of Human Development: Experiments by Nature and Design.* Cambridge, Mass.: Harvard University Press.

Burdick-Will, Julia, Jens Ludwig, Stephen W. Raudenbush, Robert J. Sampson, Lisa Sanbonmatsu, and Patrick Sharkey. 2011. "Converging Evidence

21. Many high-poverty schools are located in high-crime neighborhoods. Trauma surrounding exposure to violence affects children's school performance (see Burdick-Will et al. 2011; Sharkey 2010), yet another way in which outside conditions filter into the school.

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

for Neighborhood Effects on Children's Test Scores: An Experimental, Quasi-experimental, and Observational Comparison." In *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances,* edited by Greg J. Duncan and Richard J. Murnane. New York: Russell Sage Foundation.

Burkam, David T., Douglas D. Ready, Valerie E. Lee, and Laura F. LoGerfo. 2004. "Social-Class Differences in Summer Learning Between Kindergarten and First Grade: Model Specification and Estimation." *Sociology of Education* 77(1): 1–31.

Carter, Samuel Casey. 2000. *No Excuses: Lessons from 21 High-Performing, High-Poverty Schools.* Washington, D.C.: Heritage Foundation.

Chetty, Raj, John N. Friedman, Nathanial Hilger, Emmanuel Suez, Diane Whitmore Schanzenbach, and Danny Yagen. 2010. "How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project STAR." Working Paper 16381. Cambridge, Mass.: National Bureau of Economic Research.

Coleman, James S. 1975. "What Is Meant by 'an Equal Educational Opportunity'?" *Oxford Review of Education* 1(1): 27–29.

Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James McPartland, Alexander M. Mood, Frederick D. Weinfeld, and Robert L. York. 1966. *Equality of Educational Opportunity.* Washington: U.S. Department of Health, Education, and Welfare, Office of Education.

Cooper, Harris, Barbara Nye, Kelly Charlton, James Lindsay, and Scott Greathouse. 1996. "The Effects of Summer Vacation on Achievement Test Scores: A Narrative and Meta-analytic Review." *Review of Educational Research* 66(3): 227–68.

Downey, Douglas B., Paul T. von Hippel, and Beckett Broh. 2004. "Are Schools the Great Equalizer? Cognitive Inequality During the Summer Months and the School Year." *American Sociological Review* 69(5): 613–35.

Duncan, Greg, and Richard J. Murnane. 2013. *Restoring Opportunity: The Crisis of Inequality and the Challenge for American Education.* Cambridge, Mass.: Harvard Education Press.

Eaton, Susan. 2013. "Years After a Landmark Court Decision, Connecticut's Solution to School Segregation Shows Promise: Can It Inform Action in Baltimore?" *The Abell Report* (Abell Foundation, Baltimore) 26(5, June).

Education Trust. 2015. "Trends in Achievement and Attainment Since We've Had Annual Testing, Transparency, and Serious Accountability for All Groups of Children." Washington, D.C.: Education Trust.

Entwisle, Doris R., Karl L. Alexander, and Linda S. Olson. 1997. *Children, Schools, and Inequality.* Boulder, Colo.: Westview Press.

———. 2001. "Keeping the Faucet Flowing: Summer Learning and Home Environment." *American Educator* 25(3): 10–15, 47.

Farkas, George, and Kurt Beron. 2004. "The Detailed Age Trajectory of Oral Vocabulary Knowledge: Differences by Class and Race." *Social Science Research* 33(3): 464–97.

Gamoran, Adam, and Daniel A. Long. 2007. "Equality of Educational Opportunity: A Forty Year Retrospective." In *International Studies in Educational Inequality, Theory, and Policy.* The Netherlands: Springer.

Gormley, William T., Jr. 2013. "Oklahoma's Universal Preschool Program: Better Than OK." *Georgetown Public Policy Review* (May 6).

Hanushek, Eric A. 1989. "The Impact of Differential School Expenditures on School Performance." *Educational Researcher* 18(4): 45–65.

———. 1997. "Assessing the Effects of School Resources on Student Performance: An Update." *Educational Evaluation and Policy Analysis* 19(2): 141–64.

Hart, Betty, and Todd R. Risley. 1995. *Meaningful Differences in the Everyday Experience of Young American Children.* Baltimore: Paul H. Brookes Publishing.

Heckman, James J. 2008. "Early Childhood Education and Care: The Case for Investing in Disadvantaged Young Children." *DICE* (University of Munich, Ifo Institute for Economic Research) 6(2): 3–8.

Hedges, Larry V., Richard D. Laine, and Rob Greenwald. 1994. "Does Money Matter? A Meta-analysis of Studies of the Effects of Differential School Inputs on Student Outcomes." *Educational Researcher* 23(3): 5–14.

Heyns, Barbara. 1978. *Summer Learning and the Effects of Schooling.* New York: Academic.

Hodgson, Godfrey. 1975. "Do Schools Make a Difference?" In *The "Inequality" Controversy: Schooling and Distributive Justice,* edited by Donald M. Levine and Mary Jo Bane. New York: Basic Books.

Jensen, Arthur R. 1969. "How Much Can We Boost IQ and Scholastic Achievement?" *Harvard Educational Review* 39(1): 1–123.

Jessor, Richard. 1993. "Successful Adolescent Development Among Youth in High-Risk Settings." *American Psychologist* 48(2): 117–26.

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

Kahlenberg, Richard D. 2001. *All Together Now: Creating Middle-Class Schools Through Public School Choice.* Washington, D.C.: Brookings Institution Press.

———.2010. "Housing Policy Is School Policy." *Education Week*, October 15. Available at: http://www.edweek.org/ew/articles/2010/10/20/08kahlenberg_ep.h30.html (accessed June 22, 2016).

———. 2012. *The Future of School Integration: Socioeconomic Diversity as an Education Reform Study.* New York: Century Foundation Press.

Kahlenberg, Richard D., and Halley Potter. 2014. *A Smarter Charter: Finding What Works for Charter Schools and Public Education.* New York: Teachers College Press.

Krueger, Alan B. 1998. "Reassessing the View That American Schools Are Broken." *Federal Reserve Bank of New York Economic Policy Review* 4(1): 29–43.

Krueger, Alan B., and Diane M. Whitmore. 2002. "Would Smaller Classes Help Close the Black-White Achievement Gap?" In *Bridging the Achievement Gap,* edited by John E. Chubb and Tom Loveless. Washington, D.C.: Brookings Institution Press.

Lee, Valerie, and David T. Burkam. 2002. *Inequality at the Starting Gate: Social Background Differences in Achievement as Children Begin School.* Washington, D.C.: Economic Policy Institute.

Logan, John R. 2002. "Choosing Segregation: Racial Imbalance in American Public Schools, 1990–2000." Albany, N.Y.: University at Albany, Lewis Mumford Center for Comparative Urban and Regional Research.

Massey, Douglas D., and Stefanie Brodmann. 2014. *Spheres of Influence: The Social Ecology of Racial and Class Inequality.* New York: Russell Sage Foundation.

Mickelson, Roslyn A. 2005. "How Tracking Undermines Race Equity in Desegregated Schools." In *Bringing Equity Back: Research for a New Era in American Educational Policy,* edited by Janice L. Petrovich and Amy Stuart Wells. New York: Teachers College Press.

Mosteller, Frederick, and Daniel P. Moynihan 1972. *On Equality of Educational Opportunity.* New York: Vintage Books.

Moynihan, Daniel P. 1995. "Moved by Data, Not Doctrine." *New York Times Magazine,* December 31.

Orfield, Gary, and Chungmei Lee. 2005. "Why Segregation Matters: Poverty and Educational Inequality." Cambridge, Mass.: Harvard University.

———. 2007. "Historic Reversals, Accelerating Resegregation, and the Need for New Integration Strategies." Los Angeles: UCLA Civil Rights Project.

Potter, Halley, Kimberly Quick, and Elizabeth Davies. 2016. "Districts and Charters Pursuing Socioeconomic Diversity." New York: Century Foundation (February 9).

Ravitch, Diane. 2010. "The Myth of Charter Schools." *New York Review of Books,* January 13.

Reardon, Sean F., and Kendra Bischoff. 2011. "Growth in the Residential Segregation of Family by Income, 1970–2009." US2010 Project: Brown University and Russell Sage Foundation. Providence, R.I.: Brown University.

Reardon, Sean F., Chad R. Farrell, Stephen A. Matthews, David O'Sullivan, and Kendra Bischoff. 2009. "Race and Space in the 1990s: Changes in the Geographic Scale of Racial Residential Segregation, 1990–2000." *Social Science Research* 38(1): 55–70.

Rothstein, Richard. 1995. "The Myth of Public School Failure." *The American Prospect* 13 (Spring): 20–34.

Rumberger, Russell W., and Gregory J. Palardy. 2005. "Does Segregation Still Matter? The Impact of Student Composition on Academic Achievement in High School." *Teachers College Record* 107(9): 1999–2045.

Schmidt, George. 2001. "No Excuses for No Excuses." *Phi Delta Kappan* 83(3): 194.

Schwartz, Heather. 2010. "Housing Policy Is School Policy: Economically Integrative Housing Promotes Academic Success in Montgomery County, Maryland." New York: Century Foundation.

Schweinhart, Lawrence J., and David P. Weikart. 1997. "The High/Scope Preschool Curriculum Comparison Study Through Age 23." *Early Childhood Research Quarterly* 12(2): 117–43.

Semuels, Alana. 2015. "The City That Believed in Integration." *The Atlantic,* March 27.

Sharkey, Patrick. 2010. "The Acute Effect of Local Homicides on Children's Cognitive Performance." *Social Sciences* 107(26, June 29): 11733–38.

Slavin, Robert E. 1989. "Class Size and Student Achievement: Small Effects of Small Classes." *Educational Psychologist* 24(1): 99–110.

Tyson, Karolyn. 2011. *Integration Interrupted: Tracking, Black Students, and Acting White After* Brown. New York: Oxford University Press.

Viadero, Debra. 2006. "Race Report's Influence Felt 40 Years Later: Legacy of Coleman Study Was New View of Equity." *Education Week,* June 20.

This content downloaded from 76.102.177.118 on Wed, 20 Feb 2019 23:10:24 UTC
All use subject to https://about.jstor.org/terms

Check for updates

Article

Hispanic Journal of Behavioral Sciences
2017, Vol. 39(2) 169–179
© The Author(s) 2017
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/0739986317700837
journals.sagepub.com/home/hjb
SAGE

Is All Parental "Noninvolvement" Equal? Barriers to Involvement and Their Relationship to Latino Academic Achievement

Jamie D. Alexander[1], Ronald B. Cox Jr.[2], Andrew Behnke[3], and Robert E. Larzelere[2]

Abstract

High parental involvement has consistently been shown to enhance academic achievement among Latino youth. Still, some youth continue to thrive academically despite low parental involvement. The Theory of Rationality suggests that the impact of even potentially negative behaviors depends on how the behavior is interpreted. To test the application of this theory to parental "noninvolvement" among Latinos, we assessed how adolescent rationales about their parents' noninvolvement in their schooling affected grade point average (GPA). Results showed that parental lack of transportation and feeling unwelcomed at school as reasons for noninvolvement were significantly and negatively related to GPA, and conflict with work schedule was significantly and positively related to GPA. Other reasons for noninvolvement were not significantly associated with GPA. Findings indicate that the meaning adolescents attribute to parental

[1]State University of New York at Oswego, NY, USA
[2]Oklahoma State University, Stillwater, OK, USA
[3]North Carolina State University, Raleigh, NC, USA

Corresponding Author:
Jamie D. Alexander, Department of Human Development, State University of New York at Oswego, Oswego, NY 13126, USA.
Email: jamie.alexander@oswego.edu

behavior may be a stronger predictor of academic achievement than the amount of involvement alone.

Keywords
Latino, adolescent, parent involvement, academic achievement

Parental involvement has been consistently associated with increases in adolescent academic achievement (Bogenschneider, 1997; Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2007), and these positive effects have been found across diverse populations (Jeynes, 2007). Thus, parental involvement is important for all youth, regardless of race or socioeconomic status (SES), and consistent efforts to engage parents in their child's learning process are imperative for academic success. Conceptualizing parental involvement as a linear construct, however, suggests that the less involved parents are in their child's schooling the worse child academic outcomes will be and does not necessarily explain why some students do well despite a lack of parental involvement.

Because many minority parents cannot be as involved in their child's schooling compared with nonminority parents due to economic and other barriers (Desimone, 1999; Zhang, Hsu, Kwok, Benz, & Bowman-Perrott, 2011), it is important to understand whether distinct reasons for not being involved influence academic achievement differently. This study adds to the existing literature on the effects of parental involvement by testing whether distinct student perceptions of the reasons for the lack of parental academic involvement affect Latino student's achievement differently.

Background

Latino Parental Involvement

Enhanced interest in Latino parental involvement over the past decade has been spurred by the increase of Latinos in the K-12 population and by disparities in educational achievement relative to students from other ethnic backgrounds (Llagas & Snyder, 2003). Parental involvement has been shown to be a critical determinant of Latino student success (e.g., Delgado-Gaitan, 1992, 1994; Plunkett & Bámaca-Gómez, 2003). One study found parent involvement to be the single strongest predictor of academic success among Latino students (Zuniga, 2004). Still, Latino parents are less likely to be involved in their children's schooling compared with the other major ethnic minorities in the United States (Turney & Kao, 2009).

Latino parents' lack of involvement (e.g., parent-teacher association [PTA], parent-teacher meetings) should not be interpreted as indifference, however. Research has shown that minority parents are highly concerned about their children's academic performance (Trumbull, Rothstein-Fisch, Greenfield, & Quiroz, 2001), and their lack of involvement may be due to cultural differences in how parents participate in and encourage school performance (Trevino, 2004). For example, Latino parents encourage academic performance through setting high standards and expressing commitment to the benefits of education (Ceballo, 2004; Gándara, Larson, Mehan, & Rumberger, 1998). Others have demonstrated that immigrant parents aspired to greater active participation in their children's education but felt that schools were not attentive to their needs (Ramirez, 2003). In particular, Latino immigrant parents have less experience in navigating the U.S. educational system and may be more hesitant to get involved in school environments compared with the native Latino, Caucasian, and African American parents (Pew Hispanic Center, 2004).

Turney and Kao (2009) identified several prominent barriers to Latino parental involvement in their child's schooling. For example, parents who were unable to speak English were less likely to go to parent-teacher conferences or other school-related events, and Latino parents were 5.5 times more likely than native-born Whites to say that language was a barrier to their involvement at their child's school. Latinos were also 2.5 times more likely than Whites to report feeling unwelcomed at schools, which was associated with decreases in parental school-based involvement. Although SES was not a significant barrier to parental involvement in this study, lower SES parents have an increased likelihood of working at inflexible jobs, having transportation difficulties, experiencing a lack of child care, and having lower educational attainment. Thus, being a Latino parent with limited resources may present unique barriers to involvement that more affluent families are not as likely to experience.

Theory of Rationality

Previous findings on the importance of perceived parental involvement on youth academic outcomes (Wong, 2008) and the Theory of Rationality (Elster, 2009; Stone, 2009) suggest that adolescent understanding of the reasons for their parents' lack of involvement might differentially affect their academic achievement. Although the Theory of Rationality (also known as Rational Choice Theory) originated in the field of economics, family scientists and developmental scholars have recently applied it to explain family interaction and adolescent decision-making processes (e.g., Reyna & Rivers, 2008).

The two main assumptions underlying how the Theory of Rationality explains decision making are intentionality and rationality. Intentionality refers to the purposive identification and selection of a choice that is influenced by one's desires for an outcome, while rationality means that the selection of a given choice is based on the preference of this choice over other options (Baert & Carreira da Silva, 2010; Harsanyi, 1986). Rationality, or the rationale for their actions, is attributed to others through a self-reflective, cognitive process that asks,

> What would I do if I were in the same situation? Can I see myself performing the action that that person performed, under a similar set of circumstances and constraints? If I can, then the action is intelligible to me. (Stone, 2009, p. 42)

This suggests that if an adolescent were to perceive and then interpret parental behavior (e.g., lack of school involvement) as logical (rational) through their own set of values and beliefs, then their parent's behavior would be justified and not necessarily detrimental to her or his academic performance.

Current Study

Because some youth continue to show resilience and thrive academically despite low parental involvement, it is important to empirically test whether some reasons for parental "noninvolvement" are negatively associated with academic achievement while others are not. For example, it is plausible that adolescents who attribute their parents' lack of involvement in school to language barriers (something over which they have no control) may be less prone to academic difficulties compared with adolescents who attribute their parents' lack of involvement to disinterest. Because no formal literature exists that examines the relation between academic performance and reasons for parental noninvolvement, we make no formal hypotheses. Instead, we explore the association between adolescent academic performance and parental noninvolvement due to five perceived barriers identified by Turney and Kao (2009) among immigrant parents: work schedule difficulties, language barriers, lack of transportation, child care, and feeling uncomfortable at school.

Method

Data were collected from a convenience sample of 343 Latino adolescents ranging from 13 to 19 years of age (M_{age} = 14.5 years; 59% female) in English Language Learner (ELL) classrooms. Surveys were sent to all ELL

teachers in secondary education across the state of North Carolina. ELL teachers provided surveys to students who were interested and willing to take the survey. Participants were also recruited from a statewide youth conference sponsored by the North Carolina Society of Hispanic Professionals, who also sponsored the survey. Approximately 72% of youth had lived in the United States 5 years or more, 68% of youths' mothers and 69% of their fathers had less than a high school education, and 95% and 82% of youth reported that their mothers and fathers were a part of their lives at the time of the survey, respectively. Data are based on self-reported questionnaires that were available in both English and Spanish. Survey items include questions about demographics (e.g., sex, age, parental education), perceptions of school dropout, parental monitoring, parental expectations, and youth educational aspirations and expectations.

The items used for this study assessed student perceptions of the lack of parental involvement, including "When my parents aren't involved in activities at my school it is because . . ." (1) lack of child care, (2) lack of transportation, (3) language barriers, (4) work schedule difficulties, (5) they don't feel welcomed, and (6) they don't think it is important. Each was measured on a 4-point Likert-type scale with higher scores indicating stronger agreement. Grade point average (GPA) was measured by asking students the number of classes in which they received a specific grade (A, B, C, etc.) the past semester.

Because the level of parental education has consistently been found to be associated with child school performance (Henderson & Berla, 1994) and as a proxy for SES, we included mother's and father's level of education as control variables.

Results

The means, standard deviations, and intercorrelations among variables are presented in Table 1. The two most common reasons given for parental noninvolvement were difficulties concerning their work schedules (64.9% agreement) and language barriers (43.8% agreement). At the other extreme, only 11.4% agreed or strongly agreed that their parents were uninvolved because they considered school unimportant. The latter finding is particularly important in that the students' high disagreement (88.6%) in perceptions that parental noninvolvement was a result of low educational value supports previous findings that Latino parents do care about education even when they are minimally involved in the school domain (Ceballo, 2004; Trumbull et al., 2001). See Table 1 for percentages of student agreement with other reasons for parental noninvolvement.

Table 1. Descriptive Statistics and Intercorrelations Among Key Study Variables.

	M (*SD*)	% Agree[a]	Mother education	Father education	Lack of child care	Work schedule difficulties	Language barriers	Lack of transportation	Feel uncomfortable	Not important
% Agree[a]										
GPA	3.10 (0.68)		.02	−.05	−.10	.15**	−.07	−.18**	−.14*	−.19**
Mother education	0.60 (1.05)			.66**	.05	.01	−.11	0	−.12*	.06
Father education	0.49 (0.91)				.05	.06	−.10	.03	−.08	.15**
Lack of child care	0.21 (0.41)	21.50				.15**	.18**	.32**	.27**	.18**
Work schedule difficulties	0.64 (0.48)	64.90					.24**	.25**	.15**	.05
Language barriers	0.44 (0.50)	43.80						.29**	.34**	.22**
Lack of transportation	0.27 (0.44)	27.10							.29**	.26**
Feel uncomfortable	0.20 (0.40)	19.40								.29**
Not important	0.11 (0.31)	11.40								

Note. *N* ranges from 297 to 342 due to occasional missing data. GPA = grade point average.
[a]Percentage of adolescents who agreed or strongly agreed that this was a reason for their parents' noninvolvement in school.
*$p < .05$. **$p < .001$.

Hierarchical multiple regression was used to test whether reasons for parental noninvolvement differentially affected GPA. The dependent variable (GPA) was regressed onto the independent variables (perceived reasons for parental noninvolvement) using a two-step regression procedure; education level of both the mother and father were in Step 1, followed by the six reasons for noninvolvement in Step 2.

The results of the regression model indicated that adolescents' perceived reasons for parental noninvolvement explained 12.1% of the variance in GPA. Parents' feeling uncomfortable at school, lack of transportation, and perceived lack of importance were all negatively associated with GPA, βs = −.23, −.15, and −.13, respectively, $p < .05$. Work schedule difficulty was positively associated with GPA, β = .23, $p = .001$. Neither language barriers (β = −.03, $p > .10$) nor the lack of child care (β = −.04, $p > .10$) were associated with GPA after controlling for the other predictors in the model. Likewise, mothers' level of education (β = .06, $p > .10$) and fathers' level of education (β = −.08, $p > .10$) were not significantly associated with student GPA in this sample.

Discussion

This study explored whether six reasons adolescents attributed to parental lack of school involvement were each associated with GPA after controlling for education levels of both parents. An important, but not surprising, finding of this study was that when students perceived that parental noninvolvement was due to parents feeling unwelcomed or uncomfortable at school, this was negatively associated with GPA. This finding is consistent with previous research (e.g., Turney & Kao, 2009). It may be that when parents feel like they are welcome at school, their children are similarly more likely to feel a sense of belonging and acceptance. Although we found no study that empirically tested this hypothesis, a robust literature has shown a sense of belonging at school to be an important predictor of Latino academic performance (e.g., Ibanez, Kuperminc, Jurkovic, & Perilla, 2004). Likewise, if previous negative experiences by parents reduce their encouragement and monitoring of student academic performance, this could also affect student GPA (Alfaro, Umaña-Taylor, & Bámaca, 2006).

Parental noninvolvement due to a lack of transportation was associated with lower GPAs. Lack of transportation may be due to a family's lower SES. Having fewer economic resources, adolescents may find it difficult to study due to crowding in the home, limited study space, and/or other contextual distractions (Solari & Mare, 2012). It is also possible that limited involvement at school because of transportation barriers may be viewed negatively

because it is perceived to be an unjustified excuse. For example, youth might reason that parents could find ways to get a car or find ways to get to school activities if they were important to them (e.g., taking the bus or catching a ride with someone). However, this finding could also be explained in other ways. For instance, traditional gender dynamics common among Latino immigrants might limit a mother from attending activities if she does not know how to drive. Immigration status might limit parents from attending if they do not feel they can travel safely to school events, for instance, out of fear of being stopped by authorities. In one study of immigrant families in Oklahoma, families talked about how they limited their travel due to fear of being stopped by police and deported (Cox, Johnston, & Schwerdtfeger, 2010). Because these possibilities are speculative, more research is needed to understand why parental noninvolvement due to a lack of transportation is negatively associated with GPA.

Although a small percentage, students' attributing parental noninvolvement to parents thinking "it is not important" was negatively associated with GPA. And as anticipated, adolescents who reasoned that their parents' noninvolvement was due to low educational value had lower GPAs. However, our results are consistent with other studies (Ceballo, 2004) in that the vast majority of adolescents felt that their parents considered their education as important. This finding suggests that most Latino parents are concerned about their children's education and the absence of their presence at their children's school should not be interpreted as indifference or low educational value toward their children's schooling. Instead, it emphasizes the necessity of examining the needs of Latino parents as it relates to their ability to participate in their children's school-based activities. U.S. educators should then assume that low parental school-based involvement among Latinos might be due to issues surrounding SES, such as lack of transportation and inflexible jobs.

Limitations and Conclusion

At least three important limitations to our findings should be noted. First, the study design was cross-sectional with the typical limitations regarding causal inferences. Second, the sample was a nonprobability sample, which limits its generalizability to all Latino youth. Future research that incorporates a longitudinal design on a representative sample is needed to further explore the relationships between adolescent perceptions of the reasons for parental noninvolvement and academic performance. Finally, data were all adolescent self-report and may not accurately represent parental reasons for noninvolvement. However, it is likely that the child's perception of parental reasons for noninvolvement is a stronger predictor of GPA than actual parental reasoning.

Notwithstanding the aforementioned limitations, this study provides initial evidence that the relationship between parental involvement in school and student performance is more complex than might be thought. When parents are not involved, youth attribute a range of meanings to their noninvolvement. These findings suggest that the meanings youth attribute to parental actions are more important than the actions themselves. A better understanding of youth perceptions for the reasons their parents are not involved may provide schools with a more accurate assessment of a youth's level of risk for low academic achievement, which could, in turn, inform a more efficient use of limited resources.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research study was supported by the North Carolina Society of Hispanic Professionals.

References

Alfaro, E., Umaña-Taylor, A. J., & Bámaca, M. Y. (2006). The influence of academic support on Latino adolescents' academic motivation. *Family Relations*, *55*, 279-291. doi:10.1111/j.1741-3729.2006.00402.x

Baert, P., & Carreira da Silva, F. (2010). The invasion of economic man: From rational choice theory to the new institutionalism. In P. Baert & F. Carreira da Silva (Eds.), *Social theory in the twentieth century and beyond* (pp. 125-154). Malden, MA: Polity Press.

Bogenschneider, K. (1997). Parental involvement in adolescent schooling: A proximal process with transcontextual validity. *Journal of Marriage and Family*, *59*, 718-733.

Ceballo, R. (2004). From barrios to Yale: The role of parenting strategies in Latino families. *Hispanic Journal of Behavioral Sciences*, *26*, 171-186.

Cox, R., Johnston, J., & Schwerdtfeger, K. (2010). *Hispanic children youth and family needs assessment: Technical report for the Oklahoma Cooperative Extension Services*. Stillwater: Oklahoma State University.

Delgado-Gaitan, C. (1992). School matters in the Mexican-American home: Socializing children to education. *American Educational Research Journal*, *29*, 495-513.

Delgado-Gaitan, C. (1994). Socializing young children in Mexican American families: An intergenerational perspective. In P. M. Greenfield & R. R. Cocking (Eds.), *Cross-cultural roots of minority child development* (pp. 55-86). Hillsdale, NJ: Lawrence Erlbaum.

Desimone, L. (1999). Linking parent involvement with student achievement: Do race and income matter? *The Journal of Educational Research*, *93*, 11-29.

Elster, J. (2009). Interpretation and rational choice. *Rationality and Society*, *21*, 5-33. doi:10.1177/1043463108099347

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review*, *13*, 1-22.

Gándara, P., Larson, K. A., Mehan, H., & Rumberger, R. W. (1998). *Capturing Latino students in the academic pipeline*. Berkeley, CA: Chicano/Latino Policy Project.

Harsanyi, J. (1986). Advances in understanding rational behavior. In J. Elster (Ed.), *Rational choice* (pp. 82-107). New York: New York University Press.

Henderson, A. T., & Berla, N. (1994). *A new generation of evidence: The family is critical to student achievement*. Washington, DC: Center for Law and Education.

Hill, N., & Tyson, D. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology*, *45*, 740-763. doi:10.1037/a0015362

Ibanez, G., Kuperminc, G., Jurkovic, G., & Perilla, J. (2004). Cultural attributes and adaptations linked to achievement motivation among Latino adolescents. *Journal of Youth and Adolescence*, *33*, 559-568. doi:0047-2891/04/1200-0559/0

Jeynes, W. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban Education*, *42*, 82-110. doi:10.1177/0042085906293818

Llagas, C., & Snyder, T. D. (2003). *Status and trends in the education of Hispanics*. Washington, DC: U.S. Department of Education, National Center for Educational Statistics.

Pew Hispanic Center. (2004). *Pew Hispanic Center/Kaiser Family Foundation 2004 National Survey of Latinos*. Retrieved from http://www.pewhispanic.org/files/2004/01/7.pdf

Plunkett, S. W., & Bámaca-Gómez, M. Y. (2003). The relationship between parenting and adolescent academic outcomes in Mexican-origin immigrant families. *Hispanic Journal of Behavioral Sciences*, *25*, 222-239.

Ramirez, A. Y. F. (2003). Dismay and disappointment: Parental involvement of Latino immigrant parents. *The Urban Review*, *35*, 93-110.

Reyna, V. F., & Rivers, S. E. (2008). Current theories of risk and rational decision making. *Developmental Review*, *28*, 1-11.

Solari, C. D., & Mare, D. R. (2012). Housing crowding effects on children's wellbeing. *Social Science Research*, *41*, 464-476. doi:10.1016/j.ssresearch.2011.09.012

Stone, P. (2009). Rationality, intelligibility, and interpretation. *Rationality and Science*, *21*, 35-58. doi:10.1177/1043463108099458

Trevino, R. E. (2004). Against all odds: Lessons from parents of migrant high-achievers. In C. Salinas & M. E. Fránquiz (Eds.), *Scholars in the field: The challenges of migrant education* (pp. 147-161). Charleston, WV: Appalachian Educational Laboratory.

Trumbull, E., Rothstein-Fisch, C., Greenfield, P. M., & Quiroz, B. (2001). *Bridging cultures between home and schools: A guide for teachers*. Mahwah, NJ: Lawrence Erlbaum.

Turney, K., & Kao, G. (2009). Barriers to school involvement: Are immigrant parents disadvantaged? *The Journal of Educational Research*, *102*, 257-271.

Wong, M. (2008). Perceptions of parental involvement and autonomy support: Their relations with self-regulation, academic performance, substance use and resilience among adolescents. *North American Journal of Psychology*, *10*, 497-518.

Zhang, D., Hsu, H., Kwok, O., Benz, M., & Bowman-Perrott, L. (2011). The impact of basic-level parent engagements on student achievement: Patterns associated with race/ethnicity and socioeconomic status (SES). *Journal of Disability Policy Studies*, *22*, 28-39. doi:10.1177/1044207310394447

Zuniga, K. Z. (2004). *The influence of individual characteristics and parenting behaviors on adolescent academic performance* (Unpublished doctoral dissertation). Iowa State University, Ames.

Author Biographies

Jamie D. Alexander is an assistant professor in the Department of Human Development at the State University of New York, Oswego. Her research, broadly speaking, focuses on the impact of contextual factors on the well-being of minority families. Currently, her research focuses on the impact of parental and individual influences on the career development and educational attainment of African American adolescents and emerging adults.

Ronald B. Cox Jr. is an associate professor and Cooperative Extension state specialist in the Department of Human Development and Family Science at Oklahoma State University and holds the George Kaiser Family Foundation Endowed Chair in Child and Family Resilience. His research interests include how environmental stressors affect the health of Latino families and children. In particular, he examines how chronic stress affects high-risk behaviors among immigrant Latino youth and how prevention strategies ameliorate these effects.

Andrew Behnke is an associate professor of human development at North Carolina State University, Raleigh. He received his PhD from Purdue University. He developed the "Juntos" dropout prevention program along with Cintia Aguilar. He conducts applied research and outreach on academic achievement among Latino youth, parent involvement in academics, stress and parenting, and Latino fatherhood. His life mission is bringing better attention to those factors that help immigrant Latino families succeed and thrive in the United States. He also enjoys the outdoors with his six awesome kids and amazing wife.

Robert E. Larzelere is the endowed professor of parenting in the Department of Human Development and Family Science at Oklahoma State University. The most cited of his 99 publications are on research methods, survey measures, and child outcomes of parental disciplinary actions, such as reasoning and nonphysical and physical punishment. His latest book (coedited) is *Authoritative Parenting* (APA Press, 2013), featuring Diana Baumrind and 26 other experts on the latest scholarship about that optimal type of parenting.

Psychology of Sport and Exercise 26 (2016) 1–8

Contents lists available at ScienceDirect

Psychology of Sport and Exercise

journal homepage: www.elsevier.com/locate/psychsport

High school athletes' self-determined motivation: The independent and interactive effects of coach, father, and mother autonomy support

Anthony J. Amorose [a, *], Dawn Anderson-Butcher [b], Tarkington J. Newman [b], Mickey Fraina [c], Aidyn Iachini [d]

[a] Illinois State University, School of Kinesiology and Recreation, USA
[b] The Ohio State University, College of Social Work, USA
[c] The Ohio State University, College of Education and Human Ecology, USA
[d] Unviersity of South Carolina, College of Social Work, USA

ARTICLE INFO

Article history:
Received 26 August 2015
Received in revised form
26 April 2016
Accepted 15 May 2016
Available online 17 May 2016

Keywords:
Social influences
Self-determination
Parental influence
Coaching
Youth sport

ABSTRACT

Objectives: The purpose of the study was to examine the independent and interactive influences of athletes' perceptions of autonomy support from their coaches, fathers, and mothers on the athletes' self-determined motivation.
Design: Cross-sectional survey.
Method: High school athletes ($N = 335$; M age = 15.75 years; 62.4% female; 84.2% Caucasian) completed surveys assessing the constructs of interest near the end of their season.
Results: Hierarchical regression analysis results showed that autonomy support from all three social agents significantly and positively predicted self-determined motivation ($R^2 = 0.32$), and the two- and three-way interactions significantly added to the prediction (total $R^2 = 0.35$). Results showed that a relatively high level of self-determined motivation was associated with the perception that at least two of the three social agents provided high levels of autonomy support.
Conclusions: The provision of autonomy support from coaches, mothers, and fathers relate to athletes' self-determined motivation both independently and interactively.
© 2016 Elsevier Ltd. All rights reserved.

Participation in structured sport programs can lead to a number of physical, psychological, and social youth developmental outcomes for youth participants (see Anderson-Butcher, Riley, Iachini, Wade-Mdivanian, & Davis, 2012; Brustad, Smith, & Babkes, 2001). However, accruing these outcomes requires athletes to be motivated to participate. The overall goal of this study to explore factors that impact the motivation of high school athletes using self-determination theory (SDT; Ryan & Deci, 2000, 2002) as a framework. In particular, the focus is on examining the influence of behaviors exhibited by coaches and parents/caregivers, who have been identified as important motivational influences in the context of youth sport (Brustad et al., 2001; Garcia Bengoechea & Strean, 2007; Keegan, Spray, Harwood, & Lavalle, 2010; Mageau & Vallerand, 2003; Weiss, Amorose, & Kipp, 2012).

Children and youth cite multiple motives for participation in sport, such as to have fun, to be part of a group, to learn new skills, and to gain social approval and status (see Weiss & Amorose, 2008). According to SDT (Ryan & Deci, 2000, 2002), each of these motives can be classified along a continuum of self-determination. The most self-determined reason involves intrinsic motivation, which is defined as engaging in an activity for the pleasure and satisfaction derived from the activity itself. Motives can also involve engaging in an activity for instrumental reasons or as a means to some end separable from the activity itself. These motives are classified as extrinsic in nature. According to SDT, there are four types of extrinsic motivation that range on a continuum from lower to higher levels of self-determined behavior including external regulation (*i.e.*, to satisfy an external demand or reward contingency), introjected regulation (*i.e.*, to avoid feelings of guilt or for ego-enhancement), identified regulation (*i.e.*, to participate because the activity is viewed as personally valuable or important), and integrated regulation (*i.e.*, to participate because the activity helps to confirm one's identity and sense of self), respectively (Ryan & Connell, 1989; Ryan & Deci, 2000). Lastly, athletes can experience

* Corresponding author. School of KNR, Illinois State University, Normal, IL 61790-5120, USA.
E-mail address: ajamoro@ilstu.edu (A.J. Amorose).

http://dx.doi.org/10.1016/j.psychsport.2016.05.005
1469-0292/© 2016 Elsevier Ltd. All rights reserved.

a general lack of intention or motivation, which has been labelled as amotivation in SDT (Ryan & Deci, 2002).

From a SDT perspective (Ryan & Deci, 2002), a valuable indicator of motivation involves determining the degree to which one's overall pattern of reasons for participation are more or less self-determined in nature. In many cases, scholars have used a self-determination index (or relative autonomy index) to capture the overall degree of self-determined motivation a person possesses in a particular context (see Ryan, Connell, & Grolnick, 1992; Vallerand & Ratelle, 2002). Research has consistently found that engaging in activities for more self-determined reasons is associated with positive cognitive, affective, and behavioral outcomes (Ryan & Deci, 2002; Vallerand & Ratelle, 2002; Weiss & Amorose, 2008). Given these findings, identifying factors related to the promotion and development of self-determined motivation is an important goal for scholars and practitioners alike.

While numerous factors impact youths' motivation, the behaviors exhibited by adults – namely coaches and parents/caregivers – are particularly influential in the context of sport (Brustad et al., 2001; Garcia Bengoechea & Strean, 2007; Keegan et al., 2010; Mageau & Vallerand, 2003; Weiss et al., 2012). There are clearly multiple motivationally-relevant dimensions of both coach-athlete and parent-athlete interactions and relationships; however, a key dimension of social influence from a SDT perspective is the extent to which others are autonomy-supportive versus controlling (Amorose, 2007; Amorose & Anderson-Butcher, 2016; Joussemet, Landry, & Koestner, 2008; Mageau & Vallerand, 2003; Ryan & Deci, 2002). An authority figure, such as a coach or parent/caregiver, who is autonomy-supportive engages in behaviors that acknowledge their subordinates' thoughts and feelings, encourages choice and self-regulation of people's own behavior, and minimizes the use of pressure and demands to control them. Conversely, pressuring their subordinates to think, feel, and act in a way consistent with the desires of the authority figure characterizes a controlling interpersonal style. According to SDT, those who are autonomy-supportive engage in behaviors that help to promote self-determined motivation by supporting or facilitating the fundamental psychological needs for competence (i.e., to perceive our behaviors and interactions with the environment as effective), autonomy (i.e., to perceive our actions and thoughts to be freely chosen and that we are the origins of our behavior), and relatedness (i.e., to perceive we are socially connected and experience a sense of belongingness). Controlling behaviors, on the other hand, lead to less self-determined motivation by thwarting these needs (Joussemet et al., 2008; Mageau & Vallerand, 2003; Ryan & Deci, 2002).

Research in a variety of arenas (*e.g.*, health, education, sport and exercise) has found support for the positive motivational effects of adults' autonomy-supportive behaviors (see Mageau & Vallerand, 2003; Standage, Gillison, & Treasure, 2007; Weiss et al., 2012). In the context of sport, for instance, studies have found a positive link between perceived autonomy support from coaches and athletes' self-determined motivation (*e.g.*, Amorose & Anderson-Butcher, 2007, 2016; Gagné, Ryan, & Bargmann, 2003; Gillet, Vallerand, Amoura, & Baldes, 2010; Pelletier, Fortier, Vallerand, & Briére, 2001). Gagné et al. (2003) also reported a link between perceived parental autonomy support and motivation in a diary study conducted on a small sample of adolescent female gymnasts. Specifically, gymnasts' initial rating of the degree of autonomy support they received from their parents positively and significantly related to their initial level of intrinsic motivation for gymnastics and to their average daily level of identified regulation and self-determined motivation (based on a relative autonomy index) across 15 practices spanning a 4-week time period.

While these studies help establish links between youth sport athletes' motivational orientation and the degree to which adults in the sport environment are autonomy-supportive, many questions still remain due to limitations in this line of research. First, despite the robust findings with coaches, there is a paucity of research testing the motivational consequences associated with autonomy-supportive behaviors exhibited by athletes' parents/caregivers. Evidence of the positive effects of parental autonomy support on self-determined motivation can be found in other non-sport contexts such as academics (*e.g.*, Niemiec et al., 2006; Soenens & Vansteenkiste, 2005), physical education (*e.g.*, Vierling, Standage, & Treasure, 2007), and leisure-time physical activity (*e.g.*, Hagger et al., 2009). Little research exists examining parental autonomy support in youth sport contexts, even though recent qualitative research has highlighted parental autonomy support as a motivationally-relevant aspect of the parent-athlete relationship (Garcia Bengoechea & Strean, 2007; Holt, Tamminen, Black, Mandigo, & Fox, 2009; Keegan et al., 2010). Nevertheless, the only direct test of the relationship between parental autonomy support and youth athletes' self-determined motivation is the study by Gagné et al. (2003). This study, however, was conducted on a small sample of female gymnasts so the extent to which the beneficial effect of parental autonomy support generalizes to a more diverse group of athletes is unknown.

Further, scholars, such as Fredricks and Eccles (2004), have suggested that exploring the differential effects of fathers and mothers is a worthwhile line of inquiry. However, studies on sport parents/caregivers typically instruct athletes to report on the behaviors or relationships with their most prominent parent (*e.g.*, Jowett & Cramer, 2010). Sometimes researchers combine mothers and fathers together in a single parent dimension, such was the case with Gagné et al. (2003) who only measured the gymnasts' perceptions of *overall* parental autonomy support rather than exploring the behaviors of the athletes' mothers and fathers separately. The few exceptions to these approaches (*e.g.*, Babkes & Weiss, 1999; Ullrich-French & Smith, 2006, 2009), however, suggest that treating mothers and fathers separately may provide a more nuanced and complete understanding of parental influence. For instance, Ullrich-French and Smith (2009) provided evidence suggesting that mothers were more salient than fathers when predicting continuation of sport participation in a sample of youth soccer players. Thus, exploring the degree to which mothers and fathers differentially engage in autonomy-supportive behaviors and whether the effect of autonomy support from mothers and fathers uniquely, or in combination, affect their children's self-determined motivation should make a meaningful contribution to the literature.

Another significant limitation in this line of inquiry is the lack of research specifically testing the independent and *combined* effects of coaches, and parents. Athletes experience relationships and interactions with their coaches, fathers, and mothers concurrently and the motivational influence of these social agents may be complex in nature. A number of recent studies have specifically focused on testing whether the combined effect of multiple social influences contributes to the understanding of various motivational outcomes in sport above and beyond the independent effects of these social influences (*e.g.*, Jowett & Cramer, 2010; Riley & Smith, 2011; Ullrich-French & Smith, 2006, 2009). The results of these studies – which focused heavily on the quality of athletes' relationships with peers, parents, and/or coaches – provide support for the utility of considering the combined or interactive nature of these relationships. For instance, Ullrich-French and Smith (2006) examined the independent and interactive effects of parent relationship quality, friendship relationship quality, and peer acceptance on various motivational outcomes in a sample of youth sport athletes. Result from a series of hierarchical regression analyses

showed that significant interaction effects emerged in the prediction of enjoyment and perceived competence. Specifically, athletes who reported at least two of the three social relationship variables as positive reported higher levels of enjoyment and perceived competence in comparison to athletes who reported less than two positive quality social relationships. In a follow up study, Ullrich-French and Smith (2009) found that the interaction between mother relationship quality, friendship quality, and peer acceptance significantly predicted the probability of continuing sport participation in these athletes. Based on these studies, Ullrich-French and Smith (2006, 2009) concluded that positive motivationally-relevant outcomes for youth athletes may necessitate multiple high quality social relationships.

The emergence of these significant interactions would support a threshold versus an additive model of supportive relationships (see Laursen & Mooney, 2008). In an additive model, psychological responses would improve with each addition of a supportive relationships. For example, perceiving high levels of support from one's mother and father would result in more positive psychological responses than if someone perceived support from only one of his/her parents. A threshold model, on the other hand, views support as potentially redundant. Once a particular threshold of support is obtained, psychological adjustment will not necessarily be enhanced with the addition of more supportive relationships. Furthermore, any negative effect of a lack of support from a particular significant other might be buffered, as long as a sufficient amount of support exists from others.

A recent study by Guay, Ratelle, Larose, Vallerand, and Vitaro (2013) comparing these models within the context of SDT also provides some evidence supporting the threshold model when considering motivational outcomes in education. Using latent class analysis, Guay and colleagues uncovered three groups of high school students who varied on the amount of perceived autonomy support provided by their mother, father, and teacher. One group reported low autonomy support from all 3 sources, another group reported moderate autonomy support from all 3 sources, and the third group reported low autonomy support from their father, but moderate support from their mother and teacher. Results showed that students reporting low autonomy support from all three sources were significantly lower on self-reported perceptions of competence, autonomous motivation (intrinsic and identified regulation), controlled motivation (introjected and external regulation), and academic achievement (official school grades) compared to the group reporting relatively higher (albeit moderate) levels of autonomy support from all three sources. While this would support an additive model, the comparisons also revealed that the group reporting moderate autonomy support from their mothers and teachers, but low autonomy support from their fathers were no different than the students reporting moderate support from all three sources on the self-reported motivational variables. Thus, perceiving low autonomy support from one source (i.e., fathers) generally did not result in more negative motivational outcomes. Rather, perceiving moderate levels of autonomy support from 2 of the 3 sources seemed sufficient to result positive outcomes, at least in education settings.

Taken together, considering the interactive effects of multiple significant others may contribute to our understanding of motivational outcomes. It is, though, important to acknowledge that the emergence of significant interactive effects in the recent studies with athletes (Jowett & Cramer, 2010; Riley & Smith, 2011; Ullrich-French & Smith, 2006, 2009) depends on a host of factors, such as the combination of social relationships being explored and the motivational outcome being tested, as the addition of the interactions did not always explain additional variance in these studies. Further, even when interactions emerged, the magnitude of the effects was relatively small. Nevertheless, these studies suggest that a more complete understanding of athletes' motivation may necessitate examining how the behaviors of coaches, fathers, and mothers independently and interactively affect athletes. However, no studies have adopted this approach in exploring the relationships between autonomy-supportive behaviors exhibited by coaches and parents/caregivers and athletes' self-determined motivation.

The purpose of this study was to examine the independent and interactive influence of youth athletes' perceptions of autonomy support from their coaches, fathers, and mothers, on athletes' self-determined motivation. It is expected that autonomy support from each of the social agents would positively relate to the level of self-determined motivation reported by the athletes. However, it is also hypothesized that the interaction of autonomy support from coaches, fathers, and mothers would significantly add to the prediction of athletes' self-determined motivation above and beyond the independent effects of these influences. Similar to the general pattern of findings by Ullrich-French and Smith (2006, 2009), and consistent with a threshold model of supportive relationships (Laursen & Mooney, 2008), it was expected that relatively higher levels of self-determined motivation would not require high support from all three sources. Rather, a high level of autonomy support from at least two of the three social agents was expected to result in relatively higher levels of self-determined motivation in comparison to situations where athletes perceived lower autonomy support from two or more of the social agents. Given the lack of previous research, no specific hypothesis was forwarded on which combination of the sources would be associated relatively higher or lower self-determined motivation.

1. Methods

1.1. Participants

The participant sample ($N = 335$) was comprised of male ($n = 126$) and female ($n = 209$) youth athletes from a variety of individual and team sports from the Midwestern portion of the United States. Participants, who ranged in age from 14 to 18 years ($M = 15.75$, $SD = 1.21$), were recruited from school-based athletic teams. The average number of years of participation in the athletes' respective sport was 6.98 ($SD = 3.37$). The average number of seasons on their current team was 1.99 ($SD = 1.14$), and the average years playing with their current coach was 1.71 ($SD = 1.21$). Most athletes self-identified as Caucasian (84.20%).

1.2. Measures

1.2.1. Self-determined motivation

The Behavioral Regulation in Sport Questionnaire (BRSQ; Lonsdale, Hodge, & Rose, 2008) was used to assess athletes' self-determined motivation for their sport. The 24-item BRSQ includes subscales measuring intrinsic motivation (*e.g.*, "because I find it pleasurable"), integrated regulation (*e.g.*, "because it's an opportunity to just be who I am"), identified regulation (*e.g.*, "because I value the benefits of my sport"), introjected regulation (*e.g.*, "because I would feel ashamed if I quit"), external regulation (*e.g.*, "because I feel pressure from other people to play"), and amotivation (*e.g.*, "but I wonder what's the point"). Response options for items ranged from *not true at all* to *very true*, and were scored on a 7-point likert scale with higher scores reflecting greater endorsement of that motive for participating in sport. Consistent with procedures described in Lonsdale, Hodge, and Rose (2009), a single score was calculated – the self-determination index – to reflect the extent to which athletes' motivation was more or less self-

determined in nature. Specifically, the subscale scores were weighed (external regulation = −2; introjected regulation = −2; identified regulation = 1; integrated regulation = 1; intrinsic motivation = +2), and then computed a sum of the weighted scores. Based on this procedure, higher scores reflect more self-determined motivation. Evidence supporting the psychometric properties of the BRSQ is reported by Lonsdale et al. (2008).

1.2.2. Perceived coach autonomy support

Athletes' perception of the autonomy-supportive behaviors exhibited by their *coaches* over the course of the season was assessed using the short version of the Sport Climate Questionnaire ("Perceived autonomy support", 2004). The 6 items reflect the athletes' general perception that their coach demonstrates an interpersonal style that is supportive of his/her psychological needs (*e.g.*, "I feel that my coach provides me choices and options"; "My coach conveys confidence in my ability to do well at athletics"; "I feel understood by my coach"). Response options, which range from *strongly disagree* to *strongly agree*, are scored on a 7-point scale with higher scores indicating a more autonomy-supportive coaching style. Research by Amorose and Anderson-Butcher (2007) on a sample of high school and college athletes have provided evidence that the items are reliable and valid.

1.2.3. Perceived father and mother autonomy support

Athletes' perceptions of autonomy support from their fathers and mothers over the course of the season were assessed using items modified from other non-sport-specific autonomy support measures, such as the Perceptions of Parents Scale (Robbins, 1994) and Perceived Autonomy Support Scale for Exercise Settings (Hagger et al., 2007). Consistent with the focus of the autonomy support subscale embedded in the Perceptions of Parents Scale, the items we used focused on the degree to which parents/caregivers supporting the athletes' choices and autonomous self-regulation. The items included: "My mother/father …" (1) "provides me with choices and options about whether to participate in my sport", (2) "encourages me in a positive way to participate in my sport", (3) "allows me to decide things for myself when it comes to my sport participation", (4) "supports my decisions about my sport participation", (5) "respects my thoughts about wanting to play my sport", and (6) "supports what I want to do when participating in my sport". Response options, which range from *strongly disagree* to *strongly agree*, are scored on a 5-point Likert scale with higher scores indicating that the athlete perceived his/her mother/father to be more autonomy-supportive. Athletes completed separate versions of the scale for their father and mother. The instructions specified that if the athlete did not spend any time with his/her biological mother/father then he/she should answer the questions with respect to a female/male guardian or another adult women/man that lives in their home. If nobody fit those criteria, the athlete was instructed to leave the questions blank. For ease, we have chosen to make reference to these scores as mothers or fathers.[1]

1.3. Procedures

Approved Institutional Review Board procedures were followed in terms of securing assent/consent from parents/guardians and athletes prior to the beginning of the study. Data for this study were collected at a regularly scheduled practice session near the end of the athletes' competitive season (*i.e.*, approximately 1–2 weeks prior to the last official competition). At this time, players who had documented parental/guardian consent were given a verbal description of the project and were provided with questionnaires if they agreed to participate. Participants were given as much time as needed and were told that their answers would remain confidential. Coaches and parents were asked to leave the area while the athletes completed the surveys. These data were collected as part of a larger study focused on youth sport participation.

1.4. Data analyses

Following standard data screening procedures and basic descriptive analyses, we tested the main research question using a hierarchical regression analysis based on procedures outlined by Aiken and West (1991). The independent effects of coach, father, and mother autonomy support were entered on step one of the hierarchical regression equation predicting self-determined motivation. The 2-way interaction terms (*i.e.*, coach-father, coach-mother, mother-father) were then entered on the second step and the 3-way interaction term (coach-father-mother) was entered on the third step to determine whether the combination of the different significant others added to the prediction of athletes' motivation beyond the independent effects. Consistent with the recommendations of Aiken and West (1991), the predictor variables were centered and the interaction terms were formed as the cross-product of the centered variables. To assist in the interpretation of a significant interaction, predicted values were computed by systematically substituting values equal to +1 *SD* and −1 *SD* for the autonomy support variables into the final regression equation, which were then used to create separate regression lines representing individuals with relatively high and low levels on each source of autonomy support (see Aiken & West, 1991).

2. Results

2.1. Preliminary analyses

The descriptive statistics and correlations for the study variables are presented in Table 1. The internal consistency estimates (α) for all the measures ranged from 0.81 to 0.96, indicating acceptable reliability. Mean scores on all measures were above the midpoint of the respective scales, suggesting that the athletes were relatively self-determined in their motivation for sport and perceived their coaches, mothers, and fathers to be autonomy-supportive. As a way to further describe the data, a MANOVA was conducted to explore whether there were any gender differences in the set of variables. Results revealed non-significant difference, Wilk's $\lambda\,(4, 330) = 0.98$, $p = 0.08$, $\eta^2 = 0.03$. Although the multivariate effect was non-significant, univariate F values indicated that female and male participants did differ in perceived father autonomy support, $F\,(1, 334) = 5.91$, $p < 0.05$, $\eta^2 = 0.02$, with the females reporting significantly higher autonomy support (see Table 1).

There were significant positive relationships between the athletes' self-determined motivation and their perceptions of

[1] Given the items assessing autonomy support from parents have not been used previously, we conducted some preliminary CFA testing to establish initial factorial validity of the scale. This involved testing a factor model which specified two correlated latent variables – one representing mother autonomy support and one representing father autonomy support. As a way to reduce the number of parameters being estimated, we reduced the six items that would load on each of the latent variables to three 2-item parcels (so there were 3 items for each parent). Because the same items were used for each parent, we allowed for correlated errors between corresponding item parcels. The overall fit of the model to the data was good, $X^2 = 6.44$, $df = 5$, $p = 0.27$; RMSEA = 0.028, CFI = 1.00, TLI = 1.00, and all of the completely standardized factor loadings were 0.73 or higher. We also tested a model where we constrained the factor loadings for the same item parcels for mothers and fathers to be equal. This model also fit the data well, $X^2 = 6.90$, $df = 7$, $p = 0.44$; RMSEA = 0.00, CFI = 1.00, TLI = 1.00, suggesting a minimal level of measurement invariance across the 2 parent subscales. Further details on these analyses are available upon request from the first author.

Table 1
Descriptive statistics and correlations among study variables.

Variable	1.	2.	3.	4.
1. Self-Determined Motivation	–			
2. Coach Autonomy Support	0.47	–		
3. Mother Autonomy Support	0.40	0.33	–	
4. Father Autonomy Support	0.42	0.32	0.50	–
Cronbach alpha (α)	0.74–0.89*	0.96	0.86	0.92
Potential Range	−24 to 24	1 to 7	1 to 5	1 to 5
Mean (*SD*)	9.07 (6.53)	4.96 (1.56)	4.07 (0.86)	3.91 (1.02)

Notes. All correlation significant at $p < 0.05$. * These values represents the range of alpha coefficient of the 5 motivation subscales from the BRSQ used in the calculation of the self-determined motivational index.

autonomy support from each significant other based on the bivariate correlations (see Table 1).[2] Further, coach, father, and mother, autonomy support were all positively related to each other. Interestingly, while scores from the father and mother autonomy support scales demonstrated the strongest correspondence among the social agents ($r = 0.50$), the moderate strength of this relationship suggests that the athletes' perception of autonomy support from their parents was relatively distinct.

2.2. Main analysis

The primary research question was tested with a hierarchical regression analysis. The results showed that each step of the hierarchical regression was significant. Specifically, self-determined motivation was significantly predicted by coach, father, and mother autonomy support in step 1, $F\ (3, 331) = 52.68$, $p < 0.01$, $R^2 = 0.32$. The addition of the 2-way interaction terms on step 2 significantly increased the amount of variance explained, $\Delta R^2 = 0.02, p < 0.05$, as did the addition of the 3-way interaction term on step 3, $\Delta R^2 = 0.01, p < 0.05$. While the addition of the interaction effects accounted for only a small amount of the variance (total $\Delta R^2 = 0.03$) relative to the amount accounted for by the main effects alone ($R^2 = 0.32$), the full regression model was deemed the most appropriate to interpret.

The specific results of the analysis are presented in Table 2. Autonomy support from each source was found to be a significant and positive predictor of self-determined motivation. Based on the standardized regression coefficients (β) and the squared-semipartial correlations (sr^2), perceived coach autonomy support had the strongest independent effect on the athletes' motivation ($\beta = 0.38$; $sr^2 = 0.11$), followed by fathers ($\beta = 0.21$; $sr^2 = 0.03$) and mothers ($\beta = 0.18$; $sr^2 = 0.02$). Nevertheless, the significant 3-way interaction suggests a more complex pattern of relationships between the autonomy support variables and self-determined motivation.

Using the procedures recommended by Aiken and West (1991) and Cohen and Cohen (1983), separate regression lines were plotted representing individuals with relatively high and low levels on each source of autonomy support. These regression lines, which are illustrated in Fig. 1, highlight the effect of autonomy support from fathers and mothers as a function of the degree of autonomy support from coaches. In all four combinations of father and mother autonomy support levels, higher levels of perceived autonomy support from coaches was associated with higher predicted self-determined motivation. Slope different tests (Dawson & Richter, 2006) were used to compare the magnitude of each pair of regression slopes to determine if any were significantly different. Results indicated that the magnitude of the slopes were all the same with the exception of the high father, high mother autonomy support slope, which demonstrated a significantly ($p < 0.05$) weaker positive effect on self-determined motivation compared to the remaining 3 slopes.

Visual inspection of Fig. 1 provides some additional information regarding the pattern of influence of autonomy support on self-determined motivation. For example, it is clear in looking at the predicted values that the lowest level of motivation was found when there was low perceived autonomy support from coach, fathers, and mothers. The highest predicted value came when the athletes perceived high levels of autonomy support from all three sources; however, essentially the same high level of self-determined motivation was predicted when athletes perceived high levels of autonomy support from any two social agents (*i.e.*, coach and father, coach and mother, father and mother). Thus, perceiving relatively lower levels of autonomy support from coach, father, or mothers does not seem to be negatively associated with self-determined motivation as long as the athlete perceives relatively high levels of autonomy support from the other two sources.

3. Discussion

The purpose of the study was to examine the independent and interactive influence of athletes' perceptions of autonomy support from their coaches, fathers, and mothers on athletes' self-determined motivation. Overall, support was found for the specific hypotheses advanced. First, the bivariate correlations and the regression analyses confirmed our expectation that autonomy support from all three social agents would be positively related to the athletes' level of self-determined motivation. This finding was not very surprising given the extensive research across multiple contexts demonstrating the positive motivational effects of adults' autonomy-supportive behaviors (see Mageau & Vallerand, 2003; Standage et al., 2007). However, the current study goes beyond coach autonomy support to demonstrate that autonomy support from both fathers and mothers predict athletes' motivation within the context of sport as well.

[2] Similar to Ullrich-French and Smith (2006) and Jowett and Cramer (2010), we examined whether males and females exhibited a different pattern of relationships among the autonomy support and self-determined motivation variables by testing for gender differences in the correlations using procedures identified by Cohen and Cohen (1983). The goal was to determine if there was a statistical rationale for testing the main research question using separate hierarchical regression analyses for the male and female athletes. However, no significant ($p < 0.05$) gender differences were found in the correlations between self-determined motivation and any of the autonomy support variables. There was one significantly different correlation found in the relationships among the autonomy support variables. Specifically, males reported a stronger relationship between their perception of autonomy support from their coach and mothers compared to females ($r = 0.51$ vs. 0.22), although both were significant positive correlations. Given the minimal differences found – particularly among the autonomy support and self-determined motivation variables – and with the aim of maximizing the power to detect any significant interactions among the sources of autonomy support, the male and female athletes were combined in the analysis testing the main research question.

Table 2
Results of the final regression equation predicting self-determined motivation (N = 335).

Predictor variables	Regression coefficients		*t*	*p*<	Correlations	
	B (*SE B*)	*β*			*r*	sr^2
Constant	9.41 (0.32)	–	29.17	0.01	–	–
Coach Autonomy Support (CAS)	1.58 (0.22)	0.38	7.30	0.01	0.47	0.11
Mother Autonomy Support (MAS)	1.40 (0.42)	0.18	3.34	0.01	0.40	0.02
Father Autonomy Support (FAS)	1.37 (0.34)	0.21	4.01	0.01	0.42	0.03
CAS × MAS	−0.34 (0.24)	−0.08	−1.40	0.16	−0.19	0.00
CAS × FAS	−0.49 (0.22)	−0.13	−0.2.26	0.02	−0.23	0.01
MAS × FAS	−0.05 (0.30)	−0.01	−0.18	0.89	−0.21	0.00
CAS × MAS X FAS	−0.39 (0.17)	−0.13	−2.28	0.02	0.26	0.01

Note. Overall regression results, $F(7, 327) = 25.31$, $p < 0.01$, $R^2 = 0.35$.

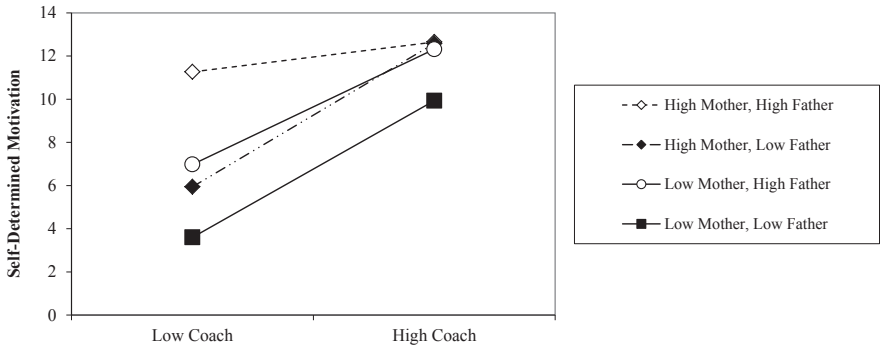


Fig. 1. Regression lines illustrating the significant interaction of coach, mother, and father autonomy support on the prediction of athletes' self-determined motivation.

While our findings indicated each of these social agents were important, a unique aspects of our findings was that the *interaction* of autonomy support from coaches, fathers, and mothers explained additional variance above and beyond the independent effects. Based on the recent research by Ullrich-French and Smith (2006, 2009) and Jowett and Cramer (2010), we expected that a significant interaction would emerge among the multiple social influences. While the magnitude of the interactive effect that emerged was small (total $\Delta R^2 = 0.03$), especially relative to the amount of variance in self-determined motivation explained by the independent effects alone ($R^2 = 0.32$), this result shows that a consideration of more complex relationship patterns can contribute to our understanding of self-determined motivation.

Consistent with the study's hypothesis, the pattern of the interaction indicated that high levels of autonomy support from at least two of the three social agents would result in relatively higher levels of self-determined motivation in comparison to situations where athletes perceived lower autonomy support from two or more of the social agents. This pattern supports the claim made by Ullrich-French and Smith (2006) that adaptive motivational outcomes might necessitate quality relationships and positive interactions with multiple significant others. This is an interesting idea insomuch as a lack of autonomy support from any one source may be buffered by the availability of autonomy support from multiple others in the sport environment.

This finding also is consistent with a threshold model of supportive relationships (see Guay, Ratell, Larose, Vallerand, & Vitaro, 2013; Laursen & Mooney, 2008). A question for future research is to explore more deeply what constitutes a sufficient degree of autonomy support surrounding a particular context. Furthermore, research should explore whether there are particular sources or combination of sources of autonomy support that are more or less effective at satisfying athletes' psychological needs and promoting positive motivational outcomes. Our results did provide some evidence that coaches may have a more significant influence on high school athletes. For example, based on the size of the standardized regression coefficients and squared multiple correlations, results indicated that coach autonomy support has a stronger relationship with athletes' motivation relative to either parent. The increasing amount of time spent in deliberate practice and training with more expert coaches that occurs as athletes progress in their athletic careers into the specializing and investment stages of development – which arguably the current study's sample of athletes fall – might explain why coaches become more influential in sport-specific motivational and achievement-related outcomes (Côté, Baker, & Abernethy, 2007). Some support for the relatively stronger influence of coaches in comparison to parents/caregivers can be found in studies focused on self-perceptions of competence, as well (*e.g.*, Amorose, 2003; Jowett & Cramer, 2010). Still, relatively higher levels of self-determined motivation in this study could be found with relatively lower autonomy support from the coach, as long as the athletes perceived higher levels of autonomy support from both their mothers and fathers. Thus, autonomy support from others may be able to buffer the potentially negative effects of a lack of support even from an otherwise particularly influential significant other.

It is important to note the relative influence of autonomy support from coaches versus parents/caregivers that any variations may be grounded in differences in the conceptualization and measurement of autonomy support across these social agents. The measure used in this study to assess coach autonomy support included items reflecting athletes' perception of the extent to which their coach provided support for the all three psychological needs specified as critical according to SDT (Ryan & Deci, 2000, 2002) – namely competence (example item, "My coach conveys confidence in my ability to do well at athletics"), autonomy (example item, "I feel that my coach provides me choices and options"), and relatedness (example item, "I feel understood by my

coach"). Thus, the measure taps a relatively broad-based perception that the coach is more or less supportive of the athletes' psychological needs, and consequently is considered to be more or less autonomy-supportive (see Mageau & Vallerand, 2003). The parent/caregivers measure used in the current study, on the other hand, focused more exclusively on the satisfaction of the athletes' need for autonomy. The items did not specifically ask about the extent to which the athletes perceived their mother/father engaged in behaviors that made them feel competent or a sense of relatedness, but rather directly targeted the provision of support granted regarding the athletes' choices and self-regulated actions. Thus, while both of the coach and parent/caregivers assessments are consistent with the nature of autonomy support (Joussemet et al., 2008; Mageau & Vallerand, 2003; Ryan & Deci, 2002), differences in the scope of assessments might account for any relative differences. Future research may need to reconcile these slightly different – albeit related – conceptualizations of autonomy support to adequately address any questions regarding the relative influence of coaches versus parents.

Similarly, any conclusions about the influence of parent/caregivers autonomy support must be tempered given that the measures used to assess mother and father autonomy support were developed specifically for this study. The content of the items were based heavily on existing non-sport-specific measures (*e.g.*, Perceptions of Parents Scale); however, future work needs to confirm adequate psychometric properties of the scales. That being said, in addition to the items have strong face validity, evidence from this study suggest the scales possess a reasonable level of reliability and validity. For instance, both the father and mother version demonstrated high levels of internal consistency supporting the reliability of the measures, and some preliminary CFA testing support the factorial validity of the scales (see Footnote 1). Further, scores on these autonomy support measures were positively related to self-determined motivation supporting the predictive validity of the scales. Finally, the degree of relationship between the father and mother versions was similar in magnitude to those reported in non-sport studies using distinct versions of measures to assess mother and father autonomy support (Guay et al., 2013; Niemiec et al., 2006; Soenens & Vansteenkiste, 2005). This again suggests that the scores on the parent measure behaved as expected based on previous SDT-based research.

There are some other noteworthy limitations of the current study. First, the cross-sectional nature of the study does not allow for any definitive conclusions about the causal sequence of the relationships. While SDT would argue that any changes in the degree of autonomy support athletes receive should have a causal influence on their need satisfaction and subsequent motivational orientation, a reciprocal pattern can also occur. That is, the level of self-determined motivation of an athlete may cause his or her coach and/or parents/caregiver to be more or less autonomy supportive or controlling with the athlete. Pelleiter and Vallernad (1996) provided evidence in a mock teaching situation that supervisors were more autonomy-supportive in their interactions when they believed the individual they were working with was intrinsically motivated, whereas they were more controlling when working with those believed to be extrinsically motivated. Research also suggests that a child's behavior will impact the degree to which parents/caregivers adopt more autonomy-supportive or controlling parenting style (see Grolnick & Apostoleris, 2002; Joussemet et al., 2008). Consequently, future research will need to employ longitudinal and/or experimental designs to determine the exact causal sequence as well as the potential mediating role of need satisfaction.

Another limitation of the study is that we only considered one motivationally-relevant outcome – namely the extent to which the athletes possessed a self-determined motivational orientation. Theory and research indicate that autonomy-supportive behaviors are effective in promoting a wide range of positive psychological and behavioral outcomes (*e.g.*, Adie, Duda, & Ntoumanis, 2008; Coatsworth & Conroy, 2009; Gagné et al., 2003; Gillet et al., 2010; Smith, Ntoumanis, & Duda, 2010). Given that the emergence of significant interactive effects of parent and peer relationship quality in the Ullrich-French and Smith studies (2006, 2009) and coach and parent relationship quality in Jowett and Cramer (2010) occurred only when certain motivationally-relevant outcomes were tested, there is a need to replicate these findings with other cognitive, affective, and behavioral outcomes. For instance, we suggest that studies test the interactive effects of coaches and parents/caregivers on athletes' psychological need satisfaction, as support for the needs for competence, autonomy, and relatedness conceptually serve as the mechanism by which autonomy-supportive and controlling behaviors impact self-determined motivation (see Ryan & Deci, 2002; Vallerand & Ratelle, 2002; Weiss & Amorose, 2008). Further, future studies would benefit from exploring differences through a profile approach such as through the use of a cluster analysis or latent class analysis to differentiate specific forms of motivation groupings and their associations to specific outcomes (Guay et al., 2013; Ullrich-French & Cox, 2009).

Future studies should also investigate multiple dimensions of coach and parent behaviors. Although the degree to which these social agents are autonomy-supportive is critical, SDT scholars have also identified the provision of structure and involvement as important elements of social influence (see Joussemet et al., 2008; Mageau & Vallerand, 2003; Ryan & Deci, 2002). Recent scholarship has also demonstrated that autonomy-supportive and controlling behaviors exhibited by coaches are distinct (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2010), and considering them separately and in combination may enhance understanding of social influences in sport.

4. Conclusion

In summary, the results of this study add to the literature on motivation and social influences in sport. Results show that perceptions of autonomy support from coaches, fathers, and mothers, each were related to athletes' self-determined motivation. Furthermore, findings suggest that the degree of autonomy support from these significant others in combination may add to the understanding of athletes' motivation for sport. Specifically, results showed that a relatively high level of self-determined motivation was associated with the perception that at least two of the three significant others provided high levels of autonomy support.

References

Adie, J. W., Duda, J. L., & Ntoumanis, N. (2008). Autonomy support, basic need satisfaction and the optimal functioning of adult male and female sport participants: a test of basic needs theory. *Motivation and Emotion, 32*, 189–199.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage Publications.

Amorose, A. J. (2003). Reflected appraisals and perceived importance of significant others' appraisals as predictors of college athletes' self-perceptions of competence. *Research Quarterly for Exercise and Sport, 74*, 60–70.

Amorose, A. J. (2007). Coaching effectiveness: exploring the relationship between coaching behavior and motivation from a SDT perspective. In N. Chatzisarantis, & M. S. Hagger (Eds.), *Self-determination in sport and exercise* (pp. 209–227). Champaign, IL: Human Kinetics.

Amorose, A. J., & Anderson-Butcher, D. (2007). Autonomy-supportive coaching and self-determined motivation in high school and college athletes: a test of self-determination theory. *Psychology of Sport & Exercise, 8*, 654–670.

Amorose, A., & Anderson-Butcher, D. (2016). Exploring the independent and interactive effects of autonomy-supportive and controlling coaching behaviors on adolescent athletes' motivation for sport, Sport. *Exercise, and Performance*

Psychology, 4, 206–218.
Anderson-Butcher, D., Riley, A., Iachini, A., Wade-Mdivanian, R., & Davis, J. (2012). Sports and youth development. In R. J. R. Levesque (Ed.), *Encyclopedia of adolescence* (pp. 2846–2859). New York: Springer.
Babkes, M. L., & Weiss, M. R. (1999). Parental influence on children's cognitive and affective responses to competitive soccer participation. *Pediatric Exercise Science, 11*, 44–62.
Bartholomew, K. J., Ntoumanis, N., & Thøgersen-Ntoumani, C. (2010). The controlling interpersonal style in a coaching context: development and initial validation of a psychometric scale. *Journal of Sport & Exercise Psychology, 32*, 193–216.
Brustad, R. J., Babkes, M. L., & Smith, A. L. (2001). Youth in sport: psychological considerations. In R. N. Singer, H. A. Hausenblas, & C. M. Janelle (Eds.), *Handbook of sport psychology* (2nd ed., pp. 604–635). New York: John Wiley & Sons.
Coatsworth, J. D., & Conroy, D. E. (2009). The effect of autonomy-supportive coaching, need satisfaction, and self-perceptions on initiative and identity in youth swimmers. *Developmental Psychology, 45*, 320–328.
Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
Côté, J., Baker, J., & Abernethy, B. (2007). Practice and play in the development of sport expertise. In G. Tenenbaum, & R. C. Eklund (Eds.), *Handbook of sport psychology* (3rd ed., pp. 184–202). Hoboken, NJ: John Wiley & Sons.
Dawson, J. F., & Richter, A. W. (2006). Probing three-way interactions in moderated multiple regression: development and application of a slope difference test. *Journal of Applied Psychology, 91*, 917–926.
Fredricks, J. A., & Eccles, J. S. (2004). Parental influences on youth involvement in sports. In M. R. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 145–164). Morgantown, WV: Fitness Information Technology.
Gagné, M., Ryan, R. M., & Bargmann, K. (2003). Autonomy support and need satisfaction in the motivation and well-being of gymnasts. *Journal of Applied Sport Psychology, 15*, 372–389.
Garcia Bengoechea, E., & Strean, W. B. (2007). On the interpersonal context of adolescents' sport motivation. *Psychology of Sport and Exercise, 8*, 195–217.
Gillet, N., Vallerand, R. J., Amoura, S., & Baldes, B. (2010). Influence of coaches' autonomy support on athletes' motivation and sport performance: a test of the hierarchical model of intrinsic and extrinsic motivation. *Psychology of Sport and Exercise, 11*, 155–161.
Grolnick, W. S., & Apostoleris, N. H. (2002). What makes parents controlling? In E. L. Deci, & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 161–182). Rochester, NY: The University of Rochester Press.
Guay, F., Ratell, C., Larose, S., Vallerand, R. J., & Vitaro, F. (2013). The number of autonomy-supportive relationships: are more relationships better for motivation, perceived competence, and achievement? *Contemporary Educational Psychology, 38*, 375–382.
Hagger, M., Chatzisarantis, N. L. D., Hein, V., Pihu, M., Soós, I., & Karsai, I. (2007). The perceived autonomy support scale for exercise settings (PASSES): development, validity, and cross-cultural invariance in young people. *Psychology of Sport and Exercise, 8*, 632–653.
Hagger, M., Chatzisarantis, N. L. D., Hein, V., Soós, I., Karsai, I., Lintunen, T., et al. (2009). Teacher, peer, and parent autonomy support in physical education and leisure-time physical activity: a trans-contextual model of motivation in four nations. *Psychology and Health, 24*, 689–711.
Holt, N. L., Tamminen, K. A., Black, D. E., Mandigo, J. L., & Fox, K. R. (2009). Youth sport parenting styles and practices. *Psychology of Sport & Exercise, 31*, 37–59.
Joussemet, M., Landry, R., & Koestner, R. (2008). A self-determination theory perspective on parenting. *Canadian Psychology, 49*, 194–200.
Jowett, S., & Cramer, D. (2010). The prediction of young athletes' physical self from perceptions of relationships with parents and coaches. *Psychology of Sport and Exercise, 11*, 140–147.
Keegan, R., Spray, C., Harwood, C., & Lavallee, D. (2010). The motivational atmosphere in youth sport: coach, parent, and peer influences on motivation in specializing sport participants. *Journal of Applied Sport Psychology, 22*, 87–105.
Laursen, B., & Mooney, K. S. (2008). Relationship network quality: adolescent adjustment and perceptions of relationships with parents and friends. *American Journal of Orthopsychiarty, 78*, 47–53.
Lonsdale, C., Hodge, K., & Rose, E. A. (2008). The behavioral regulation in sport questionnaire (BRSQ): instrument development and initial validity. *Journal of Sport & Exercise Psychology, 30*, 323–355.
Lonsdale, C., Hodge, K., & Rose, E. A. (2009). Athlete burnout in elite sport: a self-determination perspective. *Journal of Sport Sciences, 27*, 785–795.
Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: a motivational model. *Journal of Sport Sciences, 21*, 883–904.
Niemiec, C., Lynch, M. F., Vansteenkiste, M., Bernstein, J., Deci, E. L., & Ryan, R. M. (2006). The antecedents and consequences of autonomous self-regulation for college: a self-determination theory perspective on socialization. *Journal of Adolescence, 29*, 761–775.
Pelleiter, L. G., & Vallernad, R. J. (1996). Supervisors' beliefs and subordinates' intrinsic motivation: a behavioural confirmation analysis. *Journal of Personality and Social Psychology, 71*, 331–340.
Pelletier, L. G., Fortier, M. S., Vallerand, R. J., & Briére, N. M. (2001). Associations among perceived autonomy support, forms of self-regulation, and persistence: a prospective study. *Motivation and Emotion, 25*, 279–306.
Perceived autonomy support: The Climate questionnaires. Retrieved May, 15, 2004, from University of Rochester, Department of Psychology Web site: http://www.psych.rochester.edu/SDT/measures/auton_sport.html.
Riley, A., & Smith, A. L. (2011). Perceived coach-athlete and peer relationships of young athletes and self-determined motivation for sport. *International Journal of Sport Psychology, 42*, 115–133.
Robbins, R. J. (1994). *An assessment of perceptions of parental autonomy support and control: Child and parent correlates*. Unpublished Doctoral Dissertation. Department of Psychology, University of Rochester, 1994.
Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: examining reasons for acting in two domains. *Journal of Personality and Social Psychology, 57*, 749–761.
Ryan, R. M., Connell, J. P., & Grolnick, W. S. (1992). When achievement is not intrinsically motivated: a theory and assessment of self-regulation in school. In A. K. Boggiano, & T. S. Pittman (Eds.), *Achievement and motivation: A social-developmental perspective* (pp. 167–188). Cambridge, MA: Cambridge University Press.
Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78.
Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory: an organismic-dialectical perspective. In E. L. Deci, & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Rochester, NY: The University of Rochester Press.
Smith, A., Ntoumanis, N., & Duda, J. (2010). An investigation of coaching behavior, goal motives, and implementation intentions as predictors of well-being in sport. *Journal of Applied Sport Psychology, 22*, 17–33.
Soenens, B., & Vansteenkiste, M. (2005). Antecedents and outcomes of self-determination in 3 life domains: the role of parents' and teachers' autonomy support. *Journal of Youth and Adolescence, 34*, 589–604.
Standage, M., Gillison, F., & Treasure, D. C. (2007). Self-determination theory and motivation in physical education. In N. Chatzisarantis, & M. S. Hagger (Eds.), *Self-determination in sport and exercise* (pp. 71–86). Champaign, IL: Human Kinetics.
Ullrich-French, S., & Cox, A. (2009). Using cluster analysis to examine combinations of motivation regulations of physical education students. *Journal of Sport and Exercise Psychology, 31*, 358–379.
Ullrich-French, S., & Smith, A. L. (2006). Perceptions of relationships with parents and peers in youth sport: independent and combined prediction of motivational outcomes. *Psychology of Sport and Exercise, 7*, 193–214.
Ullrich-French, S., & Smith, A. L. (2009). Social and motivational predictors of continued youth sport participation. *Psychology of Sport and Exercise, 10*, 87–95.
Vallerand, R. J., & Ratelle, C. F. (2002). Intrinsic and extrinsic motivation: a hierarchical model. In E. L. Deci, & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 37–64). Rochester, NY: The University of Rochester Press.
Vierling, K. K., Standage, M., & Treasure, D. C. (2007). Predicting attitudes and physical activity in an "at-risk" minority youth sample: a test of self-determination theory. *Psychology of Sport and Exercise, 8*, 795–817.
Weiss, M. R., & Amorose, A. J. (2008). Motivational orientations and sport behavior. In T. S. Horn (Ed.), *Advances in sport psychology* (2nd ed., pp. 11–156). Champaign, IL: Human Kinetics.
Weiss, M. R., Amorose, A. J., & Kipp, L. E. (2012). Youth motivation and participation in sport and physical activity. In R. Ryan (Ed.), *The Oxford handbook of motivation*. New York, NY: Oxford University Press.

J Youth Adolescence (2015) 44:1702–1719
DOI 10.1007/s10964-015-0334-9

EMPIRICAL RESEARCH

Parental Involvement Across Middle and High School: Exploring Contributions of Individual and Neighborhood Characteristics

Sakshi Bhargava[1] · **Dawn P. Witherspoon**[2]

Received: 20 May 2015 / Accepted: 16 July 2015 / Published online: 28 July 2015
© Springer Science+Business Media New York 2015

Abstract Parental involvement in education is crucial during adolescence when grades decline and youth autonomy increases. This study examined parental involvement trajectories from 7th to 11th grade and explored whether individual and neighborhood characteristics affected this change. European American and African American (66 %) families participated (N = 1377, primary caregivers: 92 % female; adolescents: 51 % male, initial age range: 11–14). Results showed that, over time, parents reduced home- and school-based involvement but consistently engaged in academic socialization. Individual and neighborhood characteristics contributed differentially to parental involvement trajectories. These findings suggest that parental investment in adolescents' education persists during this critical developmental period, but individual and contextual differences impact the use of these strategies, which has implications for family-school partnerships and interventions.

Keywords Home-based involvement · School-based involvement · Academic socialization · Race · Socioeconomic status · Gender · Neighborhood structure · Social dynamics

✉ Sakshi Bhargava
sub229@psu.edu

✉ Dawn P. Witherspoon
dpw14@psu.edu

[1] Department of Psychology, The Pennsylvania State University, 223 Moore Building, University Park, PA 16803, USA

[2] Department of Psychology, The Pennsylvania State University, 217 Moore Building, University Park, PA 16803, USA

Introduction

Parental involvement is an important determinant of youth's educational success and is linked to higher academic performance and motivation across grade levels and racial-ethnic groups (Hill et al. 2004; Wang and Sheikh-Khalil 2014). During adolescence, parental involvement may be a particularly important parenting strategy because many youth experience declines in academic performance and are at an increased risk of dropping out of school (Simmons and Blyth 1987; Wang and Eccles 2012). Yet, at this critical developmental stage, parental involvement in education may change as the parent-youth relationship undergoes renegotiation and adolescents seek more autonomy from their parents (Gutman and Midgley 2000; Hill and Chao 2009). Research suggests that parental involvement declines after elementary school (Crosnoe 2001; Eccles and Harold 1996; Izzo et al. 1999). However, these studies do not take into account the multidimensional nature of parental involvement (Hill and Tyson 2009) or explore more developmentally appropriate forms of this education-focused parenting strategy. It is possible that not all forms of parental involvement decline during adolescence. Parents may reduce involvement in strategies that may infringe upon adolescents' autonomy (e.g., homework assistance, volunteering at school) but increase involvement in strategies that allow them to scaffold independence in youth and promote youth's decision making ability (e.g., communicating the value of education).

The parental involvement changes mentioned above may have implications for adolescents' academic success. Yet, few studies have empirically examined the trajectories of different types of parental involvement during multiple adolescent developmental periods (i.e., early and middle adolescence) (See Eccles and Harold 1996; Wang et al.

2014). Further, the extent to which parental involvement changes over time may depend on one's social position (race, socioeconomic status (SES), and adolescents' gender) and neighborhood context (disadvantage, resources, and cohesion and trust), as suggested by Garcia Coll et al. (1996) Integrative model. For example, high SES parents may engage in more parental involvement than low SES parents as high SES parents may be able to provide more academic resources for youth (Wang and Sheikh-Khalil 2014). Also, parents living in disadvantaged neighborhoods (low SES) may engage in lower levels of warmth and communication with their adolescents (Simons et al. 1997), which may limit their involvement in youth's education. Although, several studies have examined neighborhood effects on parenting styles (e.g., authoritarian and authoritative parenting styles) (Simons et al. 1997, 2005), little is known about how neighborhood characteristics may affect parent's use of educational involvement strategies across middle and high school.

The goal of the present study was to extend understanding of parental involvement in education during early and middle adolescence, from middle to high school. It does so by examining multiple involvement strategies among racially and socioeconomically diverse families during this critical developmental period and by examining how social position and neighborhood context contribute to changes in parental involvement during adolescence. This study offers insight into the ways that parents become and/or remain involved in their adolescent's education during adolescence—an important time for academic achievement and growth, which has implications for future success.

Conceptualizations of Parental Involvement

Parental involvement is broadly defined as "parents' interactions with schools and with their children to promote academic success" (Hill et al. 2004, p. 1491). Several frameworks have been proposed to conceptualize parental involvement (Epstein 1992; Comer 1995). Overall, these frameworks consider parental involvement to be a multifaceted construct that includes a wide variety of parenting practices (Fan and Chen 2001). Hill and Tyson (2009), in their meta-analysis, empirically identified and validated three types of parental involvement, which parents may implement during adolescence (i.e., post-elementary school), namely parental *home-based involvement*, *school-based involvement*, and *academic socialization* (Hill and Tyson 2009). *Home-based involvement* includes strategies like supervision of and assistance with homework and the provision of intellectually engaging materials, such as books. *School-based involvement* includes attending parent-teacher conferences, volunteering at school, and engaging in discussions with school personnel (Hill and Tyson 2009). These types of school involvement are distinct in that attending parent-teacher conferences and communicating with school personnel may be more direct such that they require reciprocal communication between parents and teachers, whereas volunteering at school may be relatively less direct as it allows parents to have a presence at school and be involved but may not require specific, education-related communication with teachers. Further, *academic socialization* is an indirect form of involvement; it is a communication-focused strategy that allows parents to convey their academic expectations and aspirations while also providing youth autonomy (e.g., selecting course work for class). Academic socialization includes discussion about the links between schoolwork and current events, the value of education, and youth's future plans (Hill and Tyson 2009). All three types of parental involvement are empirically shown to be related to youth's academic outcomes such as academic performance and engagement across middle and high school (Hill and Tyson 2009; Wang et al. 2014; Wang and Sheikh-Khalil 2014).

Changes in Parental Involvement Across Middle and High School

Middle and high schools have different structures than elementary schools (McGill et al. 2012); yet, they provide fewer opportunities for autonomy that adolescents crave (Chen and Gregory 2010; Holcomb-McCoy 2007), leading to a mismatch between adolescents' developmental needs and demands of the new school setting. Relatedly, as youth exit elementary school and move to middle and high school, parents may alter the way that they are involved in their adolescents' education. Cross-sectional studies that examine parental involvement suggest a decline in parents' home- and school-based involvement after elementary school (Izzo et al. 1999). Over time, to provide adolescents with more autonomy, parents may reduce their involvement in strategies that may be perceived by youth as intrusive or as an infringement on autonomy and instead increase engagement in strategies that are less intrusive and promote decision making in youth (Wang et al. 2014).

During middle school, parents are likely to engage in direct forms of *home-based involvement* such as providing structure at home and supervising adolescents' homework (Hill and Tyson 2009; McGill et al. 2012). Parents are also likely to engage in fundraising and other administrative duties with teachers (*school-based involvement*). Yet, these activities do not always provide the opportunity for close relationships to form between teachers and parents due to the increased number of teachers and less welcoming environment of middle school (Hill and Tyson 2009). In addition, parents may also engage in *academic socialization*, the most developmentally appropriate strategy, as it allows parents to

remain involved in youth's education and simultaneously give youth autonomy and decision making power (Hill and Tyson 2009). In middle school, parents engage in academic socialization by communicating their academic aspirations and expectations to youth to motivate them in the educational domain (Fan and Chen 2001, Hill and Tyson 2009).

In contrast, in high school, parents may engage in less direct forms of parental involvement to accommodate youth's developmental needs and provide them with autonomy. Some studies indicate that parents of high school students tend to reduce their levels of daily supervision of homework (*home-based involvement)* (Catsambis and Garland 1997; Stone 2006). To compensate for reduced involvement at home, parents may increase communication with teachers (*school-based involvement*). Research findings on school-based involvement during high school are mixed. Some studies indicate that parents increase communication with teachers and school personnel to learn about courses that may help prepare their adolescents for college entrance exams (Catsambis and Garland 1997); whereas, others show reduced direct interactions among parents and teachers to provide adolescents with more autonomy (Stone 2006, Wang and Sheikh-Khalil 2014). In addition to school-based involvement, parents may engage in *academic socialization* by communicating the importance of education to their youth and talking candidly with them about their educational attainment expectations for them. However, there is a dearth of empirical evidence regarding parents' academic socialization during the high school years. On average, studies examining academic socialization have focused on parental aspirations and expectations and how they are perceived by their adolescents (Chen and Gregory 2010). Very few studies examining academic socialization have operationalized it as discussions with adolescents about their course selection or future goals. However, Stone (2006) examined parents' and adolescents' discussions about high school course selection and found that parents engaged in less academic socialization over time as adolescents' moved from 8th to 10th grade. More research is needed to get a comprehensive understanding of the developmental trajectory of academic socialization, given that it is a developmentally appropriate strategy for parental involvement in middle and high school education and a predictor of adolescent academic engagement and achievement (Wang and Sheikh-Khalil 2014).

Effects of Social Position (Race, SES, and Gender) on Parental Involvement

The extent to which parents engage in various involvement strategies may vary with parents' and adolescents' social position (i.e., race, SES, and youth's gender) (Garcia Coll et al. 1996). Due to varied understandings of the parental role in adolescents' education (Hill et al. 2004) and unique experiences with the school system (Hill and Tyson 2009), parents from different racial and SES backgrounds may utilize differing parental involvement strategies during the middle and high school years. African American parents, as compared to European American parents, tend to be less involved at school and more involved at home (Hill and Tyson 2009; Wang and Sheikh-Khalil 2014) because of prior negative school and discrimination experiences (Cross 2003). Although, not much is known about race differences in academic socialization, Stone (2006) showed that African American parents were more engaged in academic socialization than European American parents, which may be related to racial minorities' cultural belief in the utility and importance of education as a means to be successful. However, Wang and Sheikh-Khalil (2014) found no race differences at 10th grade. Also, researchers find SES differences in parental involvement strategies with adolescents. Specifically, low SES parents are more likely to engage in less home-based involvement, school-based involvement, and academic socialization (Hill et al. 2004; Wang and Sheikh-Khalil 2014) due to limited material and social resources (Reynolds 1992). Further, parents may have different educational expectations for their boys and girls (Wood et al. 2010) and may therefore engage in different involvement strategies for male and female adolescents. Sui-Chu and Willms (1996) showed that parents engaged in more homework supervision (home-based involvement) and school communication (school-based involvement) for boys than girls. Although little is known about gender differences in academic socialization, Wood et al. (2010) showed that African American parents held lower expectations for educational attainment for boys than girls, suggesting possible gender differences in youth's academic socialization.

Neighborhood Influences on Parental Involvement

Along with social position variables (e.g., race, gender, and SES), the Integrative model (Garcia Coll et al. 1996) suggests that parental educational involvement strategies may be shaped by parents' neighborhoods. The neighborhood context can act as either an inhibitor to (e.g., risk) or promoter of (e.g., asset) academic success, and is often characterized by its structural characteristics (e.g., neighborhood disadvantage, institutional resources) and social dynamics (e.g., presence of positive relationships) (Byrnes and Miller 2012). Social disorganization theory (Kingston et al. 2009; Shaw and McKay 1942) suggests that neighborhood disadvantage (indexed by poverty, low SES, and limited resources) prevents neighborhood residents from maintaining social and physical order (Leventhal and

Brooks-Gunn 2000), which can create mistrust as well as weakened social ties and support among neighbors (Sampson and Groves 1989). These declines in social ties and support may increase the burden on individual parents to raise their youth (Simons et al. 1997). The stress created by the limited availability of neighborhood institutional resources (i.e., quality and positive places for youth to congregate), increased poverty, and greater prevalence of crime and violence may encourage parents to use restrictive and controlling parenting strategies (e.g., curfew times and increased behavioral supervision) (Leventhal and Brooks-Gunn 2000). These types of strategies may also translate into increased control and supervision in the academic domain (i.e., home-based parental involvement such as homework supervision). Relatedly, research suggests that parents living in disadvantaged neighborhoods, characterized by low SES as well as high unemployment rates and female-headed households, are less likely to engage in communication with their adolescents (Simons et al. 1997). Therefore, it is reasonable to assume that parents residing in disadvantaged neighborhoods may engage in less communication-based parental involvement (i.e., academic socialization) than their counterparts.

Along with neighborhood disadvantage, one's perception of social processes in the neighborhood may influence parental involvement in adolescents' education. Putnam's (1993) social capital theory suggests that neighborhoods provide opportunities for individuals to form social networks based on interpersonal trust, reciprocity, and cooperation. These networks may serve as a basis for information and resource exchange. Given that neighborhood social capital depends on the level of trust among individuals, a neighborhood with high social capital may be characterized as cohesive with mutual trust among its residents. These social resources may reduce parents' stress and help them engage in a less restrictive parenting style (authoritative parenting) (Byrnes and Miller 2012), which may be expressed with less enforcement of strict rules and structure for doing academic work at home. Also, as authoritative parents tend to have high achievement expectations for their children and foster these demands through bidirectional communication (Spera 2005), it is likely that parents living in neighborhoods with high cohesion and trust may also engage in more academic socialization. One study to date has examined the effects of neighborhood social dynamics on parental involvement. Furstenberg et al. (1999) did not find any effect of neighborhood context on parent's home-based involvement; yet, they did show that parents living in cohesive neighborhoods were more likely to participate in school activities (i.e., school-based involvement) than parents living in less cohesive neighborhoods. Overall, the neighborhood literature has examined how neighborhood context is associated with parenting styles. There is limited knowledge about the association between the neighborhood context and education-based parenting strategies such as parental home- and school- based involvement and academic socialization. This study sought to address this gap.

The Current Study and Hypotheses

With a better understanding of how educational parenting strategies change over time and for whom these changes are most pronounced, we can gain important information that may be beneficial in enhancing adolescents' academic achievement trajectories. Therefore, the goals of the current study were to determine (1) how parental involvement strategies change during adolescence (i.e., do they increase, decrease or remain stable across middle and high school) and (2) if these strategies vary by race, SES, adolescents' gender, and neighborhood factors across middle and high school. We expected parents to reduce their home- and school-based involvement (Eccles and Harold 1996) and increase engagement in academic socialization as adolescents move from middle school to high school, given the developmental appropriateness of academic socialization (Hill and Tyson 2009). We expected parents' race, SES, and youth's gender to be associated with parental involvement across middle and high school such that African American parents will display more home-based involvement and academic socialization and less school-based involvement than European American parents across grade levels (Eccles and Harold 1996; Wang and Sheikh-Khalil 2014). We hypothesized that high SES parents will be more involved in adolescents' education than low SES parents during middle and high school (Wang and Sheikh-Khalil 2014). Further, we expected that, during middle and high school, parents will engage in more academic socialization for girls and more home- and school-based involvement for boys (Catsambis and Garland 1997). In addition, we expected parents living in more cohesive neighborhoods to engage in more school-based involvement than parents living in less cohesive neighborhoods (Furstenberg et al. 1999). As little is known about the relationship between neighborhood structural and social characteristics and other parental involvement strategies, these analyses were exploratory, and we offer no directional hypotheses about other forms of involvement.

Methods

Sample

The sample for this study came from the Maryland Adolescent Development in Context Study (MADICS), a multi-

wave longitudinal study (Eccles 1997). A total of 1482 diverse families from a Maryland county participated. Due to the limited representation of other racial-ethnic groups in the sample, the current study only includes African American and European American families (N = 1377, wave 1) who participated at waves 1 (beginning of 7th grade), 2 (N = 1125, end of 7th grade), 3 (N = 1108, 8th grade), or 4 (N = 988, 11th grade).

Of the 1377 parents (i.e., caregivers) present at wave 1, approximately 93 % were females. Primarily, parents were mostly mothers (87 %), fathers (6 %), and other family members (7 %). Approximately, 66 % of the parents and 67 % of the adolescents were African American. The average age of adolescents at wave 1 was 12.28 ($SD = 0.55$). Approximately 92 % of the parents graduated from high school, with the median education level being 1 year of post-high school education. Parents' income ranged from less than $10,000 to more than $70,000, with a median income between $40,000 and $50,000. According to 1990 census data, the average household income in the United States was $38,543 ($40,307—European American; $25, 871—African American); Maryland's average household income was higher ($47,904). In Prince George's county, where the study sample was drawn, the average household income was $48,606; European American households ($52,768) had higher incomes than their African American households ($45,196) (US Census Bureau 1990a, b). These estimates demonstrate the racial and socioeconomic stratification in the United States, but also show the relative affluence of residents in Prince George's county. At waves 1, 3, and 4, parents and adolescents completed face-to-face interviews and self-administered questionnaires. At waves 2 and 3, parents and adolescents also participated in a phone interview.

Measures

Family Demographic Variables

Demographic variables included adolescents' race and gender as well as parents' race and SES. Parents and adolescents provided their gender and race. SES was measured by parents' education level and total annual family income. Parents reported the highest grade they completed and responded to a 16 point scale ranging from 1 (less than $5 K) to 16 (more than $75 K) to indicate their pre-tax income. The response range was re-coded to 1(less than $10 K) to 10 (more than $70 K). Higher scores indicated higher income.

Parental Involvement Variables

Youth's Perception of Parental Involvement in Schooling This scale was adapted from the Philadelphia family management study (Furstenberg et al. 1999). As parents' reports of home-based involvement were not available at all three waves, this scale measured youth's perceptions. Only two items from the scale (i.e., parents help with school work and parents check homework after it's completed) were present at all three waves (i.e., waves 1, 3, and 4). Adolescents' responded on a 6-point scale from 1 (almost never) to 6 (almost every day). On average, at wave 1, adolescents reported that their parents were engaged in home-based involvement several times per week ($M = 4.24$, $SD = 1.55$). This scale demonstrated good internal reliability ($\alpha = 0.77$–0.79).

School Involvement The measure on school involvement was used to determine the extent to which parents were involved at their adolescents' school and communicated with teachers. This measure consisted of eight open-ended questions and measured the frequency with which parents communicated with school personnel. Only five of the eight questions were present at all three waves (i.e., wave 2, 3, and 4), and were included in this study. Due to the differing types of school involvement (volunteering and communication), we assessed the school involvement indicators separately. Parents reported a number in response to each of these questions "How many times did you attend a parent teacher conference?", "How many times did you contact the school about child?", "How many times did you receive a note from the school about child?", "How many times did you help out at school by doing things like going to school performances, helping with fund raising, etc.?", and "How many times did you go to an open house?". For the purpose of analyses, the responses were converted into a fixed range format that ranged from 1 (0 times) to 6 (5 or more times). Questions on parent-teacher conference attendance, contacting teachers, and receiving notes from school were combined to create a composite score to assess parents' school-based communication. Questions on parents helping out at school and attending open house were combined to create a composite score to assess parents' volunteerism at school. On average, in 7th grade, parents engaged in school-based communication and volunteerism about two times ($M_{communication} = 3.06$, $SD = 1.00$; $M_{volunteerism} = 3.05$, $SD = 1.43$). Higher scores indicated more school-based involvement.

Parental Communication with Youth This scale was adapted from the Philadelphia family management study (Furstenberg et al. 1999). It was used to measure the strategies that parents used for the academic socialization of their adolescent. The original scale consisted of six items and measured the frequency with which parents communicated with the youth about things like plans for the future and courses youth should take in school. Only two items (i.e., parent and youth discussion about youth's plans for the future and courses youth should take in school) were

available at all three data collection waves and were included in the scale to measure academic socialization. Responses ranged from 1(almost never) to 6 (almost every day). On average, at wave 1, parents engaged in academic socialization about 1-3 times a month ($M = 3.12$, $SD = 1.21$). This scale was available at waves 1, 3, and 4 and demonstrated good reliability ($\alpha = 0.78$–0.82).

For information on descriptive statistics of parental involvement strategies by respondent's race and adolescents' gender, see Table 3 in "Appendix".

Neighborhood Variables

Neighborhood Resources Parents indicated if neighborhood institutional resources were present at wave 1. The original measure included six items; however, only four youth, educational specific institutional resources items (e.g., afterschool recreational programs for children) were used. A count of the number of neighborhood resources was created. On average, at least three institutional resources were present in the neighborhood ($M = 2.97$, $SD = 1.36$). Higher scores indicated more neighborhood institutional resources.

Neighborhood Cohesion and Trust The neighborhood cohesion and trust scale was adapted from the Denver Youth Study (Elliott et al. 2006). Four items from this scale (e.g., "This is a close knit neighborhood") were used in this study. At wave 1, parents indicated on a 5-point scale ranging from 1(strongly agree) to 5 (strongly disagree) the level of social support present in the neighborhood (i.e., higher scores indicated more cohesion and trust). On average, parents were ambivalent about the extent to which they felt close to their neighbors and could trust them ($M = 3.37$, $SD = 0.72$; $\alpha = 0.77$).

Archival Neighborhood Data Addresses reported by parents at wave 1 were geo-coded to link to census tract data from 1990. The census tract data was then used to create a measure of neighborhood disadvantage. Three variables–percent female headed households, percent unemployed in the civilian labor force, and percent families living below the poverty level–were included. Each of these indicators has been used in prior studies (Leventhal and Brooks-Gunn 2000; Witherspoon and Hughes 2014). On average, families lived in neighborhoods where 23 % of the households were headed by females, 4 % of the adults (16 years and older) were unemployed, and 4 % of the families lived below the federal poverty level. Data was available for 89 % of the families that participated in the study. The scale had good internal reliability ($\alpha = 0.87$). Each of the structural indicators was standardized and a mean score, neighborhood disadvantage, was computed. Standardized scores (i.e., z-scores) ranged from -1.26 to 2.94, with higher scores indicating greater neighborhood disadvantage.

For information on descriptive statistics of neighborhood characteristics by parent's race, see Table 4 in "Appendix".

Covariate

Parental Efficacy The parental efficacy scale was used to measure the extent to which parents felt efficacious in influencing their youth's academic outcomes. The scale consisted of 2 items—"How effective do you feel you are in helping your 7th grader in math?" and "How effective do you feel you are in helping your 7th grader in other school subjects?"—on a 7 point scale from 1(not at all effective) to 7(very effective). On average, at wave 1, parents saw themselves as somewhat effective in helping their adolescents with their academics ($M = 4.94$, $SD = 1.49$). This scale was included at wave 1 and had good internal reliability ($\alpha = 0.73$). Higher scores indicated more feelings of efficacy as reported by the parents.

Analysis Plan

Preliminary Analyses

Correlation analyses were performed among key variables (See Table 1 for wave 1 [7th grade] correlations). Intraclass Correlation Coefficients (ICCs) were computed to determine the proportion of between-neighborhood (e.g., census tract) differences in parental involvement. ICCs for home- (0.03) and school-based (0.03–0.08) involvement as well as academic socialization (0.04) were relatively small and suggested that the proportion of variance attributable to between neighborhood differences was less than 8 %. Because the between-neighborhood variability in parental involvement was relatively small (Witherspoon and Ennett 2011), we proceeded with multilevel modeling analyses using only 2 levels (i.e., time and individual) in SAS v.9.3.

Substantive Analyses

Multi-level modeling (MLM) analyses were conducted using SAS Proc Mixed 9.3, with maximum likelihood estimation (Raudenbush and Bryk 2002). The data was not multiply imputed before running the analyses, despite missing values, due to the robustness of multilevel modeling against missing data (Quené and Van den Bergh 2004). Analyses for this study were conducted using a linear fit model, because the present study uses data from only three time points; fitting quadratic models to less than four data points is not recommended (Raudenbush and

Table 1 Correlation among parental involvement strategies, neighborhood variables, and individual characteristics at 7th grade

	1	2	3	4	5	6	7	8	9	10
1. Parent education	–									
2. Parent income	.44**	–								
3. Parental efficacy	.24**	.10**	–							
4. Home-based involvement	.03	−.04	.22**	–						
5. School-based communication	.07*	−.06	.07*	.13*	–					
6. Volunteerism	.26**	.25**	.15**	.03	.10**	–				
7. Academic socialization	.02	−.004	.21**	.09**	.08*	.09**	–			
8. Neighborhood disadvantage	−.29**	−.42**	.008	.08**	.10**	−.22**	.08**	–		
9. Neighborhood resources	.27**	.28**	.04	−.02	.007	.25**	.01	−.35**	–	
10. Cohesion and trust	.12**	.23**	.07**	.04	−.08**	.14**	.05*	−.24**	.22**	–

* $p < .05$; ** $p < .01$

Bryk 2002). First, to investigate any between person differences in parental involvement in middle school, unconditional means models (i.e., no predictors included in the model) were estimated for home-based involvement, school-based communication and volunteerism, as well as academic socialization.

Next, to examine changes in parental involvement strategies over time (research question 1), a total of four unconditional growth models were estimated for each parental involvement strategy: home-based involvement, school-based communication, volunteerism, and academic socialization. Time was specified at level 1 (within person) and the individual (parent/adolescent) was specified at level 2 (between person). Adolescent's grade level was centered at 7th grade and used as the time measure. The models for home-based involvement, school-based communication, and volunteerism included fixed effects of intercept and slope and random effects of intercept only as the G-matrix (estimated covariance parameters) for their unconditional growth models was non-positive definite suggesting that between person variance for either the intercept or slope parameter was very small (West et al. 2007; Witherspoon and Ennett 2011). The models were therefore re-specified and the random effects of slope were not examined in these models. The academic socialization model included fixed and random effects of intercept and slope. Further, to examine if social position variables and neighborhood context predicted change in parental involvement across middle and high school (research question 2), individual difference variables (race, gender, SES) and their interactions with time were added first in the conditional model as level 2 predictors. Because parental efficacy has been shown to be related to parental involvement (Green et al. 2007; Hoover-Dempsey et al. 2005), it was included as a time invariant, level 2 covariate. The parental efficacy-time interaction was included as a cross-level interaction. Next, neighborhood variables and their interaction with time were entered in the conditional model as level 2 predictors, after adjusting for parents' and adolescents' individual characteristics and parental efficacy.

Last, we tested models that included interactions between race and SES (i.e., individual and neighborhood) to determine if there were differential associations between race and parental involvement strategies by SES. These models degraded model fit (i.e., AIC and BIC increased) and the interactions were non-significant. Therefore, the final models (see Table 2) do not include these interaction terms.

Race and gender were included as dichotomous variables (0 = European American, 1 = African American; 0 = female, 1 = male). Continuous variables (i.e., SES, parental efficacy, and perceived neighborhood characteristics) were grand mean centered. Reporter's race, either adolescent or parent, was used in the home-based involvement or school-based involvement and academic socialization models, respectively.

Results

Preliminary Analyses

Missing Data Analyses

A total of 1377 parents and adolescents completed surveys at wave 1. Approximately 82 % of the families participated at wave 2 (phone interviews); about 80 % of the families participated at wave 3, and 69 % of the families participated at wave 4. Further, 55 % of the families participated at all 4 waves; 26.5 % of the families participated at 3 waves; 12.7 % of the families participated at only 2 waves whereas 5.6 % of the families participated at only 1 wave. No race differences were observed between the families that participated at all 4 waves and at only 1 wave. However, SES differences were observed such that families that

Table 2 Multilevel modeling analyses results of parental involvement strategies

	Home-based involvement		School-based communication		Volunteerism		Academic socialization	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Fixed effects								
Initial status								
Intercept (γ_{00})	3.84***	3.74***	2.68***	2.57***	3.81***	3.29***	3.02***	2.90***
	(.07)	(.14)	(.06)	(.12)	(.07)	(.19)	(.06)	(.11)
Black (γ_{01})	.36***	.33***	.34***	.28***	−.42***	−.29***	.31***	.30***
	(.08)	(.09)	(.07)	(.08)	(.08)	(.09)	(.07)	(.08)
Male (γ_{02})	.42***	.42**	.52***	.50***	−.50***	−.54***	−.09	−.06
	(.07)	(.08)	(.06)	(.07)	(.07)	(.08)	(.06)	(.06)
Parent education (γ_{03})	.0007	−.004	.07***	.07**	.10***	.10***	−.02	−.007
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Income (γ_{04})	−.04*	−.04	−.06***	−.04	.10***	.07**	−.0006	−.008
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Parental efficacy (γ_{05})	.19***	.20***	.01	.02	.09***	.09***	.16***	.16***
	(.03)	(.03)	(.02)	(.02)	(.03)	(.03)	(.02)	(.02)
N disadvantage (γ_{06})	–	.11*	–	.10*	–	−.10	–	.10*
		(.06)		(.05)		(.05)		(.04)
Resources (γ_{07})	–	.04	–	.06	–	.15***	–	.03
		(.03)		(.03)		(.03)		(.03)
Cohesion and trust (γ_{08})	–	.10	–	−.12*	–	.01	–	.09
		(.06)		(.05)		(.06)		(.05)
Slopes								
Intercept (γ_{00})	−.42***	−.36***	−.23***	−.18***	−.36***	−.28***	.09***	.17***
	(.02)	(.05)	(.02)	(.05)	(.04)	(.05)	(.02)	(.04)
Black (γ_{01})	−.009	.01	.01	.03	.15***	.13***	.00007	−.02
	(.03)	(.03)	(.02)	(.03)	(.03)	(.03)	(.02)	(.02)
Male (γ_{02})	−.01	−.006	−.06**	−.05*	.07**	.08*	−.06**	−.06**
	(.03)	(.03)	(.02)	(.02)	(.03)	(.03)	(0.02)	(.02)
Parent education (γ_{03})	−.001	−.001	−.01*	−.01*	−.01*	−.01*	.002	−.001
	(.006)	(.006)	(.007)	(.007)	(.006)	(.007)	(.005)	(.005)
Income (γ_{04})	−.003	.001	−.0003	−.004	−.007	−.001	−.006	−.001
	(.007)	(.008)	(.006)	(.007)	(.007)	(.008)	(.006)	(.006)
Parental efficacy (γ_{05})	−.01	−.02	−.002	−.006	−.003	−.004	−.02*	−.01
	(.009)	(.01)	(.008)	(.008)	(.01)	(.01)	(.007)	(.008)

Table 2 continued

	Home-based involvement		School-based communication		Volunteerism		Academic socialization	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
N disadvantage (γ_{06})	–	−.01	–	−.04**	–	.01	–	−.009
		(.02)		(.02)		(.02)		(.02)
Resources (γ_{07})	–	−.02	–	−.02*	–	−.02	–	−.02*
		(.01)		(.01)		(.01)		(.009)
Cohesion and Trust (γ_{08})	–	.0003	–	.03	–	.02	–	−.003
		(.02)		(.02)		(.02)		(.02)
Random effects								
Level-1 effect (*rij*)	1.33***	1.34***	.85***	.86***	1.16***	1.15***	.71***	.73***
	(.04)	(.05)	(.03)	(.03)	(.04)	(.04)	(.03)	(.04)
Level-2 effects								
Intercept (*u*0*j*)	.78***	.75***	.52***	.53***	.59***	.56***	.68***	.64***
	(.06)	(.06)	(.85)	(.04)	(.05)	(.05)	(.05)	(.06)
Slope (*u*1*j*)	–	–	–	–	–	–	.02**	.01*
							(.006)	(.01)
Covariance (*u*0*j*) (*u*1*j*)	–	–	–	–	–	–	−.03*	−.02
							(.01)	(.02)
Goodness of fit								
−2LL	10,722.2	9631.3	8234.9	7447.8	8838.0	7909.6	9317.4	8364.1
AIC	10,750.2	9671.3	8262.9	7487.8	8866.0	7949.6	9349.4	8408.1
BIC	10,822.3	9772.2	8335.0	7588.7	8938.1	8050.5	9431.8	8519.1

Model 1 includes the demographic variables and their interaction with time. Model 2 contains demographic and neighborhood variables with their interaction with time.Please contact the author for more information for parental involvement strategy models not presented here

N Disadvantage neighborhood disadvantage, *−2LL* −2 log-likelihood, *AIC* Akaike information criterion, *BIC* bayesian information criterion

* $p < 0.05$; ** $p < .01$; *** $p < .001$

participated at all 4 waves were significantly more educated ($M = 14.14$, $SD = 2.48$) and had higher incomes ($M = 5.49$, $SD = 1.99$) than families that participated at only 1 wave ($M_{\text{education}} = 12.86$, $SD = 2.08$; $t_{\text{education}}$ $(99.40) = 5.08$, $p < .001$; $M_{\text{income}} = 4.90$, $SD = 2.24$; t_{income} $(802) = 2.31$, $p < .05$).

Multilevel Modeling Analyses

Unconditional Models

To examine the proportion of variability in parental involvement due to between person differences, *unconditional means models* were estimated. The variance components associated with the intercept of home-based involvement, school-based communication and volunteerism, and academic socialization were significant ($\sigma^2_{\text{home based}} = .64$, $SE = .06$, $p < .001$; $\sigma^2_{\text{communication}} = .54$, $SE = .04$, $p < .001$; $\sigma^2_{\text{volunteerism}} = .68$, $SE = .05$, $p < .001$; $\sigma^2_{\text{academic socialization}} = .68$, $SE = .04$, $p < .001$) and indicated that parents differ from one another in average parental involvement. The ICCs showed that 23 % of the variation in home-based involvement, 32 % of the variation in school-based communication, 32 % of the variation in volunteerism, and 45 % of the variation in academic socialization was due to differences between parents.

Unconditional linear growth models were used to determine if parental involvement in education changed from middle to high school (research question 1). All linear models were significant, suggesting linear growth from middle to high school. On average, in 7th grade, adolescents perceived parents to be engaged in home-based involvement about once a week ($b = 4.28$, $SE = .04$, $p < .001$). Over time, home-based involvement decreased ($b = -.44$, $SE = .01$, $p < 0.001$) from about once a week in 7th grade to 1–3 times a month in 11th grade. For school-based involvement, on average, in 7th grade, parents engaged in school-based communication (e.g., attending parent-teacher conferences) about two times during the academic year ($b = 3.16$, $SE = .03$, $p < .001$), but this participation decreased ($b = -.26$, $SE = .01$, $p < .001$) over time. Further, on average, parents volunteered at school about twice during 7th grade ($b = 3.30$, $SE = .04$, $p < .001$), but reduced their volunteerism ($b = -.22$, $SE = .01$, $p < .01$) across middle and high school. In addition, during 7th grade, parents engaged in academic socialization about 1–3 times a month ($b = 3.18$, $SE = .03$, $p < .001$), and parents increased ($b = .06$, $SE = .01$, $p < .001$) this socialization throughout middle and high school.

Conditional Models

Conditional growth models (See Table 2) were used to determine if parental involvement strategies from middle (i.e., early adolescence) to high (i.e., middle adolescence) school varied by individual and neighborhood characteristics (research question 2). Below, additive findings are presented (See Model 2) and should be interpreted as predictor effects on parental involvement after adjusting for other covariates (i.e., race, gender, SES, neighborhood context, and parental efficacy). Although, most of the estimates presented below are small, they highlight some important and interesting associations of individual and neighborhood characteristics with parental involvement strategies.

Home-Based Involvement On average, African American adolescents reported higher initial levels of home-based involvement than European American adolescents ($b = .33$, $SE = .09$, $p < .001$). However, the rate of change of home-based involvement did not vary by youth's race. Next, at 7th grade, boys reported more home-based involvement than girls ($b = .42$, $SE = .08$, $p < .001$), but they showed similar declines in home-based involvement over time. Parents' SES was not significantly associated with home-based involvement at 7th grade and beyond. Further, on average, adolescents living in more disadvantaged neighborhoods reported higher levels of home-based involvement ($b = .11$, $SE = .06$, $p < .05$) but showed similar declines in home-based involvement as their counterparts living in less disadvantaged neighborhoods. Neighborhood resources and cohesion and trust were not significantly associated with home-based involvement at and beyond 7th grade.

School-Based Communication On average, at 7th grade, African American parents ($b = .28$, $SE = .08$, $p < .001$) engaged in more school-based communication than European American parents but showed a similar decline in school-based communication. At 7th grade, parents of boys engaged in more school-based communication ($b = .50$, $SE = .07$, $p < .001$) and, over time, reduced school-based communication at a slower rate than parents of girls ($b = -.05$, $SE = .02$, $p < .05$). Parents' SES was associated with school-based communication such that, during 7th grade, more educated parents engaged in more school-based communication ($b = .07$, $SE = .02$, $p < .01$) and, over time, reduced their school-based communication at a slower rate than less educated parents ($b = -.01$, $SE = .007$, $p < .05$). Next, at 7th grade, parents living in more disadvantaged neighborhoods engaged in higher levels of school-based communication ($b = .10$, $SE = .05$, $p < .05$) and, over time, they reduced school-based communication at a slower rate than parents living in less disadvantaged neighborhoods ($b = -.04$, $SE = .02$, $p < .01$). Further, at 7th grade, parents in more cohesive neighborhoods engaged in less school-based communication than their counterparts ($b = -.12$, $SE = .05$, $p < .05$); however, parents in both types of neighborhoods showed similar trajectories of

decline in school-based communication. At 7th grade, neighborhood resources were not significantly associated with school-based communication, but the rate at which school-based communication changed varied with neighborhood resources ($b = -.02$, $SE = .01$, $p < .05$) such that parents living in more resourced neighborhoods reduced their school-based communication at a slower rate.

Volunteerism On average, in 7th grade, African American parents engaged in less volunteerism ($b = -.29$, $SE = .09$, $p < .001$) and, over time, reduced volunteerism at a faster rate as compared to European American parents ($b = .13$, $SE = .03$, $p < .001$). During 7th grade, boys' parents engaged in less school volunteerism than girls' parents ($b = -.54$, $SE = .08$, $p < .001$), and over time, parents of boys showed a faster decline in volunteerism than parents of girls ($b = .08$, $SE = .03$, $p < .05$). SES differences in school volunteerism were found during 7th grade. Families with higher incomes ($b = .07$, $SE = .02$, $p < .01$) and education levels ($b = .10$, $SE = .02$, $p < .001$) engaged in more volunteerism than their counterparts. Also, more educated parents reduced volunteerism at a slower rate than their counterparts ($b = -.01$, $SE = .007$, $p < .05$). Further, on average, at 7th grade, parents living in more resourced neighborhoods engaged in more volunteerism than parents living in less resourced neighborhoods ($b = .15$, $SE = .03$, $p < .001$). Yet, parents in both neighborhood types reduced volunteerism similarly over time. Neighborhood disadvantage and cohesion and trust were unrelated to volunteerism.

Academic Socialization On average, African American parents reported higher academic socialization in 7th grade than European American parents ($b = .30$, $SE = .08$, $p < .001$); however, parents' race did not predict the rate of change in academic socialization over time. During 7th grade, parents of boys and girls engaged in similar levels of academic socialization, but over time, boys' parents increased their academic socialization at a slower rate than girls' parents ($b = -.06$, $SE = .02$, $p < .01$). SES was unrelated to academic socialization. In 7th grade, parents living in more disadvantaged neighborhoods engaged in more academic socialization than their counterparts ($b = .10$, $SE = .04$, $p < .05$); however, neighborhood disadvantage was not associated with change in academic socialization over time. At 7th grade, neighborhood resources were not associated with academic socialization; however, over time, parents living in more resourced neighborhoods increased academic socialization at a slower rate than parents living in less resourced neighborhoods ($b = -.02$, $SE = .009$, $p < .05$). Neighborhood cohesion and trust was not associated with academic socialization.

Discussion

Parental involvement in education is an influential tool for improving youth's academic outcomes (Wang and Sheikh-Khalil 2014). Parents may engage in home-based involvement, school-based involvement (communication and volunteerism), and academic socialization. These strategies may be particularly important during adolescence when there are declines in youth's academic performance (Wang and Eccles 2012). At this critical developmental stage, the extent to which parents use these parental involvement strategies may change with adolescents' growing need for autonomy (Hill and Tyson 2009). The current study empirically examined this potential change in parental involvement and showed that parents reduced their home-based involvement and school-based communication and volunteerism but increased academic socialization over time, highlighting that all types of parental involvement in education do not decline post-elementary school. Further, as implored by developmental researchers (see Le et al. 2008), the current study disentangled social position (i.e., race, SES, and gender) and contextual (i.e., neighborhood) influences on parental involvement strategies concurrently and over time.

Trajectories of Parental Involvement Across Middle and High School

As hypothesized, adolescents' reports of parental home-based involvement declined over time as did parents' reports of school-based communication and volunteerism. In contrast, parents reported increases in academic socialization as adolescents moved from middle school to high school. However, this statistically significant increase may be interpreted more practically as stable, moderate levels of academic socialization. These patterns of results for home- and school-based involvement are consistent with prior research (Catsambis and Garland 1997; Wang et al. 2014). The decline in home-based involvement across middle and high school may be due to adolescents' demands for autonomy (Hill and Chao 2009), which may prompt parents to reduce their level of academic help or only assist when asked as to allow adolescents the opportunity to regulate their academic behaviors. Further, parents may limit their presence at school given adolescents' requests for limited parental presence (Collins and Laursen 2004) and fewer opportunities to communicate or form meaningful relationships with school personnel (Green et al. 2007; Hill and Tyson 2009). Unlike school- and home-based involvement, academic socialization remained stable during adolescence. This strategy is developmentally appropriate as it requires direct parent-adolescent communication that emphasizes future goal orientation and the value of education balanced

with the adolescent's opportunity to make independent academic decisions (Hill and Tyson 2009). This strategy may, therefore, enhance adolescents' academic self-efficacy (Wang and Sheikh-Khalil 2014) and confidence in their ability to succeed in school. Taken together, these findings highlight the importance of examining different dimensions of parental involvement in adolescents' education and suggest that not all forms of parental involvement decline beyond elementary school (Izzo et al. 1999). With these changes and differences in parental education strategies, youth may be more likely to succeed academically if the strategies that parents use to be involved are matched to the adolescent's developmental period (i.e., stage [adolescence]—environment [family] fit; Gutman and Eccles 2007).

Effects of Social Position on Parental Involvement

The reasons and ways in which parents engage in educational involvement strategies may be a function of parents' and adolescents' social position as determined by parents' race and SES and adolescents' gender. Consistent with prior studies (Stone 2006; Wang and Sheikh-Khalil 2014), African American parents engaged in more home-based involvement and academic socialization and less school-based involvement (volunteerism) than their European American counterparts. Also, African American parents reduced volunteerism at a faster rate than European American parents. Despite low volunteerism, African American parents engaged in more school-based communication than European American parents. These parental involvement differences may be a result of historically racialized school experiences. Some research shows that teachers may have lower expectations of and tend to hold negative stereotypes about the intellectual ability of African American adolescents (McKown and Weinstein 2008). To challenge these negative stereotypes and protect adolescents from the negative effects of lower teacher expectations, African American parents may choose to engage in more home-based involvement and academic socialization to boost adolescents' confidence and convey the importance of education and school work (Hill et al. 2009). Alternatively, African American parents' own experiences of discrimination with the school system may increase their levels of involvement. Due to possible school mistrust, African American parents may engage in more school-based communication to monitor school personnel's activities and demonstrate their own commitment to education (Hill et al. 2004) to counteract negative stereotypes.

Unlike parental involvement race differences, but consistent with other studies (Wang and Sheikh-Khalil 2014; Hill et al. 2004), parents' SES was only associated with school-based communication and volunteerism. Higher SES parents engaged in more school-based involvement than lower SES parents. Parents with higher levels of education and more economic resources may be more comfortable within the school setting, more efficacious in their interactions with teachers and school authorities, and more effective in advocating the academic needs of their children as compared to lower SES parents (Hill et al. 2004; Wang and Sheikh-Khalil 2014).

Along with race and parents' SES, adolescents' gender was also associated with parental involvement strategies. Consistent with the previous findings (Carter and Wojtkiewicz 2000; Sui-Chu and Willms 1996), boys' parents engaged in more home-based involvement and school-based communication across middle and high school as compared to girls' parents. Over time, parents of boys reduced school-based communication at a slower rate than parents of girls. In contrast, boys' parents engaged in less school-based volunteerism than girls' parents. Across middle and high school, parents of boys reduced volunteerism at a faster rate than parents of girls. Further, over time, parents of boys increased their use of academic socialization at a slower rate than parents of girls. Prior studies suggest that boys are less likely to have higher academic achievement (Pomerantz et al. 2002) and are at a higher risk of dropping out of school (Kena et al. 2014) than girls. Parents of boys may want to provide structure at home and supervise schoolwork to keep adolescents away from deviant behaviors and help them succeed in school. Further, parents of boys may also contact school personnel more often to monitor their adolescents' behaviors, progress in school, and learn how to assist with homework (Lareau 1996). In contrast, girls' parents may not feel the need to contact school personnel to check on their daughters, but they may instead volunteer to establish relationships with other parents and learn about educational opportunities outside the school that may help their daughters continue to excel. Further, given that girls are more likely to perform better in school than boys (Pomerantz et al. 2002), parents of girls tend to have higher academic expectations than parents of boys (Carter and Wojtkiewicz 2000), and may therefore increasingly engage in academic socialization across middle and high school.

Effects of Neighborhood Structure and Social Dynamics on Parental Involvement

Along with understanding the effects of individual differences on parental involvement, we were interested in disentangling these individual differences from contextual predictors of parental involvement. The neighborhood context is an important environment that shapes parenting (Leventhal and Brooks-Gunn 2000) through its structure (disadvantage and institutional resources) and social dynamics (cohesion and trust). Characteristics of

neighborhoods can inhibit or promote positive parenting behaviors as well as adolescents' academic success. Parenting and family stress models suggest that neighborhood disadvantage reduces positive parenting practices. Conversely, social capital models (Coleman 1988; Putnam 1993) propose that the presence of positive structures (i.e., institutions) and constructive neighborhood relationships are beneficial for parenting. In the current study, we found some evidence for each of these perspectives, even after adjusting for demographic characteristics. Neighborhoods mattered for parental involvement strategies; yet, the ways in which neighborhood characteristics impacted these involvement strategies were not consistent.

Neighborhood disadvantage was positively associated with home-based involvement and academic socialization whereas institutional resources were negatively associated with change in academic socialization over time. Parents engaged in more home-based involvement and academic socialization if they lived in more disadvantaged neighborhoods. Further, parents in more resourced neighborhoods engaged in academic socialization at a slower rate than their counterparts. In other words, over time, parents in less resourced neighborhoods more frequently used academic socialization strategies and surpassed their counterparts by 11th grade. Due to stressful living environments, parents in disadvantaged neighborhoods may engage in more restrictive and controlling parenting strategies at home (Leventhal and Brooks-Gunn 2000). For parental involvement, this may mean more monitoring of youth behavior and less opportunities to interact in the neighborhood, which may result in more chances for home-based structured academic activities. Relatedly, even though research suggests that parents in disadvantaged neighborhoods are less likely to communicate with their children (Simons et al. 1997), education-specific discussions among these parents and their children may be likely. Parents in disadvantaged neighborhoods may work intensely to communicate to their children the value and importance of education as a means to get out of the neighborhood or increase their human, social, and financial capital (Higginbotham and Weber 1992). Further, the presence of fewer neighborhood resources may put adolescents at a greater risk of engaging in delinquent behaviors (Gottfredson et al. 2004). Therefore, parents living in neighborhoods with fewer resources may engage in academic socialization at a faster rate over time to prevent their youth from engaging in delinquent behaviors and to set them on a positive trajectory. However, neighborhood disadvantage did not exert influence on any parental involvement strategy over time, suggesting that neighborhood disadvantage may be more important for parenting during early adolescence.

School-based involvement, measured independently as both school-based communication and volunteerism, was differentially impacted by the neighborhood context. Neighborhood institutional resources, like the YMCA and after-school programs, were positively associated with volunteerism whereas cohesion and trust was negatively associated with school-based communication. These neighborhood resources may provide more than positive interactions and academic assistance to adolescents (Quane and Rankin 2006); they may also increase positive parenting behaviors (Pinderhughes et al. 2001), provide a supportive platform for parents to gain information about schools and academics (Leventhal and Brooks-Gunn 2000), and encourage parents to engage, interact, and volunteer. Further, if parents are involved in these neighborhood institutions, they may be more comfortable and likely to engage in other youth-focused institutions such as schools. The presence of neighborhood institutional structures enhanced parents' volunteerism, whereas, positive perceptions of neighborhood cohesion and trust reduced school-based communication. If parents are accustomed to positive, supportive relationships in their neighborhoods, they may be less likely to interact with school personnel if the quality of the communication is negative, hostile, or problem-focused. Given school bureaucracies, preventative, positive communication between home and school is often difficult to achieve during middle and high school (Wang et al. 2014). Further, in supportive, cohesive neighborhoods, parents may rely on their social networks, rather than school personnel, to get tangible, informational support (Putnam 1993) to assist with school-related problems and choices. This set of findings should be interpreted with caution until replicated given the inconsistency with Furstenberg et al. (1999) findings that cohesive neighborhoods were associated with more school-based involvement (i.e., volunteerism and communication). Perhaps because Furstenberg et al. (1999) coupled these theoretically distinct forms of school-based involvement, the nuanced relationship between neighborhood social dynamics and school-based involvement is obscured. The present study sought to explore these complexities and demonstrated the importance of neighborhood socioeconomic disadvantage, institutional resources, and cohesion as both inhibiting and promoting factors (Garcia Coll et al. 1996) for specific education-focused parenting behaviors.

Strengths, Limitations, and Future Directions

Taken together, this study showed the utility of examining parental involvement as a multidimensional construct, because each dimension of parental involvement changed differently during adolescence from middle to high school. Further, this study explored two different forms of school-based involvement and demonstrated that, even though school-based communication and volunteerism follow similar trajectories over time, the predictors of that developmental change vary. Next, this study provided evidence

for the Integrative model (Garcia Coll et al. 1996), showing that parenting processes (i.e., parental involvement in education), which ultimately inform adolescents' developmental competencies (e.g., academic achievement), vary with one's social position (race, SES, and gender). In addition to exploring individual differences, this study sought to disentangle race, SES, and contextual differences in parenting, an important undertaking of developmental scientists (Le et al. 2008). Previous studies have examined the effects of neighborhood context on parenting styles (i.e., authoritative vs. authoritarian parenting) (Quane and Rankin 2006); however, little is known about the association between neighborhood context and parental involvement in adolescents' education. This study is one of the first to examine the association of both neighborhood structural and social characteristics, as either risk (i.e., inhibiting environment) or asset (i.e., promoting environment), with a developmentally appropriate model of parental involvement in post-elementary school education. Together, this study contributes to the growing body of literature on neighborhood effects on families. Just as adolescents are undergoing multiple changes during this developmental period, parents are also negotiating shifts in their education-specific parenting behaviors to become more of a match to their adolescents' needs. These circumstances and research findings may offer insight to educators and parenting program specialists as they seek to enhance parents' academic engagement across schooling.

Whereas this study provides insight into understanding educational parenting behaviors in context, several limitations should be considered when interpreting the findings of this study. First, it is necessary to acknowledge potential neighborhood selection bias (Sampson et al. 2002) due to individual characteristics. To account for this bias, we used a conventional approach (Sampson and Sharkey 2008) and included multiple SES covariates (i.e., parent education and income) that are generally associated with individuals' opportunities to live in certain neighborhoods. However, the current findings should be interpreted with caution. Although selection bias cannot be eliminated as an explanation for the present study's findings, the results are aligned with the extant literature that suggests the importance of the neighborhood context for families and parenting behaviors, in particular.

Next, with secondary data analysis, one is limited to the measures originally included and the time spacing between those measurements. In the present study, in order to tap each dimension of parental involvement across multiple waves, we were limited to abbreviated, previously established scales and sometimes restrained to two-item scales. Although it is not ideal, scholars suggest that consistently measured constructs are necessary for longitudinal investigations (Hox 2010). Also, parental involvement data was only available at three time points (7th, 8th and 11th grade) precluding investigation of more complex curvilinear models. In addition, the time points included in this study restricted our ability to capture the important developmental and ecological transition to high school (Benner and Graham 2009). To make the transition easier for adolescents, it is possible that parents may engage in involvement strategies that change in specific ways during and after the transition (Paulson and Sputa 1996). Future longitudinal studies should explore parental involvement at multiple developmental (e.g., late childhood, early adolescence, and mid-adolescence) and ecological (i.e., elementary, middle/junior high, and high school) transitions to gain a better understanding of these parenting practices through exploration of curvilinear change and compensatory strategies.

Last, although the study participants were representative of the population from which the sample was drawn, the current study only focused on two racial groups (European Americans and African Americans), which limits the generalizability of our findings to other ethnic groups, especially immigrants. Due to cultural differences (e.g., language barriers) and values related to parental role construction (Hoover-Dempsey et al. 2005) (e.g., enhanced respect for school personnel; viewing adolescent's academic development as a school function), immigrant parents may adopt different parental involvement strategies than European American and African American parents (Peña 2000). Therefore, future studies should examine developmental changes in parental involvement among immigrant families, with special attention to specific cultural behaviors and values.

Conclusion

Even after considering these caveats, the present study extends our understanding of parental involvement in education during adolescence to provide a more nuanced and holistic portrait of this education-focused parenting strategy. This study explored longitudinal changes in developmentally appropriate parenting practices with a racially and socioeconomically diverse sample to understand how both individual and neighborhood contextual factors contributed to parental involvement in education from middle to high school. Findings support a multidimensional approach to parental involvement in education that includes home-based involvement; distinguishes between specific forms of school-based involvement (i.e., school-based communication and volunteerism); and incorporates academic socialization. As adolescence is a critical developmental period for academic achievement and future success, it is crucial that scholars continue to

take an in depth look at *specific* parental involvement strategies that are aligned with adolescents' developmental needs. Further, this study continues to "excavate culture" with its attention to race, SES, and neighborhood factors to show differential associations between cultural and contextual variables and patterns of parental involvement in education during adolescence. Given the changing demographic landscape of the United States and its racial and socioeconomic stratification, exploring these variations and integrating this information to improve our current practices (e.g., family-school partnerships) are necessary to help all youth succeed so that no one is left behind. Understanding parental involvement in education at this critical developmental period, when academic achievement and performance declines, among diverse families in different environments may help to elucidate the ways in which families and schools, independently and collaboratively, can foster promising academic trajectories for adolescents and greater opportunities for youth as they enter young adulthood.

Acknowledgments The authors' work for this manuscript was not supported by any external funding. The MADICS study was supported by multiple sources. For more information on these data, please see Jacquelynne S. Eccles 1997, "MADICS Study of Adolescent Development in Multiple Contexts 1991–1998", http://hdl.handle.net/1902.1/01066 UNF:5:uuV+GIHq+xtra75iHCPSPw==Murray Research Archive [Distributor] V2 [Version].

Authors' Contributions SB conceived of the study, participated in its design, conducted the statistical analysis, interpreted the findings, and drafted the manuscript. DPW conceived of the study, participated in its design, assisted with the statistical analysis and interpretation of the findings, and helped to draft and revise the manuscript. Both authors read and approved the final manuscript.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Appendix

See Tables 3 and 4.

Table 3 Means and standard deviations of parental involvement strategies by respondent's race and youth's gender

	Grade	European American M (SD)	African American M (SD)	Female M (SD)	Male M (SD)
Home-based involvement	7th	3.94 (1.53)	4.40 (1.53)	4.05 (1.57)	4.44 (1.50)
	8th	3.56 (1.43)	4.10 (1.52)	3.65 (1.52)	4.17 (1.46)
	11th	2.37 (1.43)	2.74 (1.65)	2.43 (1.50)	2.80 (1.65)
School-based communication	7th	1.96 (1.54)	2.40 (1.53)	2.02 (1.49)	2.44 (1.57)
	8th	1.82 (1.46)	2.47 (1.62)	2.04 (1.53)	2.38 (1.63)
	11th	1.03 (1.14)	1.62 (1.36)	1.29 (1.26)	1.56 (1.36)
Volunteerism	7th	2.33 (1.93)	1.77 (1.81)	2.26 (1.94)	1.71 (1.77)
	8th	2.60 (2.00)	2.22 (1.95)	2.70 (1.98)	2.04 (1.93)
	11th	2.02 (2.24)	1.70 (1.96)	1.93 (2.15)	1.68 (2.12)
Academic socialization	7th	2.92 (1.08)	3.23 (1.26)	3.14 (1.19)	3.11 (1.23)
	8th	3.06 (1.09)	3.50 (1.29)	3.39 (1.24)	3.31 (1.24)
	11th	3.18 (1.09)	3.59 (1.38)	3.57 (1.33)	3.32 (1.27)

Table 4 Neighborhood structure and social dynamics of African American and European American parents at 7th grade

Neighborhood characteristic	African American M (SD)	European American M (SD)	t (df)	*p* value
Neighborhood disadvantage	.27 (.94)	−.53 (.27)	−20.15 (1235.30)	.00
Neighborhood resources	2.72 (1.42)	3.49 (.98)	11.80 (1271.48)	.00
Cohesion and trust	3.31 (.71)	3.49 (.73)	4.34 (1361)	.00

References

Benner, A. D., & Graham, S. (2009). The transition to high school as a developmental process among multiethnic urban youth. *Child Development, 80*(2), 356–376. doi:10.1111/j.14678624.2009.01265.x.

Byrnes, H. F., & Miller, B. A. (2012). The relationship between neighborhood characteristics and effective parenting behaviors: The role of social support. *Journal of Family Issues, 33*(12), 1658–1687. doi:10.1177/0192513X12437693.

Carter, R. S., & Wojtkiewicz, R. A. (2000). Parental involvement with adolescents' education: Do daughters or sons get more help? *Adolescence, 35*(137), 29–44.

Catsambis, S., & Garland, J. E. (1997). *Parental involvement in students' education during middle and high school* (Report No. 18). Baltimore, MD: Johns Hopkins University, Center for Research on the Education of Students Placed at Risk.

Chen, W., & Gregory, A. (2010). Parental involvement as a protective factor during the transition to high school. *The Journal of Educational Research, 103*(1), 53–62. doi:10.1080/00220670903231250.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94*, S95–S120.

Collins, W. A., & Laursen, B. (2004). Parent-adolescent relationships and influences. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 331–362). Hoboken, NJ: Wiley.

Comer, J. P. (1995). *School power: Implications of and intervention project*. New York: Free Press.

Crosnoe, R. (2001). Academic orientation and parental involvement in education during high school. *Sociology of Education, 74*(3), 210–230.

Cross, W. E. (2003). Tracing the historical origins of youth delinquency & violence: Myths & realities about black culture. *The Journal of Social Issues, 59*(1), 67. doi:10.1111/1540-6560.t01-1-00005.

Eccles, J. S. (1997). *MADICS study of adolescent development in multiple contexts, 1991–1998*. Retrieved from http://hdl.handle.net/1902.1/01066. UNF:5:uuV+GIHq+xtra75iHCPSPw==Murray Research Archive [Distributor] V2 [Version].

Eccles, J. S., & Harold, R. D. (1996). Family involvement in children's and adolescents' schooling. In A. Booth & J. F. Dunn (Eds.), *Family-school links: How do they affect educational outcomes?* (pp. 3–34). Mahwah, NJ: Erlbaum.

Elliott, D. S., Menard, S., Rankin, B., Elliott, A., Huizinga, D., & Wilson, W. J. (2006). *Good kids from bad neighborhoods: Successful development in social context*. Cambridge, UK: Cambridge University Press.

Epstein, J. L. (1992). School and family partnerships. In M. Aiken (Ed.), *Encyclopedia of educational research* (6th ed., pp. 1139–1151). New York: Macmillan.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review, 13*(1), 1–22. doi:10.1023/A:1009048817385.

Furstenberg, F. F., Cook, T. D., Eccles, J., Elder, G. H., & Sameroff, A. (1999). *Managing to make it*. Chicago: The University of Chicago Press.

Garcia Coll, C., Lamberty, G., Jenkins, R., McAdoo, H. P., Crnic, K., Wasik, B. H., & García, H. V. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development, 67*(5), 1891–1914. doi:10.1111/j.1467-8624.1996.tb01834.x.

Gottfredson, D. C., Gerstenblith, S. A., Soulé, D. A., Womer, S. C., & Lu, S. (2004). Do after school programs reduce delinquency? *Prevention Science, 5*(4), 253–266. doi:10.1023/B:PREV.0000045359.41696.02.

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology, 99*, 532–544. doi:10.1037/0022-0663.99.5.532.

Gutman, L. M., & Eccles, J. S. (2007). Stage-environment fit during adolescence: Trajectories of family relations and adolescent outcomes. *Developmental Psychology, 43*(2), 522–537. doi:10.1037/0012-1649.43.2.522.

Gutman, L. M., & Midgley, C. (2000). The role of protective factors in supporting the academic achievement of poor African American students during the middle school transition. *Journal of Youth and Adolescence, 29*(2), 223–249. doi:10.1023/A:1005108700243.

Higginbotham, E., & Weber, L. (1992). Moving up with kin and community: Upward social mobility for black and white women. *Gender and Society, 6*(3), 416–440. doi:10.1177/089124392006003005.

Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development, 75*(5), 1491–1509. doi:10.1111/j.1467-8624.2004.00753.x.

Hill, N. E., & Chao, R. K. (2009). *Families, schools, and the adolescent: Connecting research, policy, and practice*. New York: Teachers College Press.

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45*(3), 740–763. doi:10.1037/a0015362.

Hill, N. E., Tyson, D. F., & Bromell, L. (2009). Parental Involvement in middle school: Developmentally appropriate strategies across SES and ethnicity. In N. E. Hill & R. K. Chao (Eds.), *Families, schools, and the adolescent: Connecting research, policy, and practice* (pp. 53–72). New York: Teachers College Press.

Holcomb-McCoy, C. (2007). Transitioning to high school: Issues and challenges for African American students. *Professional School Counseling, 10*(3), 253–260. doi:10.5330/prsc.10.3.t786743452x51lk2.

Hoover-Dempsey, K. V., Walker, J. M. T., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, A. S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *Elementary School Journal, 106*(2), 105–130. doi:10.1086/499194.

Hox, J. J. (2010). *Multilevel analysis: Techniques and applications* (2nd ed.). New York, NY: Routledge.

Izzo, C. V., Weissberg, R. P., Kasprow, W. J., & Fendrich, M. (1999). A longitudinal assessment of teacher perceptions of parent involvement in children's education and school performance. *American Journal of Community Psychology, 27*(6), 817–839. doi:10.1023/A:1022262625984.

Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., & Kristapovich, P. (2014). *The condition of education 2014 (NCES 2014-083)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Kingston, B., Huizinga, D., & Elliott, D. S. (2009). A test of social disorganization theory in high-risk urban neighborhoods. *Youth and Society, 41*, 53–79.

Lareau, A. (1996). Assessing parent involvement in schooling: A critical analysis. In A. Booth & J. F. Dunn (Eds.), *Family-school links: How do they affect educational outcomes?* (pp. 57–64). Mahwah, NJ: Erlbaum.

Le, H., Ceballo, R., Chao, R., Hill, N. E., Murry, V. M., & Pinderhughes, E. E. (2008). Excavating culture: Disentangling ethnic differences from contextual influences in parenting. *Applied Developmental Science, 12*(4), 163–175. doi:10.1080/10888690802387880.

Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin, 126*(2), 309–337. doi:10.1037/0033-2909.126.2.309

McGill, R. K., Hughes, D., Alicea, S., & Way, N. (2012). Academic adjustment across middle school: The role of public regard and parenting. *Developmental Psychology, 48*(4), 1003–1018. doi:10.1037/a0026006.

McKown, C., & Weinstein, R. S. (2008). Teacher expectations, classroom context, and the achievement gap. *Journal of School Psychology, 46*(3), 235–261. doi:10.1016/j.jsp.2007.05.001.

Paulson, S. E., & Sputa, C. L. (1996). Patterns of parenting during adolescence: Perceptions of adolescents and parents. *Adolescence, 31*(122), 369–381.

Peña, D. (2000). Parent involvement: Influencing factors and implications. *The Journal of Educational Research, 94*(1), 42–54. doi:10.1080/00220670009598741.

Pinderhughes, E. E., Nix, R., Foster, E. M., & Jones, D. (2001). Parenting in context: Impact of neighborhood poverty, residential stability, public services, social networks, and danger on parental behaviors. *Journal of Marriage and Family, 63*(4), 941–953. doi:10.1111/j.1741-3737.2001.00941.x.

Pomerantz, E. M., Altermatt, E. R., & Saxon, J. L. (2002). Making the grade but feeling distressed: Gender differences in academic performance and internal distress. *Journal of Educational Psychology, 94*(2), 396–404. doi:10.1037/0022-0663.94.2.396.

Putnam, R. D. (1993). The prosperous community: Social capital and public life. *American Prospect, 13*, 35–42.

Quane, J. M., & Rankin, B. H. (2006). Does it pay to participate? Neighborhood-based organizations and the social development of urban adolescents. *Children and Youth Services Review, 28*(10), 1229–1250. doi:10.1016/j.childyouth.2006.01.004.

Quené, H., & van den Bergh, H. (2004). On multi-level modeling of data from repeated measures designs: A tutorial. *Speech Communication, 43*(1), 103–121. doi:10.1016/j.specom.2004.02.004.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks: Sage Publications.

Reynolds, A. J. (1992). Comparing measures of parental involvement and their effects on academic achievement. *Early Childhood Research Quarterly, 7*(3), 441–462. doi:10.1016/0885-2006(92)90031-S.

Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social-disorganization theory. *American Journal of Sociology, 94*(4), 774–802. doi:10.1086/229068.

Sampson, R. J., Morenoff, J. D., & Gannon-Rowley, T. (2002). Assessing "neighborhood effects": Social processes and new directions in research. *Annual Review of Sociology, 28*, 443–478. doi:10.1146/annurev.soc.28.110601.141114.

Sampson, R. J., & Sharkey, P. (2008). Neighborhood selection and the social reproduction of concentrated racial inequality. *Demography, 45*(1), 1–29. doi:10.1353/dem.2008.0012.

Shaw, C. R., & McKay, H. D. (1942). *Juvenile delinquency and urban areas: A study of rates of delinquents in relation to differential characteristics of local communities in American cities*. Chicago: University of Chicago Press.

Simmons, R. G., & Blyth, D. A. (1987). *Moving into adolescence: The impact of pubertal change and school context*. Hawthorn, NY: Aldine de Gruyler.

Simons, R., Johnson, C., Conger, R., & Lorenz, F. (1997). Linking community context to quality of parenting: A study of rural families. *Rural Sociology, 62*, 207–230. doi:10.1111/j.1549-0831.1997.tb00651.x.

Simons, R. L., Simons, L. G., Burt, C. H., & Brody, G. H. (2005). Collective efficacy, authoritative parenting, and delinquency: A longitudinal test of a model integrating community- and family-level processes. *Criminology*, *43*(4), 989–1029. doi:10.1111/j.1745-9125.2005.00031.x.

Spera, C. (2005). A review of the relationship among parenting practices, parenting styles, and adolescent school achievement. *Educational Psychology Review, 17*(2), 125–146. doi:10.1007/s10648-005-3950-1.

Stone, S. (2006). Correlates of change in student reported parent involvement in schooling: A new look at the national education longitudinal study of 1988. *American Journal of Orthopsychiatry, 76*(4), 518. doi:10.1037/0002-9432.76.4.518.

Sui-Chu, E., & Willms, J. (1996). Effects of parental involvement on eighth-grade achievement. *The Sociological Quarterly, 69*(2), 126–141. doi:10.2307/2112802.

U.S. Census Bureau. (1990a). Table 44—Average household income in 1989 dollars. *Social Explorer DataSet.* Retrieved from http://www.socialexplorer.com/tables/C1990/R10978697.

U.S. Census Bureau. (1990b). Table 45—Average household income by race in 1989 dollars. *Social Explorer DataSet.* Retrieved from http://www.socialexplorer.com/tables/C1990/R10978698.

Wang, M., & Eccles, J. S. (2012). Adolescent behavioral, emotional, and cognitive engagement trajectories in school and their differential relations to educational success. *Journal of Research on Adolescence, 22*(1), 31–39. doi:10.1111/j.1532-7795.2011.00753.x.

Wang, M., Hill, N. E., & Hofkens, T. (2014). Parental involvement and African American and European american adolescents' academic, behavioral, and emotional development in secondary school. *Child Development, 85*(6), 2151–2168. doi:10.1111/cdev.12284.

Wang, M., & Sheikh-Khalil, S. (2014). Does parental involvement matter for student achievement and mental health in high school? *Child Development, 85*(2), 610–625. doi:10.1111/cdev.12153.

West, B. T., Welch, K. B., & Galecki, A. T. (2007). *Linear mixed models: A practical guide using statistical software*. Boca Raton, FL: Taylor & Francis Group.

Witherspoon, D., & Ennett, S. (2011). Stability and change in rural youths' educational outcomes through the middle and high school years. *Journal of Youth and Adolescence, 40*(9), 1077–1090. doi:10.1007/s10964-010-9614-6.

Witherspoon, D. P., & Hughes, D. L. (2014). Early adolescent perceptions of neighborhood: Strengths, structural disadvantage, and relations to outcomes. *The Journal of Early Adolescence, 34*(7), 866–895. doi:10.1177/0272431613510404.

Wood, D., Kurtz-Costes, B., Rowley, S. J., & Okeke-Adeyanju, N. (2010). Mothers' academic gender stereotypes and education-related beliefs about sons and daughters in African American families. *Journal of Educational Psychology, 102*(2), 521–530. doi:10.1037/a0018481.

Sakshi Bhargava, M.S. is a doctoral student in the Department of Psychology, Developmental Area at the Pennsylvania State University. She received her master's degree in Developmental Psychology from the Pennsylvania State University and her bachelor's degree from Stony Brook University. Her research interests include understanding parental involvement in youth's education in multiple contexts. Specifically, she is interested in understanding how individual (e.g., ethnicity), cultural (e.g., acculturation), and

contextual factors (e.g., neighborhood) may influence parents' involvement in youth's education.

Dawn Witherspoon, Ph.D. is an Assistant Professor in the Department of Psychology, Developmental Area at the Pennsylvania State University. She received her doctorate in Community Psychology (Developmental Concentration, Quantitative Minor) from New York University. Dr. Witherspoon's research focuses on ethnically diverse families' and adolescents' experiences in varying neighborhood contexts, with a particular focus on youth's academic, behavioral, and psychosocial development, and explores how neighborhood context may impact cultural processes.

Copyright of Journal of Youth & Adolescence is the property of Springer Science & Business Media B.V. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

International Education Studies; Vol. 11, No. 4; 2018
ISSN 1913-9020 E-ISSN 1913-9039
Published by Canadian Center of Science and Education

The Influence of Parents' Involvement on Children with Special Needs' Motivation and Learning Achievement

Siti Bariroh[1]

[1] Educational Administration Department, Faculty of Teacher Training and Education, University of Gresik, Indonesia

Correspondence: Siti Bariroh, Educational Administration Department, Faculty of Teacher Training and Education, University of Gresik, Jl. Arief Rahman Hakim 2B, Gresik, Indonesia. Tel: 62-813-3093-4849. E-mail: sitibariroh60@gmail.com

Received: December 6, 2017 Accepted: January 10, 2018 Online Published: March 28, 2018

doi:10.5539/ies.v11n4p96 URL: https://doi.org/10.5539/ies.v11n4p96

Abstract

Some of the abnormal children face burden, distraction, interruption, tardiness, or risk factors so that they cannot get an optimum growth without special treatment or intervention. This study was aimed at discovering the influence of parents' involvement to the learning motivation and achievement of children with different abilities. This research is a regressive model. The population was children with different abilities in SMP Negeri 4 Gresik, East Java Indonesia. The data collected through questionnaire and documentation, were then analyzed using linear regression test. The *t*-test results showed $t_{calculate}$ value for variables of parents' involvement (X) was 3,813. The results showed that $t_{calculate} > t_{table}$ or 3,813> 2,093 or *t* value is higher than *t* table. It means that parents' involvement sigifcantly influences children's motivation. The result of the *t*-test also indicated that $t_{calculate}$ value for parents' involvement (X) was 3,601. If compared to $t_{table,}$ then, $t_{calculate} > t_{table}$ or 3,601> 2,093. It means that there is an influence of parents' involvement on children's achievement as well. Based on the finding, it can be recommended that parents should be more intensive in assisting, accompanying, and guiding their children, especially especially to the children who have special needs so that their motivation and academic achievement can be enhanced. It is also recommended that teachers and school should give more fruitful collaboration between schools to facilitate their needs and potentials.

Keywords: parents' involvement, motivation, learning achievement, children with special needs

1. Introduction

Human development happens continuously or simultaneously. Success in reaching the stage of development will determine the success in the following stage. If the process of development is hampered and disrupted it would be difficult to achieve optimal development and growth. This suggests conceptually that children with special needs have broader meanings and spectrums than the concept of exceptional, disabled, or disadvantaged children. Children with different abilities not only include children who have special needs that are permanent due to certain disabilities, but also children with temporary different abilities. Children with temporary different abilities are called risk factors such as individuals who have problems in their development that may be affected by their future learning abilities, or having vulnerabilities, weakness or high risks on the appearance of obstacles or disorders in learning or in the following development.

Children with "special needs" or better known as children with different abilities refer to the children who experienced obstacles in the development of his behavior. According to Handoyo (2001), "behavior is all actions of an individual, smaller, or greater, that can be seen, heard, and perceived by the sense of taste in the skin, and (not in the heart) by others or selves". Therefore, behavior includes speech or voice, movements or actions either in the form of irregular or irregular movements, intended or unintended, intentionally or unintentionally, and useful or useless. The behavioral development of children with special needs will cause barriers in a certain aspect. Because the two types of behavior are required in social communication. Then, learning process of these children will be obstructed if they are not cared and treated properly.

Based on the above background, the research questions are formulated as follows:

1) Does the parents' involvement influence motivation of the children who have special needs in SMP Negeri 4

Gresik?

2) Does the parents' involvement influence learning achievement of the children with special needs in SMP Negeri 4 Gresik?

3) Does the parents' involvement influence motivation and achievement of the children with secial needs in SMP Negeri 4 Gresik?

The objectives of this study are aimed to address the following points, namey:

1) Understand the influence of parents' involvement on achievement motivation of the children with special needs in SMP Negeri 4 Gresik.

2) Undersatnd the influence of parents' involvement on the learning achievement of the children with special needs in SMP Negeri 4 Gresik.

3) Understand the influence of parents' involvement on the achievement motivation and learning achievement of the children with special needs in SMP Negeri 4 Gresik.

2. Literature Review

2.1 Parents' Involvement

The emergence of various disorders or developmental barriers in individuals with special needs is a phenomenon that needs to be addressed further so that they can still live a good life and optimize any ability they possess, no matter how small it is. Several studies indicate that the topic of children with special needs is rarely discussed as it is vague to discuss. Hadjiyiannakou, Ioannou, and Tzoigkouros (2007) propose several reasons for that. First, when parents have disabled children, the identities of the family also changed, the feeling of insecurity is spread among their lives. Second, parents have a negative energy and image and they are very depressed because of the existence of the disabled child in their family. Third, parents have no choice, and they feel insecure, the road of their life is too difficult. Fourth, parents are correlated with failure, they feel embarrassed and insecure and sometimes they seemed that they have a grief.

This is important because regardless of its limitations, every human being has the same right to grow, develop, accept, and perform their role in society. According to Mintari and Widyarini (2015), they say that one of the idea to be owned by parents who have the disabled children is that by seeking social support for emotional reasons. They said that this idea can be used to avoid having negative thinking for parents with disabled children. Furthermore, Faradina (2016) explains that positive parents' acceptance toward disabled children will lead to the positive development.

The efforts to optimize the development of adolescents with special needs is none other than to provide education and training needed, both related to the ability of daily life, academic materials, and work skills. Related to this matter, the process of education program for children with special needs emphasizes on the efforts to guide the students to be able to live their life independently, by optimizing the ability of the senses or parts of certain parts of themselves that still can be operated. Next, to achieve the maximum results, every educational process requires the cooperation between the school and the parents. According to Buchori (2006), education shall fail without parents' participation. One of the main conditions parents must fulfill in seeking good cooperation with the school so that the education process is optimal is to give full attention to the child's growth as a person, and not just the attention to what the child has achieved. There are some supporting ideas about the parents-involvement in the school deals the students with disabilities. (Rodriguez, Blatz, & Elbaum, 2014)explain that the school staff, including teachers, not only communicated with the parents about students' progress but also frequently mentioned that the teachers were accessible. There was a room to communicate, it is called Individualized Education Program (IEP) meeting, the result explain that the parents' involvements bring the child's progress and allow the parents a variety of communication methods. In a similar sense, Clough and Nutbrown (2004) say that the parents should be included in the school because information about processes, system and intervention in the school are needed by parents; the responsibility for the care is important, and fundamentally, more time and the most intimate knowledge are parents' responsibility (Whitning, 2012).

MacKichan and Harkins (2013) explain that when we are discussing about the inclusive education or students with the special need that they access the curriculum through adapted or individualistic plan. Moreover, parental involvement in developing the individualistic plan or Individual Program Planning (IIP) in Canada is pertinent to success of both the children's education and the plan as well. Meanwhile, Wang (2009) writes that it must be carefully considered to place special need students in mainstream school by concerning all the participants such as teachers, parents, school administrators, students, as well as the society at large, without all fully participating in

the process, a less than optimal outcome for the special needs student may occur resulting in lower academic achievement.

In line with MacKichan and Harkins (2013), Murray, Handyside, Straka, and Arton-Titus (2013), Rodriguez et al. (2014), Whitning (2012) also explain that parents have to be respect, understand, and value their children in the educational decision-making process for their child with disabilities to optimize their potentials. Both parents and professional, teachers, could benefit from increased interactions and education on how to create successful partnership. Then, parents especially have to have confidence in the capacity of the school to understand and effectively educate their children with special needs (Elkin, Van Kraayonoord , & Jobling, 2003). Finally, knowledge and skills acquired by the children in school will endure and well controlled if they can also train them at home or outside the school environment with the help and guidance of their parents. Based on the explanation, it can be understood that the participation of parents in children's education programs with special needs is an important thing that should always be pursued. However, until now, there is no data showing that all parents of children with special needs in Indonesia have understood this, and try to fulfill it. In fact, not all parents of children with special needs recognize the importance of their involvement in the education of their children.

2.2 Achievement Motivation

Motivation is needed to trigger working activities, working spirit, inspiration and encouragement to employees to work better. For employees, motivation is a very important element for the achievement of organizational goals. It is a psychological process that reflects the interaction between attitudes, needs, perception and decisions that occur in a person. Psychologically, motivation arises as a factor within the person him/herself, which is called intrinsic factors and factors from the outside as called extrinsic factors. (Sadiman, 2003)stated that motivation is a series of attempts to provide certain conditions, so that a person wants and are have the will to do something and if s/he does not like it, it will try to nullify or circumvent those feelings of dislike. Motivation is a basic impulse that drives a person to behave. The impetus is in the person who moves to do something that suits his inner drive. Therefore the actions of a person based on a certain motivation have a theme according to the underlying motivation (Hamzah, 2007). Motivation is an internal and external impulse in a person to conduct behavioral changes that has the following indicators, they are (a) the desire and will to engage in the activity, (b) the drive and the need to perform the activity, (c) expectation and aspiration, (d) respect and appreciation on selves, (e) good environment, and (f) interesting activities.

According to Hamzah (2007), motivation emerges because of two factors. They are intrinsic and extrinsic factors. The emergence of intrinsic factor does not require external stimulus because it already exists within the individual itself, and is appropriate or linear with his needs. The extrinsic factors arise because of the stimulation from outside the individual. Gibson et al. in Hamzah (2007) provide his views about motivation as a concept that can be used when encouraging individuals to start and behave directly in accordance with what the leader wants. Thus, it appears that the definition of motivation concerns with the dynamic process and produce goal-oriented behavior. From idea of the parents involvement of the school in which brings the concepts of tight correlation, furthermore, one of those correlations is about academic expectation. Ritter, Michel, and Irby (1999) said that parents and students (red: disabilities, inclusion) believe that academic expectation were raised, learning more, performing to higher standards and reaping the rewards of their improved education but motivation as an inner process or psychological process that occurs in a person is strongly influenced by various factors.

In addition, there are external factors such as complete and adequate facilities and infrastructure. Motivation can also be influenced by internal factors attached to each person (innate) such as a person's education level, past experience, wishes or expectations in the future. There are some elements of the leader that can affect work motivation and wisdom that has been determined by the work requirements that need to be met by subordinates and the availability of facilities and infrastructure needed in carrying out their duties to complete the work. It can be concluded that the behavior that appears in a person or subordinates in the framework of motivation as a management concept is driven by the existence of the needs in a person. One's attitude is always oriented towards the purpose of fulfilling the desired needs.

2.3 Learning Achievement

Learning achievement is the result achieved by a person after making changes in learning, both at school and outside school. According to Webster's New International Dictionary, Learning Achievement is a standard test for measuring one's skills or knowledge within one or more of the lines of work or learning. Hamalik (2001) argues that learning achievement is a change in attitude and behavior after receiving a lesson or after learning something. Based on the description, it can be concluded that the learning achievement is a measure of the success of student learning activities in mastering a number of subjects during the certain period, reflected through the grades in the

report.

2.3.1 Factors Influencing the Learning Achievement

Learning achievement is a measure of success obtained by students during the learning process. Success is determined by various interrelated factors. According to Slamet (1995) factors that affect student achievement include internal and external factors. Internal factor is a factor appears in an individual that undergoes a learning process such as physical factor (health and disabilities), psychological factor (intelligence, attention, interest, talent, motive, maturity, and readiness and fatigue. On the other hand, external factors the factor from the outside of the individual like family factor discuss how the parents educate, family interrelationship, home atmosphere, economic condition, family understanding, and cultural background as well, school factor like teacher's training method, curriculum, teacher-student relationship, school discipline, educational tools, school time, learning standard above rate, building condition, learning method and home assignment, and society factor such as student activities in the society, mass media, friends, and society's life pattern. Understanding the external factors is important for parents to foster students' learning achievement. By knowing the factors that influence the learning achievement of children, parents can find out the problems faced by children in learning and the influencing factors, so that parents can be actively involved in finding the source of the problem and provide the support needed by the child, in order for children to gain the best achievement in learning.

2.4 Definition of Child with Special Needs

The concept of Children with Special Needs (CSN) has a broader meaning than child with different abilities' meaning. CSN is a child who requires a specific service in education, different from children in general. Children are said to have special needs if there is something less or even more, in him. Alimin (2004) defined children with special needs can be understood as the children who need more attentions such as in terms of education, then the education itself must be matched with the obstacles in learning and with specific need of the individual children itself.

Furthermore, the U.S. Department of Education has categorized a wide range of special education need, in part, for the purpose of determining the scope of classroom instruction and funding requirements necessary to ensure academic achievement for all children with disabilities (Ferrel, 2012). Generally, the range of children with special needs include two categories, i.e. children with permanent special needs, namely due to certain abnormalities, and children with temporary special needs, i.e. those who experience barriers in development and learning due to environmental situations and conditions, for example children who have difficulty in adjusting themself in the society because they witnessed riots and natural disasters, or inability in reading because of teachers' mistakes, or because of cultural isolation, poverty, and so on. A temporary CSN can turn into permanent if they do not get the right intervention and in line with the learning barrier. In general, there are three factors that become barriers to learn, they are (1) environmental factors, (2) internal factors/self, (3) a combination between the two. Thus, CSN can be grouped based on the following disturbances or disorder aspects, namely (a) physical/motoric, such as cerebral palsy and polio, (b) cognitive like mental retardation, superior child (gifted), (c) language and speech, (d) hearing, (e) vision, and (f) social emotions. The children need special methods, materials, services, and equipment, in order to achieve optimal growth, since they will learn at different speeds, and also in different ways. Although they have different potentials with children in general, they should receive equal treatment and opportunities. It begins by calling them with children with special needs (CSN). In CSN, there are several important terms identified, namely:

1) Low vision, such as someone said to be low versioned if she/he still has the rest of the vision in such a way that at least they still can distinguish dark and light.
2) Weak in hearing (hard of hearing). If they lose the ability to hear ranged from 35-69 dB. They have difficulty hearing but are not hindered for him to understand other people's conversations, even using or not using tools.
3) Lack of mental (mental retardation). That is a state of weak intelligence (sub normal). Since the period of development (since birth or since childhood), which is characterized by general intelligence function that is below average, along with the reduced ability to adjust or behave adaptively.
4) Cerebral policy, namely stiffness caused by abnormalities in the brain. A child suffering from cerebral palsy does not always show stiffness, but can also show wilting or vibration or imperfect moves.
5) Emotional disturbed, is a group of children who are disturbed or obstructed by emotional development, with indication of the presence of symptoms of tension or inner conflict, showing anxiety, neurotics, or psychotic behavior.
6) Socially maladjusted is a group of children who cannot get along with the norms of community and culture,

which applies both at home, school and community. The symptoms are as follows, at home is difficult to regulate, low learning achievement, destructive, quarrelsome, mature in social relationships, lack of learning from what is said, tend to have short attention spans due to difficulty following instructions.

7) Emotionally handicapped / Behavioral disorder, i.e. children with emotional barriers or behavioral disorders, when indicating the presence of one or more of the following five components: (1) unable to learn not because of intellectual factors, (2) health, (3) unable to make good relationships with friends and teachers, (4) behaving or feeling out of place, (5) tendering toward physical symptom, such as feeling pain or fear related to person or problem in school (Delphie, 2006).

8) Psychotic is a group of children with emotional disturbances on a heavy and very heavy level, with symptoms of experiencing disorientation of time, space, place or all three. Schizophrenia is a condition which makes a child is unable to distinguish hallucinations and reality, a common symptom of this group. To cure this group, a professional personnel is needed and they even possible to be treated in a mental hospital.

9) Attention Deficit and Hyperactive Disorder (ADHD) is an increase in motor activity up to a certain level that causes behavioral disorders that occur, at least in two places and different atmosphere. For example, explosive feelings, excessive activity, likes to make a stir, revolt, and destructive that settled

10) Down syndrome, it is a chromosomal disorder from the formation of chromosome 21 due to failure of a pair of chromosomes to separate each other when a split happened. This abnormality affects the retardation of physical and mental growth. It was first known in 1866 by Dr. John Longdon Down because of the strange features such as the relatively short height, the head is smaller, and the flat nose resembles the Mongolian.

As an effect of human rights movement, a new view emerges that all children with different abilities must be educated together with normal children in the same place. This is meant that the exceptional children should not be refused to study in the public school they want. Meanwhile, inclusive education is an educational model where children with normal and abnormal abilities can learn together in public schools. This educational system used the terminology of children with special needs or children with special education need, as a substitute for children with disabilities or extraordinary children. Several impressing ideas proposed by Balli (2016), he explained that parents were not involved enough into the school life in order to ensure the inclusion of their children within the regular education system, parents feel they should be more involved in the objectives instead of just signing the documents. Parental involvement in school takes a significant sense in terms of achieving inclusive education for their children with disabilities, who could raise the voice to protect their own right.

Other study conducted by Koster, Nakken, and Van Houten (2010) in the theme of contacts or interactions, students with special needs had fewer interactions with their classmates but more interactions with the teacher. This later finding can be viewed negatively because interactions with the teacher might be more expensive than interactions with classmate. Next, Cashin (2008) showed her research in Reynoldsburg City Schools in Ohio about parents of special needs children and its effect on special needs children's GPA. The students made academic growth throughout the school year and continued to work towards their goals, which may have led to academic success reflected in high GPAs and this growth may have been due to students' individual goals being communicated with parents at the beginning of the school year through their Individualized Education Programs (IEP's). Further, in a same sense, Vidal (2012) says that parents might have strengthened their involvement in their CWA's (Children with Autism) education and training, contributing to their children's overall improvement and achievements. This implies that every child has special needs, both permanent and non-permanent. These special needs can be divided into three; they are 1) individual needs, 2) exceptional special needs and 3) common special needs.

The model of inclusive education can be viewed as a philosophical reform, concept, and principle of education for CSN. Thus, the presence of an inclusive education model can be done as a form of renewal in view of the CSN, so that extraordinary children are no longer restricted in the setting of disability school, but are given equal rights to follow education in conjunction with normal students in public schools. It is in line with (Qu, 2015) that although inclusion is regarded as the common goal that all educators should aim for, it does seem that considering various practical issues, there is still a long way to go before it can be properly achieved on a large scale. This, on one hand, keeps encouraging academics and practitioners to work towards inclusion (Hasyim, 2013) in his research in the inclusive school in SMK Negeri 2 Malang that the socialization on inclusive school must be done intensively to improve the belief of parents with disabilities children and to improve the belief of the society, and the inclusive education still needs the improvement in terms of the development of teachers' quality, teaching and learning strategies and empowering participation from society(Arsidal, 2013).

3. Research Hypotheses

Based on the assumptions, the hypotheses of this research are formulated into:

1) Parents' involvement significantly influences the achievement motivation of children with special needs in SMP Negeri 4 Gresik.
2) Parents' involvement significantly affects the learning achievement of children with special needs in SMP Negeri 4 Gresik.
3) Parents' involvement significantly influences the achievement motivation and learning achievement of children with special needs in SMP Negeri 4 Gresik.

4. Methodology

This research is designed as a survey research (data collected from the sample then the results generalized to the population) with methods and techniques of data collection as it is. The method used in this research is explanation survey method with quantitative approach through correlation and regression analysis. The analysis will be used to explain the phenomenon with quantitative prediction in testing the effect of the correlation coefficient between parents' involvement variable (X1) to achievement motivation (Y1) and learning achievement (Y2) the object of research is the students of CSN and the parents in SMP N 4, which amounted to 14 students. Data are collected using documentation and questionnaire studies. The description is given in the following figure.

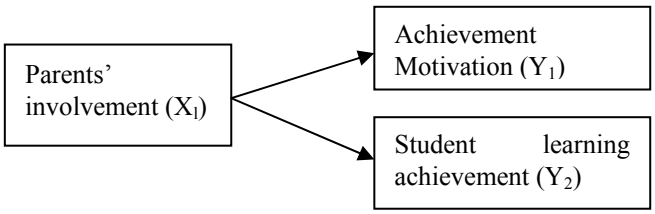


Figure 1. Research design

4.1 Population, Sample, and Sampling Technique

4.1.1 Population

According to Sugiyono (2001), population is a generalization area consisting of objects / subjects that have certain characteristics and qualities set by researchers to be studied and then drawn into conclusions. While understanding the population according to Arikunto (2003), is the overall subject of research. From this understanding, it can be concluded that the population in the study include everything that will be the subject or the object of research desired by the researcher.

Determination of the research target population and its characteristics is an important step before determining the sample. The clarity of the research problem formulated is closely related to the targeting of the population. The population in this study was students and parents of CSN at SMPN 4 which amounted to 21 people.

4.1.2 Sample

Research sample is part of the population taken as a source of data and can represent the population, so the type of sample taken should reflect the population. According (Sugiyono, 2001) sample is part of the number and characteristics possessed by the population. Meanwhile, according to (Riduwan, 2004) "sample is part of population". Based on preliminary observations made before the research, it was found that the number of CSN students was 14. Therefore, the entire population of CSN students in SMPN 4 Gresik is the subjects of this research. It is also called the saturated sample, so the sample in this study amounted to 14 people.

4.1.3 Research Variables

Based on the theories, assumptions and opinions, there are two independent variables and one dependent variable. They are parents' involvement as independent variable and achievement motivation and learning achievement as the dependent variable. The influence of parents' involvement variables on achievement motivation and learning achievement will be studied and reviewed. Based on the relationship, this influence was also studied about how big and how the characteristics are.

4.2 Research instrument

4.2.1 Validity test

This research was conducted to measure the validity questionnaire. A questionnaire is said to be valid if the question on the questionnaire is able to reveal something that will be measured by the questionnaire. Riduwan (2002) stated that validity is a measure of indicating the reliability or validity of a measuring device. In this study, validity test is done by calculating the correlation score of each item question with the total score of a question in a variable. Correlation calculation used is correlation Warsonpoduct moment (Sugiyono, 2001) indicated by the following formula:

$$R_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{N\sum X^2 - (\sum X)^2\}\{N\sum Y^2 - (\sum Y)^2}}$$

Where,

R_{xy} : coefficient for X and Y variables

N : number of respondent

X : number of item score from tested variables

Y : number of total score (all item) from tested variable

A valid question item finds a significant correlation which is indicated by a significance value less than a = 0.05 between the items of the question measured by its validity to the total score of all the questions. A question item is invalid if its significance value exceeds a = 0.05 or there is no significant correlation between the item of question with the total score of all the questions.

4.2.2 Reliability Test

Reliability test is used to measure the reliability of a questionnaire which is an indicator of the variable. A questionnaire is said to be variable if one's answer to the question is consistent or stable over time. Sugiyono (2001) stated that reliability of the instrument can be tested by analyzing the consistency of the items on the instrument with certain techniques. Reliability test on this research was done by using SPSS tool with Alpha Cronbach statistic test.

4.3 Data Analysis Technique

4.3.1 Multiple Linear Regressions

The analysis technique used in this research is multiple linear regressions. This analysis is used to examine the effect of parental involvement on achievement motivation and learning achievement with the following formula of $Y = a_{1+b1} X_1 + b_2 X_1$. Next, to perform the hypotheses testing, test approach with two kinds of variance analysis is used.

4.3.2 F-test

Integrity test was conducted using F-test, where trust is 95 % or a = 0.05 with the critical value: Fa; k-1; k(n-1). Rejection and acceptance value of H_o:

1) If $F_{cal} > F_{tab}$, so H_a accepted which means free variables simultaneously has significant effect on the dependent variables.
2) If $F_{cal} > F_{tab,}$ then $H_o$accepted and $H_a$rejected which means free variables simultaneously have insignificant disturbance on the dependent variable.

Moreover, the F-test formula according to Sugiyono (2001) is elaborated into the following details.

Simple linear regression

$F = S^2_{reg} / S^2_{res}$

Multiple linear Regressions

$F = R^2 (N – m – 1)$. (Sugiyono, 2001)

$M (I- R^2)$

Explanation:

R^2 : Determination coefficient

N : Number of sample

M : Number of free variable

4.3.3 T-test

To find out which independent variables have partial influence on dependent variable then used t-test through calculation of SPSS program to see t calculate that will be compared with t table. In testing this hypothesis the level of significance used was 0.05 (5%) with a degree of freedom of n - 1. The partial correlation coefficient test can be calculated by the following formula:

$$t_{calculate} = \frac{\sqrt{r^2(n-3)}}{(1-r^2)}$$

Where:

r = Partial correlation

n = Number of sample

Criteria of Ho acceptance and rejection:

1) If $t_{cal} > t_{tab}$, then Ho is rejected and Ha accepted which means independent variables partially have a significant influence on the dependent variable.
2) If $t_{cal} > t_{tab}$, then Ho accepted and Ha rejected which means independent variables partially have an insignificant influence on the dependent variable.

Coefficient of determination (R^2)

To know how big is the influence of independent variable on dependent variable, coefficient of determination was used via SPSS program.

5. Research Result and Interpretation

5.1 Data Analysis

Before the hypothesis test to determine the influence of independent variables (parents' involvement) to the dependent variable (achievement motivation) was conducted, validity test data in the form of validity and reliability test and prerequisite test linear regression was done first.

5.1.1 Validity and Reliability Test

1) Validity Test

As known before, a questionnaire instrument must be tested for its validity and reliability. The validity of this research instrument is tested by correlating each respondent's answer items with the number according to the number of questions on each variable. The correlation test used is Pearson Correlation, which can be seen in table below. The following recapitulation of the calculation results calculated (r calculation) of each item question by the amount for five variables and compared with r table. If r calculated> r table, then the problem is valid and vice versa.

Table 1. Correlation of calculation result ($r_{calculate}$) each item of question to determine validity of each questions

Variables	Question no.	Correlation of calculation ($r_{calculate}$)	r_{table} (on respondents number 21; df = 19)	Explanation
Parenting (X_1)	1	0.723	0.433	Valid
	2	0.604	0.433	Valid
	3	0.703	0.433	Valid
	4	0.875	0.433	Valid
Communication (X_2)	1	0.804	0.433	Valid
	2	0.695	0.433	Valid
	3	0.695	0.433	Valid
	4	0.716	0.433	Valid

Voluntarity (X_3)	1	0.555	0.433	Valid
	2	0.500	0.433	Valid
	3	0.641	0.433	Valid
	4	0.719	0.433	Valid
	5	0.818	0.433	Valid
Home studying (X_4)	1	0.682	0.433	Valid
	2	0.740	0.433	Valid
	3	0.639	0.433	Valid
	4	0.589	0.433	Valid
	5	0.562	0.433	Valid
Decision making (X_5)	1	0.888	0.433	Valid
	2	0.511	0.433	Valid
	3	0.815	0.433	Valid
	4	0.516	0.433	Valid
	5	0.450	0.433	Valid
Collaborating (X_6)	1	0.475	0.433	Valid
	2	0.570	0.433	Valid
	3	0.457	0.433	Valid
	4	0.513	0.433	Valid
	5	0.596	0.433	Valid
Hope (Y1.1)	1	0.510	0.433	Valid
	2	0.537	0.433	Valid
	3	0.753	0.433	Valid
	4	0.660	0.433	Valid
	5	0.644	0.433	Valid
Hope (Y1.2)	1	0.626	0.433	Valid
	2	0.581	0.433	Valid
	3	0.638	0.433	Valid
	4	0.496	0.433	Valid
	5	0.558	0.433	Valid
Perception (Y1.3)	1	0.758	0.433	Valid
	2	0.588	0.433	Valid
	3	0.694	0.433	Valid
	4	0.817	0.433	Valid
Need (Y1.4)	1	0.714	0.433	Valid
	2	0.667	0.433	Valid
Feedback (Y1.5)	1	0.671	0.433	Valid
	2	0.735	0.433	Valid
	3	0.716	0.433	Valid
Success consideration (Y1.6)	1	0.546	0.433	Valid
	2	0.673	0.433	Valid
	3	0.940	0.433	Valid
Menyatudengantugas (Y1.7)	1	0.806	0.433	Valid
	2	0.792	0.433	Valid

Source: Primary data processed in 2014.

Based on the instrument, five independent variables and one dependent variable have greater value of $r_{calculate}$ than r_{table} ($r_{calculate} > r_{table}$) or greater than 0.433, at df = 19, so it can be concluded that all questions in the instrument of the study are valid and feasible to be used to retrieve research data.

2) Reliability Test

Test reliability with Cronbach Alpha from SPSS program is shown in the following table. Here is a recapitulation of the results of the intended reliability test.

Table 2. Cronbach alpha test for reliability

Variables	No. of question	Cronbach Alpha Minimum	Cronbach Alpha Calculate	Explanation
Variable X_1	4	0.6	0.7859	Reliable
Variable X_2	4	0.6	0.7880	Reliable
Variable X_3	5	0.6	0.7577	Reliable
Variable X_4	5	0.6	0.7547	Reliable
Variable X_5	5	0.6	0.7482	Reliable
Variable X_6	5	0.6	0.6770	Reliable
Variable $Y_{1.1}$	5	0.6	0.7443	Reliable
Variable $Y_{1.2}$	5	0.6	0.7160	Reliable
Variable $Y_{1.3}$	4	0.6	0.7645	Reliable
Variable $Y_{1.4}$	2	0.6	0.7319	Reliable
Variable $Y_{1.5}$	3	0.6	0.7732	Reliable
Variable $Y_{1.6}$	3	0.6	0.7945	Reliable
Variable $Y_{1.7}$	2	0.6	0.8314	Reliable

Source: Primary data processed in 2014.

Based on the above instrument, it can be seen that for five independent variables and one dependent variable the Cronbach Alpha value calculate ($\alpha_{calculate}$) is more than the minimum limit of Cronbach Alpha value of 0.6 or greater than 0.6, so it can be concluded that the research instrument can be trusted Or Reliable. Based on the results of the above test, it can be concluded that the research instrument is valid and reliable, so it can be used to perform the next test.

5.1.2 Classic Assumption Test (Equation 1)

1) Multicollinearity Test

It has been explained that to determine the existence of multicollinearity, the researchers looked at the value of variance inflation factor (VIF). The commonly used VIF value is a tolerance value of at least 0.10 (10%) or equal to VIF value below 10. If tolerance> 10% and VIF value in each independent variable is not more than 10, it is concluded that there is no multicollinearity Between free variables in the regression model and vice versa.The test results show the VIF value on the free variable (parental involvement) is 1,000. The test results show VIF value at free variable not more than 10, thus can be said that there is no multicolinearity between the independent variable so that regression model is feasible to use.

2) Heteroscedastisity Test

This test indicator is implemented by looking at the Scatterplot chart. If the points spread randomly and spread over and below the number 0 on the Y axis, there is no heteroscedasticity.

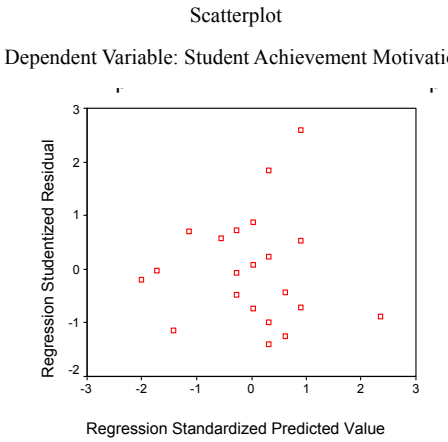


Figure 2. Scatterplot graph (Source: Primary data processed using SPSS, 2014)

From the scatterplot chart above, it is seen that the point spreads randomly and spreads above or below the number

0 on the Y axis, so it can be concluded that there is no heteroscedasticity in the regression model. Thus, the regression model is appropriate to predict the achievement motivation of the students based on the input of independent variables, namely parents' involvement.

3) Normality Test

To know the treatment whether the distribution is normal or not, the line describes the actual data within the diagonal line. If the data spreads around its diagonal line and follows the direction of its diagonal line or histogram graph, then this shows a normal distribution pattern. If the data is far from the diagonal line and or does not follow the direction of the diagonal line or the histogram graph then shows the abnormal distribution pattern. Normality test results as shown in the following figure.

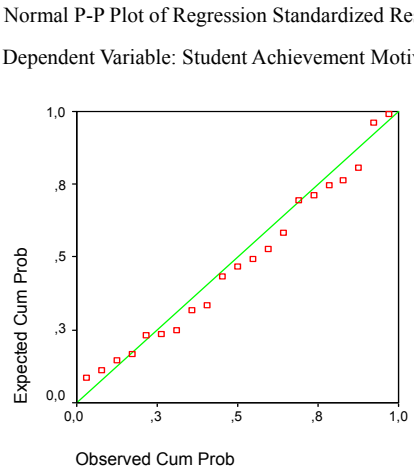


Figure 3. Normality Graph (Source: Primary data processed using SPSS, 2014)

Based on test result in regression model, dependent variable and independent variable have normal distribution. This can be seen in the picture above if the data line follows the diagonal line, the data spreads around the diagonal line and follows the direction of the diagonal line or the histogram graph so it can be said the distribution pattern is normal. Based on the results of the classic assumption test described above, it is appropriate to use for subsequent regression test.

5.1.3 Linear Regression Test (Equation 1)

This study uses linear regression analysis. Linear Regression Test (1) is applied to know the magnitude of influence between independent variable of parents' involvement to dependent variable of achievement motivation. Meanwhile, the multiple linear regression test results using SPSS for Windows program shown in the table below.

Table 3. Linear Regression Test

Coefficients[a]										
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	11.025	14.367		.767	.452					
Parents' Involvement	.630	.165	.658	3.813	.001	.658	.658	.658	1.000	1.000

a. Dependent Variable: Student Achievement Motivation (Source: Primary data processed using SPSS, 2014)

Next, the coefficient result of the test is put into the regression formula.

The regression equation is as follows:

$Y = a + bx + e$

$Y = 11.025 + 0.658\ x + e$

1) The constant of 11,025 states that if the independent variable is considered constant, then the achievement motivation is 11.658.
2) Regression coefficient of the parents' involvement of 0.658 states that any increase in parental involvement by 1 point will increase the motivation of achievement of 0.658 points. If it is multiplied by 1000, the description becomes significantly increase parents' involvement of 1000 points, then, it will also increase motivation achievement which is equal to 658 point.

Based on the equation above, which shows the magnitude of the effect of parental involvement on achievement motivation, it can be said that parental involvement partially gives a significant influence on achievement motivation.

5.1.4 Hypotheses Test (Equation 1)

1) T-test

T-statistic test showed how far independent variable confirms the dependent variation. If the Ho is accepted if bi = 0, means that there is no influence but Ho is rejected if bi ≠ 0, means that there is influence

The above table indicates the result of t-test through regression analysis from statistical computation. The t-test shows that the $t_{calculate}$ value for the parent involvement variable (X) of 3.813, the number is compared to the t_{table} then $t_{calculate} > t_{table}$ or 3.813 > 2.093 at df = 19 (as Table in Appendix Critical Values for Distribution).The t-test results when depicted in the test acceptance curve are shown as follows.

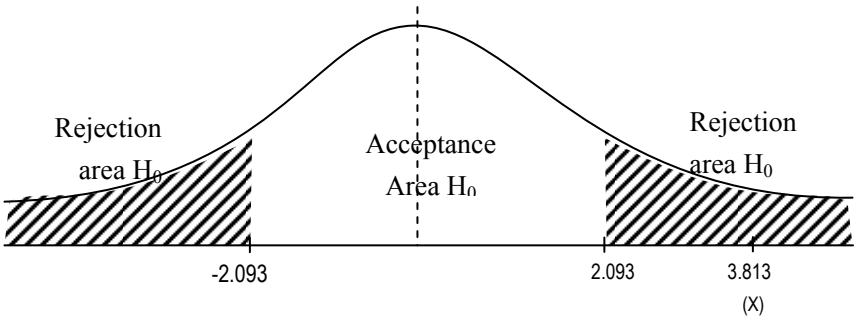


Figure 4. T-test area of acceptance and rejection (Source: Primary data processed using SPSS, 2014)

Based on the above test results, it can be seen that $t_{calculate}$ for parental involvement variables (X), is greater than t_{table} and positive value. The t-test results are depicted in the acceptance or rejection graph of the T-Test as the figure shows that the t-test result for the independent variable is in the Ho Rejection Area. This means that the hypothesis states that there is influence of parent's involvement on achievement motivation accepted. In other words there is a positive influence of parental involvement on achievement motivation. Test showed a standard coefficient. If the Ho: bi = 0 is rejected, and if Ho: bi ≠ 0 is accepted. It means that the hypothesis location about variable of involvement effect is similar to zero.

2) F-test

The F-test shows whether all the independent variables included in the model have a mutual influence on the dependent variable. The null hypothesis (Ho) to be tested is whether all parameters in the model are zero, or:

Ho accepted if b1 = b2 = ... = Bk = 0, meaning that there is no effect simultaneously (together)

Ho is rejected if b1 = b2 = ... = Bk ≠ 0, meaning there is influence simultaneously (together)

Because in this study the free variable amounted to only one then the result of Test F applies only to one variable. SPSS for Windows output results in simultaneous testing as shown below.

Table 4. F-test (Simultan)

ANOVA					
Model	Sum of Square	df	Mean Square	F	Sig.
1 Regression	93.547	1	93.547	14.538	.001[a]
Residual	122.262	19	6.435		
Total	215.810	20			

a. Predictors: (Constant), Parents' involvement

b. Dependent Variable: Student achievement motivation

Source: Primary data processed using SPSS, 2014

From the calculation result using SPSS, it is found that the F-calculate is 14.538> F-table of 4.38 at df = 19 (as in Appendix Critical Values for the F Distribution ($\alpha = 0.05$), besides the probability of test result on it is 0.001 far below 0.05, then Ho is rejected thus proved that parental involvement influences the achievement motivation. The following graph shows the result of F-test if described in the receipt test curve is as follows.

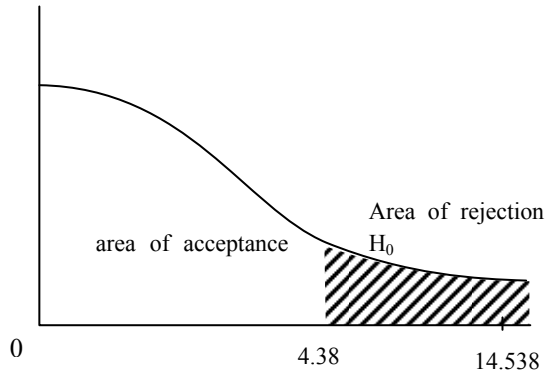


Figure 5. Area of acceptance and rejection in F-test (Source: Primary data processed, 2014)

The figure shows that the F-calculate value of 14.538 is in the rejection area of Ho, meaning the null hypothesis is rejected and the alternative hypothesis is accepted so that the free variable (parental involvement) included in the model has an influence on the dependent variable that is the achievement motivation. Koefisien Determinasi (R^2).

Coefficient of determination (R2) serves to measure how far the ability of the model in explaining the variation of dependent variable is. It can be seen in the table below.

Table 5. Determination coefficient (R^2)

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-W atson
1	.658[a]	.433	.404	2.53670	1.976

a. Predictors: (Constant), Parents Involvement.

b. Dependent Variable: Student achievement motivation.

Source: Primary data processed using SPSS, 2014.

Test results as shown in the table above reveals the coefficient of determination (R2) of 0.433. This means that 43.3% of achievement motivation variations can be explained by variations of independent variables (parental involvement). While the rest (100% - 43.3% = 56.7%) is explained by other factors outside of this study. In addition, R value of 0.658 and the value of Adjusted R Square of 0.404 indicates that if parent's involvement is in good condition, by maintaining the indicators of each variable attached in the questionnaire, then the variable will be able to give effect of 65.8% and if no effort In increasing the variable parent involvement or less attention then

only able to give influence of 40.4% only on achievement motivation. These figures show the ability of parental involvement variables to explain the dependent variable of achievement motivation.

5.1.5 Classics Assumption Test (Equation 2)

1) Multicollinearity Test

It is explained that to determine whether or not there is multicollinearity, the researchers looked at the value of variance inflation factor (VIF). The commonly used VIF value is a tolerance value of at least 0.10 (10%) or equal to VIF value below 10. If tolerance> 10% and VIF value in each independent variable is not more than 10, it is concluded that there is no multicollinearity Between independent variables in the regression model and vice versa. The test results show the VIF value on the free variable (parental involvement) is 1,000. The result of the test shows that VIF value on independent variable is not more than 10, so it can be said that there is no multicolinearity between independent variables so that this regression model is feasible to be used.

2) Heteroscedasticity Test

This test indicator is by looking at the Scatterplot chart. If the points spread randomly and spread over and below the number 0 on the Y axis, no heteroscedasticity occurs.

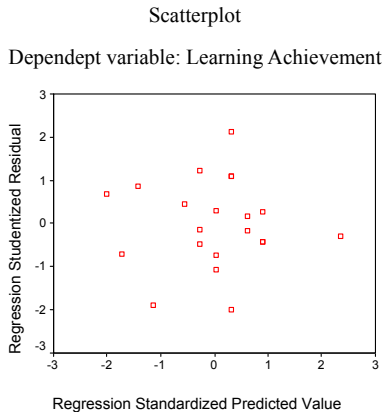


Figure 6. Scatterplot Graph (Source: Primary data processed using SPSS, 2014)

From the scatterplot chart above, it can be seen that the spreading point is random distributed above and below the number 0 on the Y axis, it can be concluded that there is no heteroscedasticity in the regression model so that the regression model is appropriate to predict the student's learning achievement based on independent variable input that is parent's involvement.

3) Normality Test

It has been explained that in order to know the treatment of normal distribution, it is necessary to see whether the line representing the real data will follow its diagonal line or not. If the data spreads around its diagonal line and follows the direction of its diagonal line or histogram graph then it shows the normal distribution pattern. If the data is far from the diagonal line and or does not follow the direction of the diagonal line or the histogram graph then shows the abnormal distribution pattern. Normality test results as shown in the following figure.

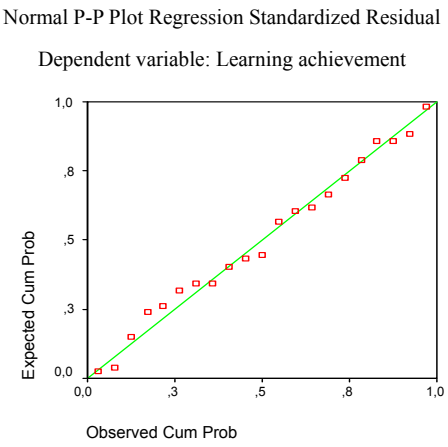


Figure 7. Normality graph (Source: Primary data processed using SPSS, 2014)

Based on the test results in the regression model, the dependent variable and the independent variable have a normal distribution, it can be seen in the picture above which shows that the data line follows the diagonal line, the data spreads around the diagonal line and follows the direction of the diagonal line or histogram graph, so it can be said distribution pattern is normal. Based on the results of the classic assumption test described above, it is appropriate to use for subsequent regression test.

5.1.6 Linear Regression Test (Equation 2)

This study uses linear regression analysis. Linear Regression Test (2) to know the effect of free variable involvement of parents to the dependent variable that is learning achievement.

Multiple linear regression test results using SPSS for Windows program as the table below.

Table 6. Linear regression test

Coefficients[a]										
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	23.204	16.909		1.372	.186					
Parents Involvement	.700	.194	.637	3.601	.002	.637	.637	.637	1.000	1.000

a. Dependent variable: child learning achievement (Source: Primary data processed using SPSS, 2014)

After that, the coefficient of the test is included in the regression with the following formula. The regression equation is as follows:

$Y = a + bx + e$

$Y = 23.204 + 0.637\ x + e$

1) The constant of 23,204 states that if the independent variable is considered to be constant, then the learning achievement of the child is 23.204.

2) Regression coefficient parent involvement of 0.637 states that any increase in parental involvement by 1 point then it shall improve the learning achievement of children by 0.637 points. If multiplied by 1000, the description becomes every increase of parent involvement of 1000 point hence will increase student achievement equal to 637 point.

Based on the above equation, it can be said that parental involvement partially gives a significant influence on the learning achievement of children.

5.1.7 Hypothesis Test (Equation 2)

1) T-test

The statistical t-test t shows how far the influence of one independent variable individually in explaining the dependent variation. The zero hypotheses (Ho) to be tested is whether a parameter (bi) is equal to zero or not. If Ho is received if bi = 0, meaning no effect and if Ho is rejected if bi ≠ 0, meaning there is an influence. This can be seen in the table above. It is the result of t-test through regression analysis with the help of SPSS for Windows program. The t-test shows the value for the parent involvement variable (X) of 3.601, the number is compared with the table then $t_{calculate} > t_{table}$ or 3.601 > 2.093 at df = 19 (as in the Table in Appendix Critical Values for Distribution).The t-test result can be depicted from the following curve.

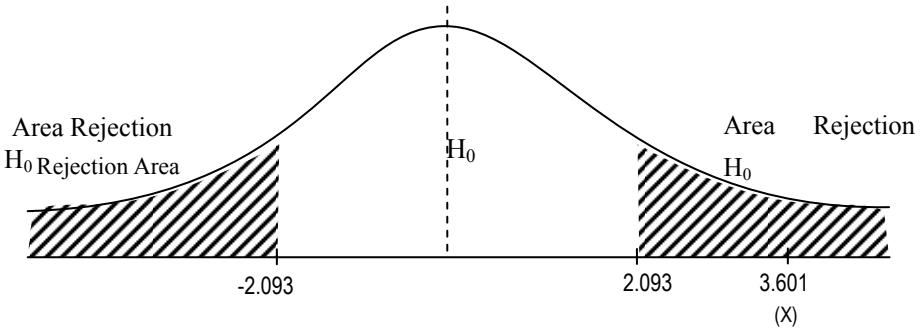


Figure 8. Acceptance and rejection area in t-test (Source: Primary data processed using SPSS, 2014)

Based on the test result above, $t_{calculate}$ for parent involvement variable (X) is bigger than t_{table} and it has a positive value. The t-test results are depicted in the acceptance or rejection graph of t-test as shown in the picture. The result of t test for the independent variable is in the rejection area of Ho. It means that the hypothesis stating the influence of parent involvement on the learning achievement of the child is accepted. In other words, there is a positive influence of parental involvement on children's learning achievement.

The test result shows the coefficient standard means. If Ho: bi = 0 rejected, and if Ho: bi ≠ 0 received. It means that the hypothesis about the influence of variables involvement of parents on learning achievement of children is accepted (bi not equal to 0).

2) F-test

F-test shows the independent variables included in the model have a simultaneous effect on the dependent variable. The null hypothesis (Ho) to be tested is whether all parameters in the model are zero, or Ho is accepted if b1 = b2 and Bk = 0. It means that there is no simultaneous effect occurs. The reason, the number of independent variables in this study only one, then the results of Test F applies only to one variable. SPSS for Windows output results in simultaneous testing as shown below.

Table 7. F-test (Simultan)

ANOVA[b]					
Model	Sum of Square	df	Mean Square	F	Sig.
1 Regression	115.587	1	115.587	12.967	.002[a]
Residual	169.366	19	8.914		
Total	284.952	20			

a. Predictors: (Constant), parents' involvement.

b. Dependent variable: Children learning achievement.

Source: Primary data processed using SPSS, 2014.

The calculation using SPSS got $F_{calculate}$as 12.967>F_{table}as 4.38in df = 19 (as it was depicted in the following table of the *Critical Values for the F Distribution* (α = 0.05). Besides, the probability of test result is higher, that is 0.002, far less than 0.05. Therefore, Ho is rejected, and so it is proven that parents' involvement affect child learning achievement.

The result of the F-test can be seen on this test acceptance graph.

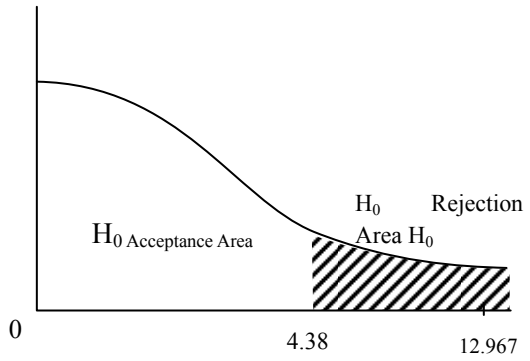


Figure 9. Acceptance and Rejection of F-test (Source: Primary data processed, 2014)

The picture shows that the $F_{calculate}$ value is 14.538 is in the rejection area of Ho, meaning the zero hypothesis is rejected and the alternative hypothesis is accepted so that the independent variable (parental involvement) included in the model has an influence on the dependent variable that is the learning achievement of the child.

3) Determination Coefficient (R^2)

Coefficient of determination (R^2) serves to measure how far the ability of the model in explaining the variation of dependent variable can be seen test results in the table below.

Tabel 8. Coefficient of determination (R2)

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-W atson
1	.637[a]	406	.374	2.98563	2.253

a. Predictors: (Constant), parents involvement.

b. Dependent variable: Child learning achievement.

Source: Primary data processed using SPSS, 2014

The test results, as displayed in the table above, shows the coefficient of determination (R^2) of 0.406, which means 40.6% variation in child learning achievement can be explained by variations of the independent variables, i.e. parents' involvement. The rest (100% - 40.6% = 59.4%) is explained by other factors outside this research. R value of 0.637 and Adjusted R Square in the value of 0.374 indicates that if parent involvement is in good condition by maintaining the indicators of each variable attached in the questionnaire. Thus, the variable will be able to give influence of 63.7% and if there is no effort in increasing the parent involvement variable or giving insufficient attention then the given effect would only reach as much as 37,4% only on learning achievement of the child. These numbers show the ability of parents' involvement variables to explain the dependent variables, i.e. of learning achievement on children.

5.2 Conclusion

The above results show that how big is the magnitude of the influence of parental involvement on students' achievement and motivation. This is because motivation can arise either from internal or external of the students.Motivation is a dynamic process and it produces goal-oriented behavior. Motivation as an inner process or psychological process that occurs in an individual is strongly influenced by various factors. Consequently, the involvement of parents is something that should be developed in order to enhance children's motivation.The results also show the magnitude of the influence of parental involvement on learning achievement of children. There is no different argument from the explanation above for the realistic role of parents in facilitating and enhancing chidren's learning achievement. Finally, it can be concluded that there is a significant effect of parents involvement on achievement motivation of the children with special needs in SMP Negeri 4 Gresik and there is

also a significant effect of parents' involvement on learning achievement of the children with special needs in SMP Negeri 4 Gresik.

References

Alimin, Z. (2004). *Anak Berkebutuhan Khusus*. Bandung: Jurusan PLB-FIB UPI.

Arikunto, S. (2003). *Prosedur Penelitian Pendidikan*. Jakarta: PT. BimaAksara.

Arsidal, D. (2013). Pelaksanaan Pembelajaran Siswa Berkebutuhan Khusus di SMK Negeri 4 Padang. *Journal of Pedagogia, XIII*(1).

Balli, D. (2016). Importance of Parental Involvement to Meet the Special Needs of their Children with Disabilities in Regular School. *Academic Journal of Interdisciplinary Studies, 5*(1). https://doi.org/10.5901/ajis.2016.v5n1p147

Buchori, M. (2006). Pendidikan Gagal Tanpa Partisipasi Orang Tua. *Basis: Menembus Fakta, 55*(07), 13.

Cashin, E. S. (Producer). (2008). *Increased Communication with Parents of Special Needs Children and its Effect on Special Needs Children's GPA*. Retrieved from http://www.otterbein.edu/Files/pdf/Education/JTIR/VolumeVI/Cashin.pdf

Clough, P., & Nutbrown, C. (2004). Special Educational Needs and InclusionL: Multiple Perspective of Preschool Educatores in the UK. *Journal of Early Childhood Research, 2*(2), 191-211. https://doi.org/10.1177/1476718X04043015

Delphie. (2006). *Pembelajaran Anak Berkebutuhan Khusus*. Bandung: PT. RefikaAditama.

Elkin, J., Van Kraayonoord E. C., & Jobling, A. (2003). Parents' Attitudes to Inclusion of their Children with Special Need. *Journal of Research in Special Educational Needs, 3*(2), 122-129. https://doi.org/10.1111/1471-3802.00005

Faradina, N. (2016). Penerimaan Diripada Orang Tua yang Memiliki Anak Berkebutuhan Khusus. *Ejournal Psikologi, 4*(4), 386-396.

Ferrel, J. (2012). *Family Engagement and Chidren with Disabilities: A Resource Guide for Educators and Parents*. Cambridge: Harvard.

Hadjiyiannakou, A., Ioannou, C., & Tzoigkouros, C. (2007). Parents of Disabled Chidren: The Educational Ssytem and the Everyday Challenges. *International Journal about Parents in Education, 1*(0).

Hamalik, O. (2001). *Proses Belajar Mengajar*. Jakarta: PT. BumiAksara.

Hamzah, R. (2007). *Kepemimpinan Strategi mengefektifkan Organisasi*. Jakarta: PT. Gramedia.

Handoyo. (2001). *Peranan Ibu Bapak Mendidik Anak*. Bandung: PT. Angkasa.

Hasyim, Y. (2013). Pendidikan Inklusif di SMK Negeri 2 Malang. *Jurnal Kebijakan dan Pengembangan Pendidikan, 1*(1).

Koster, M., Pijl, J. S., Nakken, H., & Van Houten, E. (2010). Social Participation of Students with Special Needs in Regular Primary Education in the Netherland. *International Journal of Disability, Development and Education, 57*(1). https://doi.org/10.1080/10349120903537905

MacKichan, D. M., & Harkins, J. M. (2013). Inclusive Education: Perceptions of Parents of Children with Special Needs of the Individual Program Planning Process. *Electronic Journal of Inclusive Education, 3*(1).

Mintari P, T., & Widyarini, N. (2015). *Gambaran Strategi Coping pada Orang Tua yang Memiliki Anak Berkebutuhan Khusus (ABK)*. Jember: Fakultas Psikologi Universitas Muhammadiyah Jember.

Murray, M. M., Handyside, M. L., Straka, A. L., & Arton-Titus, V. T. (2013). Parents Empowerment: Connecting with Preservice Special Education Teachers. *School Community Journal, 23*(1).

Qu, X. (2015). Understanding Special School Provision for Children with Severe Learning Difficulties in Relation to Inclusive Education. *Cambridge Open-Review Educational Research e-Journal, 1*(1).

Riduwan. (2002). *Skala Pengukuran Variabel Variabel Penelitian*. Bandung: PT. Alfa Beta.

Riduwan. (2004). *Metode dan Teknik Menyusun Tesis*. Bandung: PT. Alfa Beta.

Ritter, C. L., Michel, C. S., & Irby, B. (1999). Concerning Inclusion: Perceptions of Middle School Students, Their Parents, and Teachers. *Journal of Rural Special Education Quartely, 18*(2), 10-16. https://doi.org/10.1177/875687059901800203

Rodriguez, R. J., Blatz, E. T., & Elbaum, B. (2014). Parents' Views of Schools' Involvement Efforts. *Exceptional Children Journal, 81*(1), 79-95. https://doi.org/10.1177/0014402914532232

Sadiman, A. (2003). *Media Pendidikan: Pengertian, Pengembangan, danPemanfaatannya*. Jakarta: Pustekom Diknas dan PT. Raja Grafindo Perkasa.

Slamet. (1995). *Belajar & Faktor-Faktor Yang Mempengaruhinya*. Jakarta: PT. Rineka Cipta.

Sugiyono. (2001). *Metode Penelitian Administrasi*. Bandung: PT. Alfa Beta.

Vidal, L.-S. (2012). Intellectual, Academic, and Psychosocial Self-Care Achievementsamong Children with Autism. *Education Quartely, 70*(1), 26-40.

Wang, L. H. (2009). Should All Students with Special Educational Needs (SEN) Be Included in Mainstream Education Provision?-A Critical Analysis. *International Education Studies, 2*(4), 154-161. https://doi.org/10.5539/ies.v2n4p154

Whitning, M. (2012). Impact, Meaning and Need for Help and Support: The Experience of Parents Caring for Children with Disabilities, Life-limiting/Life-Threatening Illness or Technology Dependence. *Journal of Child Health Care, 17*(1), 92-108. https://doi.org/10.1177/1367493512447089

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/4.0/).

J Youth Adolescence (2016) 45:1053–1064
DOI 10.1007/s10964-016-0431-4

EMPIRICAL RESEARCH

Parental Involvement and Adolescents' Educational Success: The Roles of Prior Achievement and Socioeconomic Status

Aprile D. Benner[1] · **Alaina E. Boyle**[1] · **Sydney Sadler**[1]

Received: 10 December 2015 / Accepted: 30 January 2016 / Published online: 5 February 2016
© Springer Science+Business Media New York 2016

Abstract Parental educational involvement in primary and secondary school is strongly linked to students' academic success; however; less is known about the long-term effects of parental involvement. In this study, we investigated the associations between four aspects of parents' educational involvement (i.e., home- and school-based involvement, educational expectations, academic advice) and young people's proximal (i.e., grades) and distal academic outcomes (i.e., educational attainment). Attention was also placed on whether these relations varied as a function of family socioeconomic status or adolescents' prior achievement. The data were drawn from 15,240 10th grade students (50 % females; 57 % White, 13 % African American, 15 % Latino, 9 % Asian American, and 6 % other race/ethnicity) participating in the Education Longitudinal Study of 2002. We observed significant links between both school-based involvement and parental educational expectations and adolescents' cumulative high school grades and educational attainment. Moderation analyses revealed that school-based involvement seemed to be particularly beneficial for more disadvantaged youth (i.e., those from low-SES families, those with poorer prior achievement), whereas parents' academic socialization seemed to better promote the academic success of more advantaged youth (i.e., those from high-SES families, those with higher prior achievement). These findings suggest that academic interventions and supports could be carefully targeted to better support the educational success of all young people.

Keywords Parental educational involvement · Academic achievement · Educational attainment · Socioeconomic status

Introduction

American youth have made major strides in progressing farther along the education pipeline in recent years. High school dropout rates are at an all-time low, and high school completion, college enrollment, and bachelor's degree attainment have steadily increased over the last 40 years (Snyder et al. 2008; Snyder and Dillow 2013). Despite this democratization of educational opportunity, educational stratification remains an undisputable fact in the U.S. Socioeconomic disparities are ever-present in both K-12 school quality and in young people's postsecondary enrollment and persistence (Rothstein 2004; Kena et al. 2014); moreover, the educational and economic mobility of American youth is strongly linked to the educational success of their parents (Reynolds and Johnson 2011). Promoting educational attainment is a key national priority (The White House 2013), as the earnings gap between those who attain a bachelor's degree or higher versus those with a high school diploma or less have widened substantially over the past two decades (Fry 2013). Lower levels of educational attainment have also been linked to poorer health and wealth prospects across the life course, including higher rates of drug use and incarceration, greater unemployment and underemployment, and more health problems (Institute of Medicine 2014).

Exactly how to best promote the educational success of all children and adolescents has received extensive

✉ Aprile D. Benner
abenner@prc.utexas.edu

[1] Department of Human Development and Family Sciences, University of Texas at Austin, 1 University Station Stop A2702, Austin, TX 78712, USA

attention. One promising avenue for improving young people's educational prospects is parental educational involvement, or parents' active participation in the educational lives of their children, as such involvement has been linked to stronger academic outcomes for youth (Jeynes 2007; Hill and Tyson 2009; Zhan and Sherraden 2011). The associations between parental educational involvement and youth educational outcomes, however, appear to vary both by type of involvement (Fan and Chen 2001; Hill and Tyson 2009) and by SES (Hill et al. 2004).

In the current study, we sought to unpack this variability using nationally-representative, longitudinal data from high school students. Specifically, we investigated the links between parent educational involvement—including parents' home-based and school-based involvement and their academic socialization—and young people's academic performance and ultimate educational attainment. We placed particular attention on the extent to which students' socioeconomic status and prior achievement levels independently and conjointly conditioned the primary relations of interest. That is, we sought to determine whether the links between educational involvement and academic outcomes were stronger or weaker for more versus less affluent youth or those with higher versus lower levels of prior academic achievement. Such work can elucidate the value of educational interventions targeting parental involvement and suggest the extent to which such efforts could be more or less effective if targeted to certain aspects of parental involvement or specific student populations.

Parental Involvement and Adolescents' Educational Success

Parental educational involvement is a multifaceted construct that encompasses parents' educational involvement at home and at school as well as parents' academic socialization (Epstein 1987; Fan and Chen 2001; Hill and Tyson 2009). Home-based involvement includes any activities parents implement in the home that reinforce school-based learning, including monitoring homework completion, checking homework, and educational enrichment activities. School-based involvement entails parents' active involvement in the school setting through activities such as participating in school organizations, volunteering in the school, or communicating with teachers during parent-teacher conferences or other on-campus activities. Academic socialization encompasses indirect messages about school that communicate parents' educational expectations for the child and their views around the importance of education as well as the more concrete discussions in which parents directly promote the development of their children's future educational and occupational plans. Academic socialization allows parents to give their children the tools necessary for independence and educational success (Hill and Tyson 2009).

All three aspects of parental educational involvement are positively linked to students' academic success, including higher grades in school, better scores on achievement tests, greater school engagement, and grade promotion (Lee and Croninger 1994; Gutman and Midgley 2000; Fan and Chen 2001; Jeynes 2005, 2007; Seginer 2006; Woolley and Grogan-Kaylor 2006; Cheung and Pomerantz 2011). Meta-analysis work, however, suggests differential effects for the types of parental educational involvement (Hill and Tyson 2009). Academic socialization, for example, seems to be most strongly related to student achievement. School-based involvement is also positively related to achievement, but with weaker effects. Home-based involvement is more variable, such that enrichment activities tend to promote achievement, whereas homework help seems to be negatively related to academic outcomes. The more distal educational effects of parental involvement remain unknown, including whether parents' involvement in their children's education during secondary school promotes young people's ultimate educational attainment, a focus of the current study.

Potential Variation in the Link Between Involvement and Academic Outcomes

Well-documented differences exist in the links between socioeconomic status (SES) and both parental educational involvement and young people's academic outcomes, with differences generally reflecting the challenges and stressors that accompany inadequate family income and economic stress. Low-income parents and less educated parents are more likely to express lower educational expectations for their children compared to more affluent parents (Davis-Kean 2005; Carolan and Wasserman 2015). They are also less likely, on average, to be involved in their children's education, both at home and at school (Cheadle and Amato 2011; Roksa and Potter 2011). Similarly, family social background is also linked to children and adolescents' school performance and achievement, wherein young people reared in more affluent families generally outperform their less-affluent peers on every standard measure of academic achievement and engagement (Huston and Bentley 2010; Reardon 2011; Sirin 2005).

In addition to these well-established mean-level differences, there is some evidence that the relations between parental educational involvement and young people's academic outcomes may be conditioned by various aspects of family SES. For example, the links between both parental home-based involvement and parents' academic socialization and student engagement appear stronger for low-SES youth as compared to their more affluent peers

(Wang and Sheikh-Khalil 2014). Similarly, children from lower SES backgrounds seem to benefit more academically (both in reading and math achievement) from parents' engagement in home-based involvement activities, such as visiting a museum or attending a concert (Roksa and Potter 2011). This is consistent with Lareau's (2003) findings around concerted cultivation, which suggest that children from less affluent homes likely benefit most from parents' engagement in concerted cultivation, or a "deliberate and sustained effort to stimulate children's development and to cultivate their cognitive and social skills" (p. 238).

Concerted cultivation is highly relevant for the current study, as it generally encompasses all three aspects of parental educational involvement. Although some subsequent work has provided additional validation of the notion that concerted cultivation is particularly potent for those at the lower end of the SES spectrum (Greenman et al. 2011; Jæger 2011), other research has shown that concerted cultivation is related to the math and reading achievement of children from higher but not lower social classes (Roksa and Potter 2011). Consistent with this latter finding, in a study of African American families, parents' school-based involvement was positively linked to children's approaches to learning in families with college-educated parents; these links were non-significant in African American families where the highest parent education was a high school diploma (Dumais et al. 2012).

It is clear that the limited literature base on potential variation in the relations between parental educational involvement and achievement by SES is inconsistent, and we suggest that these inconsistencies may be driven, at least in part, by personal characteristics of the adolescent. Both bioecological (Bronfenbrenner and Morris 2006) and life course theories (Elder 1998) suggest that characteristics of the developing child can elicit responses from their proximal contexts that can promote either accumulating advantages or disadvantages. As such, although sociodemographic markers such as parents' education levels may constrain the levels or amounts of educational involvement parents are able to provide and the effects of such involvement, other characteristics of the child, such as their prior achievement levels, may encourage parents with less propensity to be involved to actually engage in more educational involvement activities to the greater benefit of their children.

Consistent with this hypothesis, Englund et al. (2004) found that children who were academically successful early in school had higher parent expectations than children who were performing worse academically, and these differences persisted across elementary school. Although more tangential to the focus of the current study, Crosnoe and Huston (2007) examined the intersection of adolescents' developmental characteristics (personal control, or adolescents' feelings that their plans and successes were within versus outside of their control), parents' academic socialization (i.e., adolescents' and parents' discussions around course-taking decisions), and family SES and the implications for students' achievement. They observed that students at the lowest SES quartile were negatively affected by the most maldaptive combinations of personal control and parental involvement (e.g., low feelings of personal control with very high levels of parent academic socialization), whereas those at the highest SES quartile were unaffected by these maladaptive combinations. In the current study, we seek to determine whether the links between educational involvement and academic outcomes are influenced conjointly by family SES and young people's prior achievement. We do so using a comprehensive measure of family SES, which accounts for parental education, occupational prestige, and family income, and a multidimensional operationalization of parental educational involvement that encompasses home- and school-based involvement and academic socialization, both of which represent key contributions of the current study.

The Current Study

We used the Education Longitudinal Study of 2002 (ELS) to examine the links between parental educational involvement and young people's academic progress across the early life course and potential variation by key moderators. Specifically, we posed two research questions. First, to what extent are the three aspects of parents' educational involvement (i.e., involvement at home, involvement at school, academic socialization) related to proximal (i.e., grades) and distal indicators (educational attainment) of young people's educational success? Consistent with prior meta-analytic results (Fan and Chen 2001; Hill and Tyson 2009; Jeynes 2003, 2007), we expected each aspect of parental educational involvement to be positively linked to educational outcomes. Moreover, we hypothesized that the links between academic socialization (i.e., parents' educational expectations and academic advice) and youth outcomes would be stronger than effects of parental involvement at home or at school. We extended the extant literature base by examining both the more immediate and longer-term implications of parents' involvement for young people's movement through the educational pipeline.

Second, we asked to what extent do family SES and students' prior achievement independently and conjointly condition (i.e., moderate) the effects of parental educational involvement on future academic outcomes? Given that prior work suggests the particular stability of affluent, high-achieving students' educational trajectories and the heightened sensitivity of lower-income students to

educational supports (Lareau 2003), we hypothesized that the links between parental educational involvement and academic outcomes would be a) more attenuated in high-SES families, particularly when adolescents were high-achieving and b) stronger in low-SES families regardless of student prior achievement level.

In the current study, we purposefully focused on parents' educational involvement during high school. Although this time in the life course is associated with increased autonomy and individuation, adolescents are making educational decisions that will influence their subsequent life course trajectories, and there is continued evidence that parents play a critical role at this juncture (Kim and Schneider 2005). Moreover, parents' educational involvement typically declines as students move through the K-12 system (Hill and Tyson 2009; Izzo et al. 1999). Yet if empirical work can document a persistent positive effect of parental involvement for older adolescents' school achievement and ultimate educational attainment, then this will suggest that high school policies and interventions should specifically target methods for heightening parental involvement, as they must compensate for the natural declines observed over time.

Methods

Data Source

The data were drawn from the Education Longitudinal Study (ELS), a multi-site, longitudinal sample of high school students, parents, and school personnel conducted by the National Center for Education Statistics (NCES; full procedures described in Ingels et al. 2004, 2005, 2014). The ELS is a nationally representative study exploring the influence of parental, school, student, and community factors for young people's academic trajectories across high school and into postsecondary education and employment. Data collection began in 2002 with students enrolled in 10th grade (Wave 1). The ELS used a two-stage sampling design, applying a stratified probability proportional to size criterion, resulting in a sample of 15,362 10th grade students in 752 schools at Wave 1 (Ingels et al. 2004). In Wave 1, student data were collected primarily at schools in a group setting, and parent, teacher, and administrative surveys were also conducted. Follow-up surveys were conducted with participants at the 12th grade year (2004; Wave 2) as well as in 2006 (Wave 3) and 2012 (Wave 4). These subsequent data collections focused primarily on student participants. We utilized parent data from Wave 1, as well as student and school records data from Waves 2 and 4.

Participants

Our analysis sample was comprised of 15,240 students ($M_{age} = 16.46$ years, $SD = 0.63$) from 752 schools who had any valid Wave 1 data. Schools were eligible to participate in the ELS study if they had spring-term 10th graders enrolled in 2002 and were located in the U.S. There were 1221 schools that were eligible for participation, and of those, 752 schools set a Survey Day (i.e., students completed data collection). All spring term 2002 sophomores in the targeted schools were eligible for the study, except for foreign exchange students. Students were not excluded categorically (e.g., because of limited English proficiency, special education services, or disabilities), but rather on a case-by-case (individual) basis (Ingels et al. 2004). Adolescents that were ineligible to complete the base year questionnaire were excluded from the current study ($N = 118$). The sample was 50 % female and racially/ethnically diverse (13 % African American, 15 % Latino, 9 % Asian American, 57 % White). At recruitment, students resided in families that had an average household income of $35,001–$50,000, and the average education level of participants' parents corresponded to having some postsecondary education but not a 4-year degree ($M = 4.5$, $SD = 2.09$). Table 1 provides descriptive information on the study participants.

Measures

Data for the current study were drawn from surveys of students, parents, and school records. Bivariate correlations and descriptive statistics appear in Table 2 for the central constructs of interest.

Parental Involvement

Parents self-reported three types of educational involvement—involvement at home, involvement at school, and academic socialization at Wave 1 (10th grade). For home-based educational involvement, parents completed two items rating how often they helped the target child with homework or school projects (e.g., check your tenth grader has completed all homework) over the past year on a four-point scale (1 = *never*, 4 = *frequently/always*). Higher mean scores indicated higher levels of parental home involvement ($r = .23$, $p < .001$). Parents' educational involvement at school was assessed using parents' response of "yes" or "no" to four items concerning parental participation in school activities that academic year. Example items include, "belong to the school's parent-teacher organization" and "act as a volunteer at the school." Higher mean scores represent a higher proportion of

Table 1 Demographic characteristics of sample

Variable	*N*	Frequency (%)	*M*	*SD*
Student gender				
Male	7580	49.7		
Female	7670	50.3		
Student race/ethnicity				
White	8680	57.0		
African American	2020	13.3		
Latino	2220	14.5		
Asian American	1400	9.2		
Other race/ethnicity	930	6.1		
Student age	15,190		16.46	0.63
Parent income	15,240		9.06	2.42
Parent education	15,240		4.51	2.09
SES composite	14,100		0.19	0.68
School sector				
Public	10,400	69.7		
Private	4510	30.3		
% Total of student body eligible for free and reduced lunch			23.48	24.84

Total possible $N = 15{,}240$. All *ns* rounded to the nearest 10 per NCES requirements. For parent education, mean corresponds to between a 2-year degree and some 4-year college experience without a degree. For parent income, mean corresponds to $35,001–$50,000

school-based activities in which parents participated. We included two aspects of parents' academic socialization. Parents completed four items on the provision of academic advice or information (e.g., "selecting courses or programs at school," "applying to college or other schools after high school") that they or their partners provided to the focal adolescent. Items were rated on a three-point scale (0 = *never*, 1 = *sometimes*, 2 = *often*), and higher mean scores indicated greater provision of academic advice (Cronbach's $\alpha = 0.74$). Parent's educational expectations were measured by parents' reports of how far they expected their adolescent to go in their education, ranging from 1 (*less than a high school degree*) to 7 (*PhD, MD, or other advanced degree*).

Student Grade Point Average

Student proximal school achievement was determined using cumulative high school grade point average (GPA) from the 12th grade school transcripts (Wave 2). Students' unweighted GPAs were categorized by NCES using an 8-point scale (0 = 0.00–0.50, 8 = 3.51–4.00).

Student Educational Attainment

Student participants self-reported on their highest level of completed education at the Wave 4 follow up in 2012 (approximately 8 years after their expected high school graduation). Student education level was measured on 10-point scale (1 = *didn't finish high school*, 10 = *completed PhD, MD, other advanced degree*).

Socioeconomic Status (Moderator)

Family SES was measured using a NCES-created composite variable based on Wave 1 parent self-report of father's education, mother's education, household income, father's occupational prestige, and mother's occupational prestige (Ingels et al. 2004). The SES composite variable is the mean of the standardized z-scores for each of the five variables. Students residing in a single-parent household have a SES composite score that reflects only that resident parent's education, income, and occupational prestige. Parental occupational prestige was calculated using the 1989 General Social Survey, a widely used, validated, and reliable measure of social class position (Nakao and Treas 1994). The SES composite variable is on a continuous scale that ranges from −1.98 to 2.11, with higher scores indicating higher family SES.

Prior Student Achievement (Moderator)

Student achievement was evaluated using the ELS 2002 standardized test score composite variable. This composite score is the mean of students' standardized mathematics and reading scores (range = 10–90) at Wave 1. Standardized tests were developed by NCES for the ELS 2002 research study, similar to previous standardized tests developed for the National Education Longitudinal Study of 1988.

Table 2 Correlations, means, and standard deviations

Variable	1	2	3	4	5	6	7	8
1. Educational involvement at home (W1)	–							
2. Educational involvement at school (W1)	.15***	–						
3. Educational expectations (W1)	.02*	.14***	–					
4. Academic advice (W1)	.32***	.19***	.19***	–				
5. Grade point average (W2)	−.08***	.16***	.26***	.06***	–			
6. Educational attainment (W4)	−.06***	.18***	.29***	.11***	.55***	–		
7. Family SES (W1)	−.04***	.26***	.26***	.13***	.33***	.38***	–	
8. Composite achievement test score (W1)	−.13***	.14***	.31***	.08***	.56***	.47***	.42***	–
Mean	1.92	0.32	5.41	1.20	4.93	4.48	0.15	50.7
SD	0.76	0.34	1.26	0.55	1.54	1.95	0.68	9.96
N	12,430	12,370	13,100	12,400	13,980	12,530	14,100	15,240

All *ns* rounded to the nearest 10 per NCES requirements. Educational involvement at home, educational involvement at school, educational expectation, and academic advice by parents. Family SES is a composite variable based on base year parental report of father's education, mother's education, family income, father's occupation, and mother's occupation. Student educational attainment reported by student. W1 = 10th grade, W2 = 12th grade, W4 = 8 years post-expected high school graduation

* $p < .05$; ** $p < .01$; *** $p < .001$

Covariates

Student gender (1 = *female*, 0 = *male*), race/ethnicity (dummy codes for African American, Latino, Asian American, and other; White as omitted reference group), and age were included as individual covariates. At the school level, school administrators reported whether the school was public (1 = *yes*, 0 = *no*) as well as the percentage of the total student body that was eligible for the Free- and Reduced-Price Lunch program (range 0–100 %).

Analysis Plan

We conducted a set of hierarchical models to test for the main effects of parents' involvement and the potential moderating role of SES and prior student achievement. In Model 1, we introduced the main effect of the four parental involvement variables along with main effects of our two moderators (family SES and prior student achievement). All potential two-way interactions between each parental involvement indicator and each of our moderators were introduced in Model 2. We introduced all potential three-way interactions between the parental involvement indicators, family SES, and prior achievement in Model 3. We used simple slopes analyses (Aiken and West 1991) to probe all significant three-way interactions and all two-way interactions not subsumed by the significant three-way interactions.

The analyses were conducted in Mplus Version 7.31 (Muthén and Muthén 1998–2015) because of its ability to simultaneously address missing data, incorporate sampling weights, and account for student nesting in schools. The current data set included some missing data; however, the full information maximum likelihood (FIML) method in Mplus was used, allowing data for all cases to be used for model estimations. In longitudinal studies, FIML is a preferred method for generalizing results to the population and using all available data (Enders 2010). All models employed the ELS 2002 longitudinal sampling weight, which accounted for threats to representativeness through differential attrition and oversamples. The current data set contains data clustered within schools, and the (CLUSTER)

procedure was employed to address violations to independence assumptions related to the multilevel nature of the data and produce correctly adjusted standard errors in the model estimations.

Results

We first examined the relations between various aspects of parental involvement (i.e., involvement at home and at school, educational expectations, academic advice in 10th grade) and proximal (i.e., GPA in 12th grade) and distal educational performance (i.e., educational attainment 8 years after expected high school graduation). As shown in Table 3, after taking into account the effects of a host of covariates, higher levels of school-based parental involvement and greater educational expectations were associated with higher cumulative GPAs and greater educational attainment. Higher levels of parental academic advice were associated with greater educational attainment but were unrelated to GPA in 12th grade, and home-based parental involvement was unrelated to either GPA or educational attainment.

In examining the interaction effects, we observed one significant three-way interaction, which involved the conditional links between parents' school-based involvement and students' ultimate attainment by SES and prior achievement. The beta coefficients reflect results from the simple slopes analyses. As shown in Fig. 1, the relation between parents' school-based involvement and students' educational attainment were significantly (and positively) related for all groups. This relation, however, was strongest for high-SES, low-achieving students ($\beta = .12$, $p < .001$) students and low-SES, high-achieving students ($\beta = .09$, $p = .001$), and weakest (albeit still significant) for high-SES, high-achieving students ($\beta = .05$, $p < .01$) and low-SES, low-achieving students ($\beta = .04$, $p < .05$).

In addition to this three-way interaction, we observed a number of two-way interactions that highlighted the conditional effects of family SES or prior achievement on the

Table 3 SES and student achievement as moderators of the relation between parent educational involvement and students' educational outcomes

	Grade point average			Attainment		
	Model 1 *β (SE)*	Model 2 *β (SE)*	Model 3 *β (SE)*	Model 1 *β (SE)*	Model 2 *β (SE)*	Model 3 *β (SE)*
Home involvement	0.00 (.01)	−0.00 (.01)	−0.01 (.01)	−0.02 (.01)	−0.02 (.01)	−0.02 (.01)
School involvement	0.06 (.01)***	0.07 (.01)***	0.08 (.01)***	0.06 (.01)***	0.07 (.01)***	0.08 (.01)***
Educational expectations	0.09 (.01)***	0.11 (.01)***	0.11 (.01)***	0.10 (.01)***	0.12 (.01)***	0.12 (.01)***
Academic advice	−0.01 (.01)	−0.01 (.01)	0.00 (.01)	0.04 (.01)**	0.03 (.01)**	0.03 (.01)**
Family SES	0.09 (.01)***	0.09 (.01)***	0.09 (.01)***	0.19 (.01)***	0.18 (.01)***	0.18 (.01)***
Composite achievement test score	0.44 (.01)***	0.44 (.01)***	0.45 (.01)***	0.31 (.01)***	0.31 (.01)***	0.32 (.01)***
Home involvement-by-SES		−0.01 (.01)	−0.02 (.01)		0.01 (.01)	−0.00 (.01)
School involvement-by-SES		−0.02 (.01)	−0.01 (.01)		−0.00 (.01)	0.01 (.01)
Educational expectations-by-SES		−0.01 (.01)	−0.01 (.01)		0.02 (.01)*	0.03 (.01)*
Academic advice-by-SES		0.01 (.01)	0.02 (.01)		−0.00 (.01)	−0.00 (.01)
Home involvement-by-achieve		0.01 (.01)	0.01 (.01)		−0.01 (.01)	−0.02 (.01)
School involvement-by-achieve		−0.03 (.01)**	−0.03 (.01)*		−0.01 (.01)	−0.01 (.01)
Educational expectations-by-achieve		0.05 (.01)***	0.05 (.01)***		0.03 (.01)**	0.03 (.01)**
Academic advice-by-achieve		0.02 (.01)	0.02 (.01)		0.02 (.01)	0.02 (.01)
Home involve-by-SES-by-achieve			0.01 (.01)			0.02 (.01)
School involve-by-SES-by-achieve			−0.02 (.01)			−0.04 (.01)**
Academic advice-by-SES-by achieve			−0.01 (.01)			0.00 (.01)
Educational expectations-by-SES-by-achieve			−0.02 (.01)			0.01 (.01)

$N = 15{,}240$. Models for each outcome (i.e., grades and attainment) run simultaneously. Models include a comprehensive set of covariates

Parental involvement at W1 (10th grade), grades at W2 (12th grade), and educational attainment at W4 (8 years post-expected high school graduation)

* $p < .05$; ** $p < .01$; *** $p < .001$

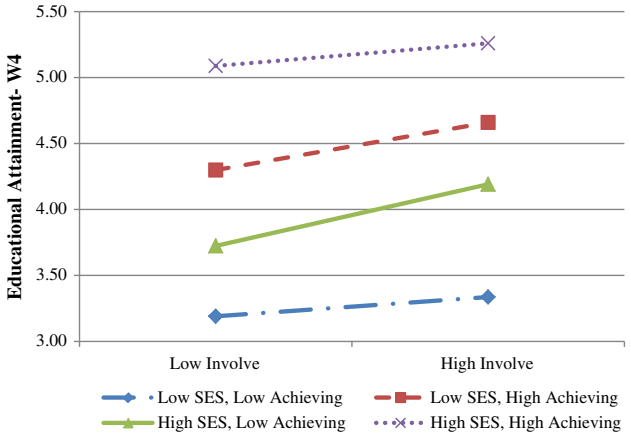


Fig. 1 Relation between parental school-based involvement and student ultimate educational attainment by family SES and prior achievement

central relations of interest. Only the significant two-way interactions not subsumed by the larger significant three-way interaction are discussed. The relation between parents' educational expectations and both GPA and educational attainment were conditioned by students' prior achievement. Simple slopes analyses revealed that the link between parents' educational expectations and cumulative GPA was approximately two times stronger for youth with higher prior achievement (ß = .15, $p < .001$) compared to those with lower prior achievement (ß = . 07, $p < .001$). Similarly, the relation between parent's educational expectations and ultimate educational attainment was double the size for higher (ß = .16, $p < .001$) versus lower-achieving students (ß = .08, $p < .001$). Prior achievement also conditioned the relation between parents' school-based educational involvement and GPA, wherein this association was significantly stronger for lower-achieving students (ß = .12, $p < .001$) than students with higher prior achievement (ß = .03, $p < .01$). Additionally, higher-SES youth reaped greater benefits from parents' educational expectations in relation to ultimate educational attainment (ß = .15 vs .08, $p < .001$, for high-versus low-SES youth, respectively).

Discussion

Although the U.S. has made major strides in improving high school graduation and college attendance rates (Kena et al. 2014), U.S. students' academic performance continues to lag behind their counterparts in many other industrialized nations (OECD 2014). Similarly, although achievement gaps tied to student demographics are narrowing, there still exist a substantial achievement divide between the rich and the poor (Reardon 2011). Parental educational involvement represents a malleable support that could promote young people's educational success in high school and beyond, making it a prime potential candidate for school intervention efforts. In the current study, we investigated the associations between three aspects of parental educational involvement (i.e., home- and school-based involvement, academic socialization) and young people's proximal (i.e., grades) and distal academic outcomes (i.e., educational attainment).

We also placed particular attention on whether these relations varied as a function of family socioeconomic status and/or adolescents' prior achievement either independently or conjointly to better understand whether specific types of parental involvement are particularly beneficial for certain youth. Using data from the Education Longitudinal Study (ELS), we generally observed significant links between parental school-based educational involvement and academic socialization (i.e., educational expectations) and adolescents' grades 2 years later. The links between parental educational involvement and academic outcomes in secondary school observed here are consistent with a host of studies that have examined the influences of both global and type-specific influences of parental educational involvement on academic performance (for reviews, see Fan and Chen 2001; Jeynes 2007; Hill and Tyson 2009).

We, however, extended the lens further to determine the long-term effects of parental involvement (during high school) for young people's ultimate educational attainment, timing not typically considered in existing educational involvement research. Here, we found that greater parental school-based involvement and academic socialization (i.e., expectations, academic advice) were both related to higher educational attainment, above and beyond the effects of a host of relevant covariates. In fact, the size of the educational expectations coefficient was of similar magnitude to family income and gender and was more than double the size of the effects of race/ethnicity (see "Appendix"), all of which are sociodemographic characteristics with well-established links to educational attainment (Everett et al. 2011; McDaniel et al. 2011). That parents' educational involvement continues to exert its influence 10 years later points to the long reach of parental involvement in the lives of young people.

These overall effects, however, masked important variation in the relations of interest. Specifically, the moderation analyses revealed that school-based involvement seemed to be particularly beneficial for more disadvantaged youth (i.e., those with poorer prior achievement, those from lower-SES families), whereas parents' educational expectations, one form of academic socialization, generally seemed particularly potent for the academic success of more advantaged youth (i.e., those from high-

SES families, those with higher prior achievement). Returning to the notion of concerted cultivation, which encompasses the parental educational involvement practices of interest in the current study, can lend useful insights into these findings.

One of the primary means by which concerted cultivation contributes to the educational success of youth is via cultural reproduction, wherein the cultural socialization that children receive in the home provides them with critical social capital (e.g., interpersonal skills and connections, educational practices) that is particularly valued in dominant social institutions such as schools (Bourdieu 1973; Lareau 2003). Cultural reproduction theory suggests that more advantaged youth would benefit most from parental educational involvement, as their parents are best equipped to transmit their cultural and social capital to their offspring. This hypothesis is meted out in our findings related to academic socialization, which was, when operationalized as educational expectations, typically more strongly related to educational success for more advantaged adolescents. In contrast, parents with less education and those whose children are historically performing more poorly in school may engage in a "value stretch," wherein parents downwardly stretch their thresholds for acceptable levels of educational success in an attempt to reconcile their feelings of efficacy in their children's education (McLoyd 1998; Seginer 1983).

School-based involvement, in contrast, does not necessarily require the same social capital, and thus may be less sensitive to cultural reproduction mechanisms. Although lower-SES families may have employment, transportation, or language constraints that limit their ability to participate in school-based activities (Hill and Taylor 2004), school-based activities, such as attending PTA meetings or parent-teacher conferences, often do not require that parents possess specific educational skills. As such, parents may have a greater incentive to engage in these activities and feel more efficacious in doing so. Moreover, the return on parents' investments of time and effort in school-based activities, and the cultural capital transmitted via these efforts, are likely particularly strong for children who are in more disadvantaged positions, whether due to low SES or traditionally low educational achievement, according to the cultural mobility model (DiMaggio 1982; Jæger 2011).

The effects of school-based involvement, however, were not uniform across groups, particularly when examining the intersection with family SES and prior achievement conjointly. Students possessing one, but not both disadvantages (i.e., high achieving but from a low-SES family, low-achieving but from a high-SES family), seemed to reap the most benefits from school-based involvement, particularly in regard to ultimate educational attainment. Life course theory's tenet of accumulating advantages versus disadvantages suggests that early life experiences that promote well-being can set individuals on life course trajectories of continued success. Life course trajectories, however, can be deflected when individuals accumulate setbacks and disadvantages in early life (Elder 1998). Once set in motion, these trajectories are often quite difficult to shift, supporting the findings observed here that those with no disadvantages (high-achieving students with well-educated parents) and those with many disadvantages (low-achieving students with parents with less education) tended to not benefit from parents' school-based involvement.

Although the current study contributes to our understanding of the proximal and distal influences of parental educational involvement on young people's educational success and variations in these relations, some limitations must be noted. First, although we were able to measure the three distinct types of parental educational involvement, our study lacks some depth in measurement, which is common with research using large-scale longitudinal studies. Future work with richer parental involvement data that more comprehensively measures parental involvement and accounts for the potential multidimensional nature of each involvement component is needed to replicate our study findings. Second, the current study focused on one key proximal context of adolescence—families—but we did not examine how the various aspects of parental educational involvement might elicit promotive or disruptive processes in other proximal environments of youth, namely schools and peers. Prior scholarship highlights the important role that teacher and peer support play in the academic success of young people (Klem and Connell 2004; Somers et al. 2008; Benner 2011), and it is likely that parents' educational involvement may promote adolescents' positive views of school, greater teacher involvement in their children's education, and selection of more academically-focused peers. These cross-system (i.e., mesosystem) influences (Bronfenbrenner and Morris 2006) may serve as key mechanisms by which parental involvement promotes achievement and attainment, and this is a key area for future research. These mesosystem effects may also explain, in part, the long-reaching influences of parents' academic socialization on ultimate educational attainment. In addition, more attention should also be placed on the potential bidirectional links between parents and children. Parents likely adjust their involvement based on their children's academic needs (Green et al. 2007), but this variability was not captured in the current study. Future studies that measure both achievement and parental educational involvement across time are needed to conduct advanced statistical models that can better tap into the likely bidirectional nature of these relations.

Conclusion

The current study adds to the mounting evidence of the critical role parental educational involvement plays in the academic lives of youth. The nuanced findings we observed have clear implications for efforts to support young people's educational success. Recent work has documented the promising role of integrating parental involvement strategies into educational interventions (Jeynes 2012; Park and Holloway 2013; Patall et al. 2008). Our study findings suggest that such efforts might be more effective if more strategically targeted. For example, academic supports or interventions with more advantaged students may want to focus particularly on promoting parents' educational expectations and the clear communication of these expectations to their children. In contrast, programs or interventions serving more disadvantaged or academically struggling youth may want to make greater efforts to encourage parents' active involvement in school-based activities.

Additionally, our findings suggest that home-based involvement, including the provision of assistance with homework and school projects, may be less important for promoting academic achievement. Indeed, prior research has observed that increased academic assistance through homework help and other more intrusive parenting techniques, even when elicited by children's academic struggles, can compromise achievement (Pomerantz and Murray-Eaton 2001; Robinson and Harris 2014). However, we also observed a positive main effect of academic advice for young people's ultimate educational attainment, suggesting that a balance of educational supports is needed. Interventions and supports that help parents find the appropriate balance of unobtrusive educational assistance could also be beneficial. Overall, we hope the findings reported here spur new research investigating the characteristics and activities of schools, teachers, and administrators that better elicit or impede parental educational involvement and the most effective strategies for promoting the academic success of all young people.

Acknowledgments The authors acknowledge the support of funding from the William T. Grant Foundation to Aprile Benner and from the National Institute of Child Health and Human Development to the Population Research Center, University of Texas at Austin (R24 HD42849). Opinions reflect those of the authors and not necessarily those of the granting agencies.

Author Contributions ADB conceived of and participated in the design of the study, supervised the data analysis and interpretation of the data, and drafted the manuscript. AEB performed the statistical analyses, participated in the interpretation of the data, and drafted the manuscript. SS conceived of the study and participated in its design. All authors read and approved the final manuscript.

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with human participants performed by any of the authors.

Informed Consent Informed consent was obtained by the NCES from all individual participants included in the study.

Appendix

Parental educational involvement and control variable effects on academic outcomes

	Grades β (*SE*)	Educational attainment β (*SE*)
Home involvement	−0.00 (.01)	−0.02 (.01)
School involvement	0.06 (.01)***	0.06 (.01)***
Educational expectations	0.09 (.01)***	0.10 (.01)***
Academic advice	−0.01 (.01)	0.04 (.01)***
Family SES	0.09 (.01)***	0.19 (.01)***
Composite achievement test score	0.44 (.01)***	0.31 (.01)***
Female	0.16 (.01)***	0.11 (.01)***
Asian American	0.02 (.00)**	0.05 (.01)***
African American	−0.14 (.01)***	−0.01 (.01)
Latino	−0.09 (.01)***	−0.01 (.01)
Other race/ethnicity	−0.04 (.01)***	−0.02 (.01)*
Age	−0.08 (.01)***	−0.06 (.01)***
School sector	−0.00 (.01)	−0.04 (.01)***
Free/reduced-priced lunch	0.06 (.02)***	−0.03 (.01)**

Parental involvement and covariates measured at W1 (10th grade), grades at W2 (12th grade), and educational attainment at W4 (8 years post-expected high school)

* $p < .05$; ** $p < .01$; *** $p < .001$

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park: Sage.

Anderson, K. J., & Minke, K. M. (2007). Parent involvement in education: Toward an understanding of parents' decision making. *The Journal of Educational Research, 100*, 311–323. doi:10.3200/JOER.100.5.311-323.

Benner, A. D. (2011). Latino adolescents' loneliness, academic performance, and the buffering nature of friendships. *Journal of Youth and Adolescence, 40*, 556–567. doi:10.1007/s10964-010-9561-2.

Bourdieu, P. (1973). Cultural reproduction and social reproduction. In R. Brown (Ed.), *Knowledge, education, and cultural change* (pp. 71–112). London: Tavistock.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In R. M. Lerner & W. Damon (Eds.),

Handbook of child psychology: Vol 1, Theoretical models of human development (6th ed., pp. 793–828). Hoboken, NJ: Wiley.

Carolan, B. V., & Wasserman, S. J. (2015). Does parenting style matter? Concerted cultivation, educational expectations, and the transmission of educational advantage. *Sociological Perspectives, 58*, 168–186. doi:10.1177/0731121414562967.

Cheadle, J. E., & Amato, P. R. (2011). A quantitative assessment of Lareau's qualitative conclusions about class, race, and parenting. *Journal of Family Issues, 32*, 679–706. doi:10.1177/0192513X10386305.

Cheung, C., & Pomerantz, E. M. (2011). Parents' involvement in children's learning in the United States and China: Implications for children's academic and emotional adjustment. *Child Development, 82*, 932–950. doi:10.1111/j.1467-8624.2011.01582.x.

Crosnoe, R., & Huston, A. C. (2007). Socioeconomic status, schooling, and the developmental trajectories of adolescents. *Developmental Psychology, 43*, 1097–1110. doi:10.1037/0012-1649.43.5.1097.

Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19*, 294–304. doi:10.1037/0893-3200.19.2.294.

DiMaggio, P. (1982). Cultural capital and school success: The impact of status culture participation on the grades of U.S. high school students. *American Sociological Review, 47*, 189–201.

Dumais, S. A., Kessinger, R. J., & Ghosh, B. (2012). Concerted cultivation and teachers' evaluations of students: Exploring the intersection of race and parents' educational attainment. *Sociological Perspectives, 55*, 17–42. doi:10.1525/sop.2012.55.1.17.

Elder, G. H., Jr. (1998). The life course and human development. In R. E. Lerner (Ed.), *Volume 1: Theories of human development: Contemporary perspectives* in William Damon (editor-in-chief), *The handbook of child psychology* (5th ed.), (pp. 939–991). New York: Wiley.

Enders, C. K. (2010). *Applied missing data analysis*. New York, NY: Guilford Press.

Englund, M. M., Luckner, A. E., Whaley, G. J. L., & Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology, 96*, 723–730. doi:10.1037/0022-0663.96.4.723.

Epstein, J. L. (1987). Parent involvement: What research says to administrators. *Education and Urban Society, 19*, 119–136.

Everett, B. G., Rogers, R. G., Hummer, R. A., & Krueger, P. M. (2011). Trends in educational attainment by race/ethnicity, nativity, and sex in the United States, 1989–2005. *Ethnic and Racial Studies, 34*, 1543–1566. doi:10.1080/01419870.2010.543139.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review, 13*, 1–22. doi:10.1023/A:1009048817385.

Fry, R. (2013, September 24). *The growing economic clout of the college educated*. Retrieved July 28, 2015, from http://www.pewresearch.org/fact-tank/2013/09/24/the-growing-economic-clout-of-the-college-educated/.

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler, H. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology, 99*, 532–544. doi:10.1037/0022-0663.99.3.532.

Greenman, E., Bodovski, K., & Reed, K. (2011). Neighborhood characteristics, parental practices and children's math achievement in elementary school. *Social Science Research, 40*, 1434–1444. doi:10.1016/j.ssresearch.2011.04.007.

Gutman, L. M., & Midgley, C. (2000). The role of protective factors in supporting the academic achievement of poor African American students during the middle school transition. *Journal of Youth and Adolescence, 29*, 223–248. doi:10.1023/A:1005108700243.

Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development, 75*, 1491–1509. doi:10.1111/j.1467-8624.2004.00753.x.

Hill, N. E., & Taylor, L. C. (2004). Parental school involvement and children's academic achievement: Pragmatics and issues. *Current Directions in Psychological Science, 13*, 161–164. doi:10.1111/j.0963-7214.2004.00298.x.

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45*, 740–763. doi:10.1037/a0015362.

Huston, A. C., & Bentley, A. C. (2010). Human development in societal context. *Annual Review of Psychology, 61*, 411–437. doi:10.1146/annurev.psych.093008.100442.

Ingels, S. J., Planty, M., & Bozick, R. (2005). *A profile of the American High School Senior in 2004: A first look—Initial results from the first follow-up of the Education Longitudinal Study of 2002 (ELS:2002) (NCES 2006–348)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Ingels, S. J., Pratt, D. J., Alexander, C. P., Jewell, D. M., Lauff, E., Mattox, T. L., & Wilson, D. (2014). *Education Longitudinal Study of 2002 Third Follow-up Data File Documentation (NCES 2014-364)*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Ingels, S. J., Pratt, D. J., Rogers, J. E., Siegel, P. H., & Stutts, E. S. (2004). *Education Longitudinal Study of 2002: Base Year Data File User's Manual (NCES 2004-405)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Institute of Medicine. (2014). *Investing in the health and well-being of young adults*. Washington, DC: The National Academies Press.

Izzo, C. V., Weissberg, R. P., Kasprow, W. J., & Fendrich, M. (1999). A longitudinal assessment of teacher perceptions of parent involvement in children's education and school performance. *American Journal of Community Psychology, 27*(6), 817–839. doi:10.1023/A:1022262625984.

Jæger, M. M. (2011). Does cultural capital really affect academic achievement? New evidence from combined sibling and panel data. *Sociology of Education, 84*, 281–298. doi:10.1177/0038040711417010.

Jeynes, W. H. (2003). A meta-analysis: The effects of parental involvement on minority children's academic achievement. *Education and Urban Society, 35*, 202–218. doi:10.1177/0013124502239392.

Jeynes, W. H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education, 40*, 237–269. doi:10.1177/0042085905274540.

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement. *Urban Education, 42*, 82–110. doi:10.1177/0042085906293818.

Jeynes, W. H. (2012). A meta-analysis of the efficacy of different types of parental involvement programs for urban students. *Urban Education, 47*, 706–742. doi:10.1177/0042085912445643.

Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., et al. (2014). *The condition of education 2014 (NCES 2014-083)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Kim, D. H., & Schneider, B. (2005). Social capital in action: Alignment of parental support in adolescents' transition to postsecondary education. *Social Forces, 84*, 1181–1206.

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*, 262–273. doi:10.1111/j.1746-1561.2004.tb08283.x.

Lareau, A. (2003). *Unequal childhoods: Class, race and family life*. Berkeley, CA: University of California.

Lee, V. E., & Croninger, R. G. (1994). The relative importance of home and school in the development of literacy skills for middle-grade students. *American Journal of Education, 102*, 286–329. doi:10.1086/444071.

McDaniel, A., DiPrete, T. A., Buchmann, C., & Shwed, U. (2011). The black gender gap in educational attainment: Historical trends and racial comparisons. *Demography, 48*, 889–914. doi:10.1007/s13524-011-0037-0.

McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185–204. doi:10.1037/0003-066X.53.2.185.

Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Nakao, K., & Treas, J. (1994). Updating occupational prestige and socioeconomic scores: How the new measures measure up. *Sociological Methodology, 24*, 1–72. doi:10.2307/270978.

OECD. (2014). *PISA 2012 Results: What students know and can do—Student performance in mathematics, reading and science* (Vol. I, Revised edition, February 2014), PISA, OECD Publishing. doi:10.1787/9789264201118-en.

Park, S., & Holloway, S. D. (2013). No parent left behind: Predicting parental involvement in adolescents' education within a sociodemographically diverse population. *Journal of Educational Research, 106*, 105–119. doi:10.1080/00220671.2012.667012.

Patall, E. A., Cooper, H., & Robinson, J. C. (2008). Parent involvement in homework: A research synthesis. *Review of Educational Research, 78*, 1039–1101. doi:10.3102/0034654308325185.

Pomerantz, E. M., & Eaton, M. M. (2001). Maternal intrusive support in the academic context: Transactional socialization processes. *Developmental Psychology, 37*(2), 174–186. doi:10.1037/0012-1649.37.2.174.

Reardon, S. F. (2011). The widening academic-achievement gap between the rich and the poor: New evidence and possible explanations. In R. M. Murname & G. J. Duncan (Eds.), *Whither opportunity: Rising inequality, schools, and children's life changes* (pp. 91–116). Washington, DC: Brookings Institute.

Reynolds, J. R., & Johnson, M. K. (2011). Change in the stratification of educational expectations and their realization. *Social Forces, 90*, 85–109. doi:10.1093/sf/90.1.85.

Robinson, K., & Harris, A. L. (2014). *The broken compass: Parental involvement with children's education*. Cambridge, MA: Harvard University Press.

Roksa, J., & Potter, D. (2011). Parenting and academic achievement: Intergenerational transmission of educational advantage. *Sociology of Education, 84*, 299–321. doi:10.1177/0038040711417013.

Rothstein, R. (2004). *Class and schools: Using social, economic, and educational reform to close the achievement gap*. Washington, DC: Economic Policy Institute.

Seginer, R. (1983). Parents' educational expectations and children's academic achievements: A literature review. *Merrill-Palmer Quarterly, 29*, 1–23.

Seginer, R. (2006). Parents' educational involvement: A developmental ecology perspective. *Parenting: Science and Practice, 6*, 1–48. doi:10.1207/s15327922par0601_1.

Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research, 75*, 417–453. doi:10.3102/00346543075003417.

Snyder, T. D., & Dillow, S. A. (2013). *Digest of education statistics 2012 (NCES 2014-015)*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Snyder, T. D., Dillow, S. A., & Hoffman, C. M. (2008). *Digest of education statistics 2007 (NCES 2008-022)*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Somers, C. L., Owens, D., & Piliawsky, M. (2008). Individual and social factors related to urban African American adolescents' school performance. *The High School Journal, 91*, 1–11. doi:10.1353/hsj.2008.0004.

The White House, Office of the Press Secretary. (2013). *FACT SHEET on the President's plan to make college more affordable: A better bargain for the middle class [Press release]*. Retrieved July 28, 2015, from https://www.whitehouse.gov/the-press-office/2013/08/22/fact-sheet-president-s-plan-make-college-more-affordable-better-bargain.

Wang, M., & Sheikh-Khalil, S. (2014). Does parental involvement matter for student achievement and mental health in high school? *Child Development, 85*, 610–625. doi:10.1111/cdev.12153.

Woolley, M. E., & Grogan-Kaylor, A. (2006). Protective family factors in the context of neighborhood: Promoting positive school outcomes. *Family Relations, 55*, 93–104. doi:10.1111/j.1741-3729.2006.00359.x.

Zhan, M., & Sherraden, M. (2011). Assets and liabilities, educational expectations, and children's college degree attainment. *Children and Youth Services Review, 33*, 846–854. doi:10.1016/j.childyouth.2010.12.006.

Aprile D. Benner is an assistant professor in the Department of Human Development and Family Sciences at the University of Texas at Austin. She received her Ph.D. in Education at the University of California, Los Angeles. Her research interests center on race/ethnicity and social class as developmental contexts and the influence of multiple and shifting ecological contexts in young people's lives.

Alaina E. Boyle is a graduate student in the Department of Human Development and Family Sciences at the University of Texas at Austin. Her research focuses on how children navigate important transition periods and how that influences self-constructs, socioemotional competencies, and educational performance.

Sydney Sadler graduated from the Department of Human Development and Family Sciences undergraduate program at the University of Texas at Austin. Her research focused on the role that teacher social support, parental involvement, SES, and achievement played for adolescents' school engagement.

Journal of Youth & Adolescence is a copyright of Springer, 2016. All Rights Reserved.

J Youth Adolescence (2016) 45:1053–1064
DOI 10.1007/s10964-016-0431-4

EMPIRICAL RESEARCH

Parental Involvement and Adolescents' Educational Success: The Roles of Prior Achievement and Socioeconomic Status

Aprile D. Benner[1] · **Alaina E. Boyle**[1] · **Sydney Sadler**[1]

Received: 10 December 2015 / Accepted: 30 January 2016 / Published online: 5 February 2016
© Springer Science+Business Media New York 2016

Abstract Parental educational involvement in primary and secondary school is strongly linked to students' academic success; however; less is known about the long-term effects of parental involvement. In this study, we investigated the associations between four aspects of parents' educational involvement (i.e., home- and school-based involvement, educational expectations, academic advice) and young people's proximal (i.e., grades) and distal academic outcomes (i.e., educational attainment). Attention was also placed on whether these relations varied as a function of family socioeconomic status or adolescents' prior achievement. The data were drawn from 15,240 10th grade students (50 % females; 57 % White, 13 % African American, 15 % Latino, 9 % Asian American, and 6 % other race/ethnicity) participating in the Education Longitudinal Study of 2002. We observed significant links between both school-based involvement and parental educational expectations and adolescents' cumulative high school grades and educational attainment. Moderation analyses revealed that school-based involvement seemed to be particularly beneficial for more disadvantaged youth (i.e., those from low-SES families, those with poorer prior achievement), whereas parents' academic socialization seemed to better promote the academic success of more advantaged youth (i.e., those from high-SES families, those with higher prior achievement). These findings suggest that academic interventions and supports could be carefully targeted to better support the educational success of all young people.

Keywords Parental educational involvement · Academic achievement · Educational attainment · Socioeconomic status

Introduction

American youth have made major strides in progressing farther along the education pipeline in recent years. High school dropout rates are at an all-time low, and high school completion, college enrollment, and bachelor's degree attainment have steadily increased over the last 40 years (Snyder et al. 2008; Snyder and Dillow 2013). Despite this democratization of educational opportunity, educational stratification remains an undisputable fact in the U.S. Socioeconomic disparities are ever-present in both K-12 school quality and in young people's postsecondary enrollment and persistence (Rothstein 2004; Kena et al. 2014); moreover, the educational and economic mobility of American youth is strongly linked to the educational success of their parents (Reynolds and Johnson 2011). Promoting educational attainment is a key national priority (The White House 2013), as the earnings gap between those who attain a bachelor's degree or higher versus those with a high school diploma or less have widened substantially over the past two decades (Fry 2013). Lower levels of educational attainment have also been linked to poorer health and wealth prospects across the life course, including higher rates of drug use and incarceration, greater unemployment and underemployment, and more health problems (Institute of Medicine 2014).

Exactly how to best promote the educational success of all children and adolescents has received extensive

✉ Aprile D. Benner
abenner@prc.utexas.edu

[1] Department of Human Development and Family Sciences, University of Texas at Austin, 1 University Station Stop A2702, Austin, TX 78712, USA

attention. One promising avenue for improving young people's educational prospects is parental educational involvement, or parents' active participation in the educational lives of their children, as such involvement has been linked to stronger academic outcomes for youth (Jeynes 2007; Hill and Tyson 2009; Zhan and Sherraden 2011). The associations between parental educational involvement and youth educational outcomes, however, appear to vary both by type of involvement (Fan and Chen 2001; Hill and Tyson 2009) and by SES (Hill et al. 2004).

In the current study, we sought to unpack this variability using nationally-representative, longitudinal data from high school students. Specifically, we investigated the links between parent educational involvement—including parents' home-based and school-based involvement and their academic socialization—and young people's academic performance and ultimate educational attainment. We placed particular attention on the extent to which students' socioeconomic status and prior achievement levels independently and conjointly conditioned the primary relations of interest. That is, we sought to determine whether the links between educational involvement and academic outcomes were stronger or weaker for more versus less affluent youth or those with higher versus lower levels of prior academic achievement. Such work can elucidate the value of educational interventions targeting parental involvement and suggest the extent to which such efforts could be more or less effective if targeted to certain aspects of parental involvement or specific student populations.

Parental Involvement and Adolescents' Educational Success

Parental educational involvement is a multifaceted construct that encompasses parents' educational involvement at home and at school as well as parents' academic socialization (Epstein 1987; Fan and Chen 2001; Hill and Tyson 2009). Home-based involvement includes any activities parents implement in the home that reinforce school-based learning, including monitoring homework completion, checking homework, and educational enrichment activities. School-based involvement entails parents' active involvement in the school setting through activities such as participating in school organizations, volunteering in the school, or communicating with teachers during parent-teacher conferences or other on-campus activities. Academic socialization encompasses indirect messages about school that communicate parents' educational expectations for the child and their views around the importance of education as well as the more concrete discussions in which parents directly promote the development of their children's future educational and occupational plans. Academic socialization allows parents to give their children the tools necessary for independence and educational success (Hill and Tyson 2009).

All three aspects of parental educational involvement are positively linked to students' academic success, including higher grades in school, better scores on achievement tests, greater school engagement, and grade promotion (Lee and Croninger 1994; Gutman and Midgley 2000; Fan and Chen 2001; Jeynes 2005, 2007; Seginer 2006; Woolley and Grogan-Kaylor 2006; Cheung and Pomerantz 2011). Meta-analysis work, however, suggests differential effects for the types of parental educational involvement (Hill and Tyson 2009). Academic socialization, for example, seems to be most strongly related to student achievement. School-based involvement is also positively related to achievement, but with weaker effects. Home-based involvement is more variable, such that enrichment activities tend to promote achievement, whereas homework help seems to be negatively related to academic outcomes. The more distal educational effects of parental involvement remain unknown, including whether parents' involvement in their children's education during secondary school promotes young people's ultimate educational attainment, a focus of the current study.

Potential Variation in the Link Between Involvement and Academic Outcomes

Well-documented differences exist in the links between socioeconomic status (SES) and both parental educational involvement and young people's academic outcomes, with differences generally reflecting the challenges and stressors that accompany inadequate family income and economic stress. Low-income parents and less educated parents are more likely to express lower educational expectations for their children compared to more affluent parents (Davis-Kean 2005; Carolan and Wasserman 2015). They are also less likely, on average, to be involved in their children's education, both at home and at school (Cheadle and Amato 2011; Roksa and Potter 2011). Similarly, family social background is also linked to children and adolescents' school performance and achievement, wherein young people reared in more affluent families generally outperform their less-affluent peers on every standard measure of academic achievement and engagement (Huston and Bentley 2010; Reardon 2011; Sirin 2005).

In addition to these well-established mean-level differences, there is some evidence that the relations between parental educational involvement and young people's academic outcomes may be conditioned by various aspects of family SES. For example, the links between both parental home-based involvement and parents' academic socialization and student engagement appear stronger for low-SES youth as compared to their more affluent peers

(Wang and Sheikh-Khalil 2014). Similarly, children from lower SES backgrounds seem to benefit more academically (both in reading and math achievement) from parents' engagement in home-based involvement activities, such as visiting a museum or attending a concert (Roksa and Potter 2011). This is consistent with Lareau's (2003) findings around concerted cultivation, which suggest that children from less affluent homes likely benefit most from parents' engagement in concerted cultivation, or a "deliberate and sustained effort to stimulate children's development and to cultivate their cognitive and social skills" (p. 238).

Concerted cultivation is highly relevant for the current study, as it generally encompasses all three aspects of parental educational involvement. Although some subsequent work has provided additional validation of the notion that concerted cultivation is particularly potent for those at the lower end of the SES spectrum (Greenman et al. 2011; Jæger 2011), other research has shown that concerted cultivation is related to the math and reading achievement of children from higher but not lower social classes (Roksa and Potter 2011). Consistent with this latter finding, in a study of African American families, parents' school-based involvement was positively linked to children's approaches to learning in families with college-educated parents; these links were non-significant in African American families where the highest parent education was a high school diploma (Dumais et al. 2012).

It is clear that the limited literature base on potential variation in the relations between parental educational involvement and achievement by SES is inconsistent, and we suggest that these inconsistencies may be driven, at least in part, by personal characteristics of the adolescent. Both bioecological (Bronfenbrenner and Morris 2006) and life course theories (Elder 1998) suggest that characteristics of the developing child can elicit responses from their proximal contexts that can promote either accumulating advantages or disadvantages. As such, although sociodemographic markers such as parents' education levels may constrain the levels or amounts of educational involvement parents are able to provide and the effects of such involvement, other characteristics of the child, such as their prior achievement levels, may encourage parents with less propensity to be involved to actually engage in more educational involvement activities to the greater benefit of their children.

Consistent with this hypothesis, Englund et al. (2004) found that children who were academically successful early in school had higher parent expectations than children who were performing worse academically, and these differences persisted across elementary school. Although more tangential to the focus of the current study, Crosnoe and Huston (2007) examined the intersection of adolescents' developmental characteristics (personal control, or adolescents' feelings that their plans and successes were within versus outside of their control), parents' academic socialization (i.e., adolescents' and parents' discussions around course-taking decisions), and family SES and the implications for students' achievement. They observed that students at the lowest SES quartile were negatively affected by the most maldaptive combinations of personal control and parental involvement (e.g., low feelings of personal control with very high levels of parent academic socialization), whereas those at the highest SES quartile were unaffected by these maladaptive combinations. In the current study, we seek to determine whether the links between educational involvement and academic outcomes are influenced conjointly by family SES and young people's prior achievement. We do so using a comprehensive measure of family SES, which accounts for parental education, occupational prestige, and family income, and a multidimensional operationalization of parental educational involvement that encompasses home- and school-based involvement and academic socialization, both of which represent key contributions of the current study.

The Current Study

We used the Education Longitudinal Study of 2002 (ELS) to examine the links between parental educational involvement and young people's academic progress across the early life course and potential variation by key moderators. Specifically, we posed two research questions. First, to what extent are the three aspects of parents' educational involvement (i.e., involvement at home, involvement at school, academic socialization) related to proximal (i.e., grades) and distal indicators (educational attainment) of young people's educational success? Consistent with prior meta-analytic results (Fan and Chen 2001; Hill and Tyson 2009; Jeynes 2003, 2007), we expected each aspect of parental educational involvement to be positively linked to educational outcomes. Moreover, we hypothesized that the links between academic socialization (i.e., parents' educational expectations and academic advice) and youth outcomes would be stronger than effects of parental involvement at home or at school. We extended the extant literature base by examining both the more immediate and longer-term implications of parents' involvement for young people's movement through the educational pipeline.

Second, we asked to what extent do family SES and students' prior achievement independently and conjointly condition (i.e., moderate) the effects of parental educational involvement on future academic outcomes? Given that prior work suggests the particular stability of affluent, high-achieving students' educational trajectories and the heightened sensitivity of lower-income students to

educational supports (Lareau 2003), we hypothesized that the links between parental educational involvement and academic outcomes would be a) more attenuated in high-SES families, particularly when adolescents were high-achieving and b) stronger in low-SES families regardless of student prior achievement level.

In the current study, we purposefully focused on parents' educational involvement during high school. Although this time in the life course is associated with increased autonomy and individuation, adolescents are making educational decisions that will influence their subsequent life course trajectories, and there is continued evidence that parents play a critical role at this juncture (Kim and Schneider 2005). Moreover, parents' educational involvement typically declines as students move through the K-12 system (Hill and Tyson 2009; Izzo et al. 1999). Yet if empirical work can document a persistent positive effect of parental involvement for older adolescents' school achievement and ultimate educational attainment, then this will suggest that high school policies and interventions should specifically target methods for heightening parental involvement, as they must compensate for the natural declines observed over time.

Methods

Data Source

The data were drawn from the Education Longitudinal Study (ELS), a multi-site, longitudinal sample of high school students, parents, and school personnel conducted by the National Center for Education Statistics (NCES; full procedures described in Ingels et al. 2004, 2005, 2014). The ELS is a nationally representative study exploring the influence of parental, school, student, and community factors for young people's academic trajectories across high school and into postsecondary education and employment. Data collection began in 2002 with students enrolled in 10th grade (Wave 1). The ELS used a two-stage sampling design, applying a stratified probability proportional to size criterion, resulting in a sample of 15,362 10th grade students in 752 schools at Wave 1 (Ingels et al. 2004). In Wave 1, student data were collected primarily at schools in a group setting, and parent, teacher, and administrative surveys were also conducted. Follow-up surveys were conducted with participants at the 12th grade year (2004; Wave 2) as well as in 2006 (Wave 3) and 2012 (Wave 4). These subsequent data collections focused primarily on student participants. We utilized parent data from Wave 1, as well as student and school records data from Waves 2 and 4.

Participants

Our analysis sample was comprised of 15,240 students ($M_{age} = 16.46$ years, $SD = 0.63$) from 752 schools who had any valid Wave 1 data. Schools were eligible to participate in the ELS study if they had spring-term 10th graders enrolled in 2002 and were located in the U.S. There were 1221 schools that were eligible for participation, and of those, 752 schools set a Survey Day (i.e., students completed data collection). All spring term 2002 sophomores in the targeted schools were eligible for the study, except for foreign exchange students. Students were not excluded categorically (e.g., because of limited English proficiency, special education services, or disabilities), but rather on a case-by-case (individual) basis (Ingels et al. 2004). Adolescents that were ineligible to complete the base year questionnaire were excluded from the current study ($N = 118$). The sample was 50 % female and racially/ethnically diverse (13 % African American, 15 % Latino, 9 % Asian American, 57 % White). At recruitment, students resided in families that had an average household income of $35,001–$50,000, and the average education level of participants' parents corresponded to having some postsecondary education but not a 4-year degree ($M = 4.5$, $SD = 2.09$). Table 1 provides descriptive information on the study participants.

Measures

Data for the current study were drawn from surveys of students, parents, and school records. Bivariate correlations and descriptive statistics appear in Table 2 for the central constructs of interest.

Parental Involvement

Parents self-reported three types of educational involvement—involvement at home, involvement at school, and academic socialization at Wave 1 (10th grade). For home-based educational involvement, parents completed two items rating how often they helped the target child with homework or school projects (e.g., check your tenth grader has completed all homework) over the past year on a four-point scale (1 = *never*, 4 = *frequently/always*). Higher mean scores indicated higher levels of parental home involvement ($r = .23$, $p < .001$). Parents' educational involvement at school was assessed using parents' response of "yes" or "no" to four items concerning parental participation in school activities that academic year. Example items include, "belong to the school's parent-teacher organization" and "act as a volunteer at the school." Higher mean scores represent a higher proportion of

Table 1 Demographic characteristics of sample

Variable	*N*	Frequency (%)	*M*	*SD*
Student gender				
Male	7580	49.7		
Female	7670	50.3		
Student race/ethnicity				
White	8680	57.0		
African American	2020	13.3		
Latino	2220	14.5		
Asian American	1400	9.2		
Other race/ethnicity	930	6.1		
Student age	15,190		16.46	0.63
Parent income	15,240		9.06	2.42
Parent education	15,240		4.51	2.09
SES composite	14,100		0.19	0.68
School sector				
Public	10,400	69.7		
Private	4510	30.3		
% Total of student body eligible for free and reduced lunch			23.48	24.84

Total possible $N = 15{,}240$. All *ns* rounded to the nearest 10 per NCES requirements. For parent education, mean corresponds to between a 2-year degree and some 4-year college experience without a degree. For parent income, mean corresponds to $35,001–$50,000

school-based activities in which parents participated. We included two aspects of parents' academic socialization. Parents completed four items on the provision of academic advice or information (e.g., "selecting courses or programs at school," "applying to college or other schools after high school") that they or their partners provided to the focal adolescent. Items were rated on a three-point scale (0 = *never*, 1 = *sometimes*, 2 = *often*), and higher mean scores indicated greater provision of academic advice (Cronbach's $\alpha = 0.74$). Parent's educational expectations were measured by parents' reports of how far they expected their adolescent to go in their education, ranging from 1 (*less than a high school degree*) to 7 (*PhD, MD, or other advanced degree*).

Student Grade Point Average

Student proximal school achievement was determined using cumulative high school grade point average (GPA) from the 12th grade school transcripts (Wave 2). Students' unweighted GPAs were categorized by NCES using an 8-point scale (0 = 0.00–0.50, 8 = 3.51–4.00).

Student Educational Attainment

Student participants self-reported on their highest level of completed education at the Wave 4 follow up in 2012 (approximately 8 years after their expected high school graduation). Student education level was measured on 10-point scale (1 = *didn't finish high school*, 10 = *completed PhD, MD, other advanced degree*).

Socioeconomic Status (Moderator)

Family SES was measured using a NCES-created composite variable based on Wave 1 parent self-report of father's education, mother's education, household income, father's occupational prestige, and mother's occupational prestige (Ingels et al. 2004). The SES composite variable is the mean of the standardized z-scores for each of the five variables. Students residing in a single-parent household have a SES composite score that reflects only that resident parent's education, income, and occupational prestige. Parental occupational prestige was calculated using the 1989 General Social Survey, a widely used, validated, and reliable measure of social class position (Nakao and Treas 1994). The SES composite variable is on a continuous scale that ranges from −1.98 to 2.11, with higher scores indicating higher family SES.

Prior Student Achievement (Moderator)

Student achievement was evaluated using the ELS 2002 standardized test score composite variable. This composite score is the mean of students' standardized mathematics and reading scores (range = 10–90) at Wave 1. Standardized tests were developed by NCES for the ELS 2002 research study, similar to previous standardized tests developed for the National Education Longitudinal Study of 1988.

Table 2 Correlations, means, and standard deviations

Variable	1	2	3	4	5	6	7	8
1. Educational involvement at home (W1)	–							
2. Educational involvement at school (W1)	.15***	–						
3. Educational expectations (W1)	.02*	.14***	–					
4. Academic advice (W1)	.32***	.19***	.19***	–				
5. Grade point average (W2)	−.08***	.16***	.26***	.06***	–			
6. Educational attainment (W4)	−.06***	.18***	.29***	.11***	.55***	–		
7. Family SES (W1)	−.04***	.26***	.26***	.13***	.33***	.38***	–	
8. Composite achievement test score (W1)	−.13***	.14***	.31***	.08***	.56***	.47***	.42***	–
Mean	1.92	0.32	5.41	1.20	4.93	4.48	0.15	50.7
SD	0.76	0.34	1.26	0.55	1.54	1.95	0.68	9.96
N	12,430	12,370	13,100	12,400	13,980	12,530	14,100	15,240

All *ns* rounded to the nearest 10 per NCES requirements. Educational involvement at home, educational involvement at school, educational expectation, and academic advice by parents. Family SES is a composite variable based on base year parental report of father's education, mother's education, family income, father's occupation, and mother's occupation. Student educational attainment reported by student. W1 = 10th grade, W2 = 12th grade, W4 = 8 years post-expected high school graduation

* $p < .05$; ** $p < .01$; *** $p < .001$

Covariates

Student gender (1 = *female*, 0 = *male*), race/ethnicity (dummy codes for African American, Latino, Asian American, and other; White as omitted reference group), and age were included as individual covariates. At the school level, school administrators reported whether the school was public (1 = *yes*, 0 = *no*) as well as the percentage of the total student body that was eligible for the Free- and Reduced-Price Lunch program (range 0–100 %).

Analysis Plan

We conducted a set of hierarchical models to test for the main effects of parents' involvement and the potential moderating role of SES and prior student achievement. In Model 1, we introduced the main effect of the four parental involvement variables along with main effects of our two moderators (family SES and prior student achievement). All potential two-way interactions between each parental involvement indicator and each of our moderators were introduced in Model 2. We introduced all potential three-way interactions between the parental involvement indicators, family SES, and prior achievement in Model 3. We used simple slopes analyses (Aiken and West 1991) to probe all significant three-way interactions and all two-way interactions not subsumed by the significant three-way interactions.

The analyses were conducted in Mplus Version 7.31 (Muthén and Muthén 1998–2015) because of its ability to simultaneously address missing data, incorporate sampling weights, and account for student nesting in schools. The current data set included some missing data; however, the full information maximum likelihood (FIML) method in Mplus was used, allowing data for all cases to be used for model estimations. In longitudinal studies, FIML is a preferred method for generalizing results to the population and using all available data (Enders 2010). All models employed the ELS 2002 longitudinal sampling weight, which accounted for threats to representativeness through differential attrition and oversamples. The current data set contains data clustered within schools, and the (CLUSTER)

procedure was employed to address violations to independence assumptions related to the multilevel nature of the data and produce correctly adjusted standard errors in the model estimations.

Results

We first examined the relations between various aspects of parental involvement (i.e., involvement at home and at school, educational expectations, academic advice in 10th grade) and proximal (i.e., GPA in 12th grade) and distal educational performance (i.e., educational attainment 8 years after expected high school graduation). As shown in Table 3, after taking into account the effects of a host of covariates, higher levels of school-based parental involvement and greater educational expectations were associated with higher cumulative GPAs and greater educational attainment. Higher levels of parental academic advice were associated with greater educational attainment but were unrelated to GPA in 12th grade, and home-based parental involvement was unrelated to either GPA or educational attainment.

In examining the interaction effects, we observed one significant three-way interaction, which involved the conditional links between parents' school-based involvement and students' ultimate attainment by SES and prior achievement. The beta coefficients reflect results from the simple slopes analyses. As shown in Fig. 1, the relation between parents' school-based involvement and students' educational attainment were significantly (and positively) related for all groups. This relation, however, was strongest for high-SES, low-achieving students ($\beta = .12$, $p < .001$) students and low-SES, high-achieving students ($\beta = .09$, $p = .001$), and weakest (albeit still significant) for high-SES, high-achieving students ($\beta = .05$, $p < .01$) and low-SES, low-achieving students ($\beta = .04$, $p < .05$).

In addition to this three-way interaction, we observed a number of two-way interactions that highlighted the conditional effects of family SES or prior achievement on the

Table 3 SES and student achievement as moderators of the relation between parent educational involvement and students' educational outcomes

	Grade point average			Attainment		
	Model 1 *β (SE)*	Model 2 *β (SE)*	Model 3 *β (SE)*	Model 1 *β (SE)*	Model 2 *β (SE)*	Model 3 *β (SE)*
Home involvement	0.00 (.01)	−0.00 (.01)	−0.01 (.01)	−0.02 (.01)	−0.02 (.01)	−0.02 (.01)
School involvement	0.06 (.01)***	0.07 (.01)***	0.08 (.01)***	0.06 (.01)***	0.07 (.01)***	0.08 (.01)***
Educational expectations	0.09 (.01)***	0.11 (.01)***	0.11 (.01)***	0.10 (.01)***	0.12 (.01)***	0.12 (.01)***
Academic advice	−0.01 (.01)	−0.01 (.01)	0.00 (.01)	0.04 (.01)**	0.03 (.01)**	0.03 (.01)**
Family SES	0.09 (.01)***	0.09 (.01)***	0.09 (.01)***	0.19 (.01)***	0.18 (.01)***	0.18 (.01)***
Composite achievement test score	0.44 (.01)***	0.44 (.01)***	0.45 (.01)***	0.31 (.01)***	0.31 (.01)***	0.32 (.01)***
Home involvement-by-SES		−0.01 (.01)	−0.02 (.01)		0.01 (.01)	−0.00 (.01)
School involvement-by-SES		−0.02 (.01)	−0.01 (.01)		−0.00 (.01)	0.01 (.01)
Educational expectations-by-SES		−0.01 (.01)	−0.01 (.01)		0.02 (.01)*	0.03 (.01)*
Academic advice-by-SES		0.01 (.01)	0.02 (.01)		−0.00 (.01)	−0.00 (.01)
Home involvement-by-achieve		0.01 (.01)	0.01 (.01)		−0.01 (.01)	−0.02 (.01)
School involvement-by-achieve		−0.03 (.01)**	−0.03 (.01)*		−0.01 (.01)	−0.01 (.01)
Educational expectations-by-achieve		0.05 (.01)***	0.05 (.01)***		0.03 (.01)**	0.03 (.01)**
Academic advice-by-achieve		0.02 (.01)	0.02 (.01)		0.02 (.01)	0.02 (.01)
Home involve-by-SES-by-achieve			0.01 (.01)			0.02 (.01)
School involve-by-SES-by-achieve			−0.02 (.01)			−0.04 (.01)**
Academic advice-by-SES-by achieve			−0.01 (.01)			0.00 (.01)
Educational expectations-by-SES-by-achieve			−0.02 (.01)			0.01 (.01)

$N = 15{,}240$. Models for each outcome (i.e., grades and attainment) run simultaneously. Models include a comprehensive set of covariates

Parental involvement at W1 (10th grade), grades at W2 (12th grade), and educational attainment at W4 (8 years post-expected high school graduation)

* $p < .05$; ** $p < .01$; *** $p < .001$

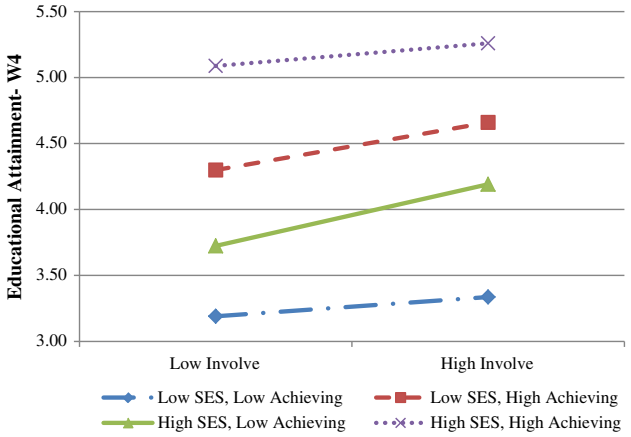


Fig. 1 Relation between parental school-based involvement and student ultimate educational attainment by family SES and prior achievement

central relations of interest. Only the significant two-way interactions not subsumed by the larger significant three-way interaction are discussed. The relation between parents' educational expectations and both GPA and educational attainment were conditioned by students' prior achievement. Simple slopes analyses revealed that the link between parents' educational expectations and cumulative GPA was approximately two times stronger for youth with higher prior achievement (ß = .15, $p < .001$) compared to those with lower prior achievement (ß = . 07, $p < .001$). Similarly, the relation between parent's educational expectations and ultimate educational attainment was double the size for higher (ß = .16, $p < .001$) versus lower-achieving students (ß = .08, $p < .001$). Prior achievement also conditioned the relation between parents' school-based educational involvement and GPA, wherein this association was significantly stronger for lower-achieving students (ß = .12, $p < .001$) than students with higher prior achievement (ß = .03, $p < .01$). Additionally, higher-SES youth reaped greater benefits from parents' educational expectations in relation to ultimate educational attainment (ß = .15 vs .08, $p < .001$, for high-versus low-SES youth, respectively).

Discussion

Although the U.S. has made major strides in improving high school graduation and college attendance rates (Kena et al. 2014), U.S. students' academic performance continues to lag behind their counterparts in many other industrialized nations (OECD 2014). Similarly, although achievement gaps tied to student demographics are narrowing, there still exist a substantial achievement divide between the rich and the poor (Reardon 2011). Parental educational involvement represents a malleable support that could promote young people's educational success in high school and beyond, making it a prime potential candidate for school intervention efforts. In the current study, we investigated the associations between three aspects of parental educational involvement (i.e., home- and school-based involvement, academic socialization) and young people's proximal (i.e., grades) and distal academic outcomes (i.e., educational attainment).

We also placed particular attention on whether these relations varied as a function of family socioeconomic status and/or adolescents' prior achievement either independently or conjointly to better understand whether specific types of parental involvement are particularly beneficial for certain youth. Using data from the Education Longitudinal Study (ELS), we generally observed significant links between parental school-based educational involvement and academic socialization (i.e., educational expectations) and adolescents' grades 2 years later. The links between parental educational involvement and academic outcomes in secondary school observed here are consistent with a host of studies that have examined the influences of both global and type-specific influences of parental educational involvement on academic performance (for reviews, see Fan and Chen 2001; Jeynes 2007; Hill and Tyson 2009).

We, however, extended the lens further to determine the long-term effects of parental involvement (during high school) for young people's ultimate educational attainment, timing not typically considered in existing educational involvement research. Here, we found that greater parental school-based involvement and academic socialization (i.e., expectations, academic advice) were both related to higher educational attainment, above and beyond the effects of a host of relevant covariates. In fact, the size of the educational expectations coefficient was of similar magnitude to family income and gender and was more than double the size of the effects of race/ethnicity (see "Appendix"), all of which are sociodemographic characteristics with well-established links to educational attainment (Everett et al. 2011; McDaniel et al. 2011). That parents' educational involvement continues to exert its influence 10 years later points to the long reach of parental involvement in the lives of young people.

These overall effects, however, masked important variation in the relations of interest. Specifically, the moderation analyses revealed that school-based involvement seemed to be particularly beneficial for more disadvantaged youth (i.e., those with poorer prior achievement, those from lower-SES families), whereas parents' educational expectations, one form of academic socialization, generally seemed particularly potent for the academic success of more advantaged youth (i.e., those from high-

SES families, those with higher prior achievement). Returning to the notion of concerted cultivation, which encompasses the parental educational involvement practices of interest in the current study, can lend useful insights into these findings.

One of the primary means by which concerted cultivation contributes to the educational success of youth is via cultural reproduction, wherein the cultural socialization that children receive in the home provides them with critical social capital (e.g., interpersonal skills and connections, educational practices) that is particularly valued in dominant social institutions such as schools (Bourdieu 1973; Lareau 2003). Cultural reproduction theory suggests that more advantaged youth would benefit most from parental educational involvement, as their parents are best equipped to transmit their cultural and social capital to their offspring. This hypothesis is meted out in our findings related to academic socialization, which was, when operationalized as educational expectations, typically more strongly related to educational success for more advantaged adolescents. In contrast, parents with less education and those whose children are historically performing more poorly in school may engage in a "value stretch," wherein parents downwardly stretch their thresholds for acceptable levels of educational success in an attempt to reconcile their feelings of efficacy in their children's education (McLoyd 1998; Seginer 1983).

School-based involvement, in contrast, does not necessarily require the same social capital, and thus may be less sensitive to cultural reproduction mechanisms. Although lower-SES families may have employment, transportation, or language constraints that limit their ability to participate in school-based activities (Hill and Taylor 2004), school-based activities, such as attending PTA meetings or parent-teacher conferences, often do not require that parents possess specific educational skills. As such, parents may have a greater incentive to engage in these activities and feel more efficacious in doing so. Moreover, the return on parents' investments of time and effort in school-based activities, and the cultural capital transmitted via these efforts, are likely particularly strong for children who are in more disadvantaged positions, whether due to low SES or traditionally low educational achievement, according to the cultural mobility model (DiMaggio 1982; Jæger 2011).

The effects of school-based involvement, however, were not uniform across groups, particularly when examining the intersection with family SES and prior achievement conjointly. Students possessing one, but not both disadvantages (i.e., high achieving but from a low-SES family, low-achieving but from a high-SES family), seemed to reap the most benefits from school-based involvement, particularly in regard to ultimate educational attainment. Life course theory's tenet of accumulating advantages versus disadvantages suggests that early life experiences that promote well-being can set individuals on life course trajectories of continued success. Life course trajectories, however, can be deflected when individuals accumulate setbacks and disadvantages in early life (Elder 1998). Once set in motion, these trajectories are often quite difficult to shift, supporting the findings observed here that those with no disadvantages (high-achieving students with well-educated parents) and those with many disadvantages (low-achieving students with parents with less education) tended to not benefit from parents' school-based involvement.

Although the current study contributes to our understanding of the proximal and distal influences of parental educational involvement on young people's educational success and variations in these relations, some limitations must be noted. First, although we were able to measure the three distinct types of parental educational involvement, our study lacks some depth in measurement, which is common with research using large-scale longitudinal studies. Future work with richer parental involvement data that more comprehensively measures parental involvement and accounts for the potential multidimensional nature of each involvement component is needed to replicate our study findings. Second, the current study focused on one key proximal context of adolescence—families—but we did not examine how the various aspects of parental educational involvement might elicit promotive or disruptive processes in other proximal environments of youth, namely schools and peers. Prior scholarship highlights the important role that teacher and peer support play in the academic success of young people (Klem and Connell 2004; Somers et al. 2008; Benner 2011), and it is likely that parents' educational involvement may promote adolescents' positive views of school, greater teacher involvement in their children's education, and selection of more academically-focused peers. These cross-system (i.e., mesosystem) influences (Bronfenbrenner and Morris 2006) may serve as key mechanisms by which parental involvement promotes achievement and attainment, and this is a key area for future research. These mesosystem effects may also explain, in part, the long-reaching influences of parents' academic socialization on ultimate educational attainment. In addition, more attention should also be placed on the potential bidirectional links between parents and children. Parents likely adjust their involvement based on their children's academic needs (Green et al. 2007), but this variability was not captured in the current study. Future studies that measure both achievement and parental educational involvement across time are needed to conduct advanced statistical models that can better tap into the likely bidirectional nature of these relations.

Conclusion

The current study adds to the mounting evidence of the critical role parental educational involvement plays in the academic lives of youth. The nuanced findings we observed have clear implications for efforts to support young people's educational success. Recent work has documented the promising role of integrating parental involvement strategies into educational interventions (Jeynes 2012; Park and Holloway 2013; Patall et al. 2008). Our study findings suggest that such efforts might be more effective if more strategically targeted. For example, academic supports or interventions with more advantaged students may want to focus particularly on promoting parents' educational expectations and the clear communication of these expectations to their children. In contrast, programs or interventions serving more disadvantaged or academically struggling youth may want to make greater efforts to encourage parents' active involvement in school-based activities.

Additionally, our findings suggest that home-based involvement, including the provision of assistance with homework and school projects, may be less important for promoting academic achievement. Indeed, prior research has observed that increased academic assistance through homework help and other more intrusive parenting techniques, even when elicited by children's academic struggles, can compromise achievement (Pomerantz and Murray-Eaton 2001; Robinson and Harris 2014). However, we also observed a positive main effect of academic advice for young people's ultimate educational attainment, suggesting that a balance of educational supports is needed. Interventions and supports that help parents find the appropriate balance of unobtrusive educational assistance could also be beneficial. Overall, we hope the findings reported here spur new research investigating the characteristics and activities of schools, teachers, and administrators that better elicit or impede parental educational involvement and the most effective strategies for promoting the academic success of all young people.

Acknowledgments The authors acknowledge the support of funding from the William T. Grant Foundation to Aprile Benner and from the National Institute of Child Health and Human Development to the Population Research Center, University of Texas at Austin (R24 HD42849). Opinions reflect those of the authors and not necessarily those of the granting agencies.

Author Contributions ADB conceived of and participated in the design of the study, supervised the data analysis and interpretation of the data, and drafted the manuscript. AEB performed the statistical analyses, participated in the interpretation of the data, and drafted the manuscript. SS conceived of the study and participated in its design. All authors read and approved the final manuscript.

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with human participants performed by any of the authors.

Informed Consent Informed consent was obtained by the NCES from all individual participants included in the study.

Appendix

Parental educational involvement and control variable effects on academic outcomes

	Grades β (*SE*)	Educational attainment β (*SE*)
Home involvement	−0.00 (.01)	−0.02 (.01)
School involvement	0.06 (.01)***	0.06 (.01)***
Educational expectations	0.09 (.01)***	0.10 (.01)***
Academic advice	−0.01 (.01)	0.04 (.01)***
Family SES	0.09 (.01)***	0.19 (.01)***
Composite achievement test score	0.44 (.01)***	0.31 (.01)***
Female	0.16 (.01)***	0.11 (.01)***
Asian American	0.02 (.00)**	0.05 (.01)***
African American	−0.14 (.01)***	−0.01 (.01)
Latino	−0.09 (.01)***	−0.01 (.01)
Other race/ethnicity	−0.04 (.01)***	−0.02 (.01)*
Age	−0.08 (.01)***	−0.06 (.01)***
School sector	−0.00 (.01)	−0.04 (.01)***
Free/reduced-priced lunch	0.06 (.02)***	−0.03 (.01)**

Parental involvement and covariates measured at W1 (10th grade), grades at W2 (12th grade), and educational attainment at W4 (8 years post-expected high school)

* $p < .05$; ** $p < .01$; *** $p < .001$

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park: Sage.

Anderson, K. J., & Minke, K. M. (2007). Parent involvement in education: Toward an understanding of parents' decision making. *The Journal of Educational Research, 100*, 311–323. doi:10.3200/JOER.100.5.311-323.

Benner, A. D. (2011). Latino adolescents' loneliness, academic performance, and the buffering nature of friendships. *Journal of Youth and Adolescence, 40*, 556–567. doi:10.1007/s10964-010-9561-2.

Bourdieu, P. (1973). Cultural reproduction and social reproduction. In R. Brown (Ed.), *Knowledge, education, and cultural change* (pp. 71–112). London: Tavistock.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In R. M. Lerner & W. Damon (Eds.),

Handbook of child psychology: Vol 1, Theoretical models of human development (6th ed., pp. 793–828). Hoboken, NJ: Wiley.

Carolan, B. V., & Wasserman, S. J. (2015). Does parenting style matter? Concerted cultivation, educational expectations, and the transmission of educational advantage. *Sociological Perspectives, 58*, 168–186. doi:10.1177/0731121414562967.

Cheadle, J. E., & Amato, P. R. (2011). A quantitative assessment of Lareau's qualitative conclusions about class, race, and parenting. *Journal of Family Issues, 32*, 679–706. doi:10.1177/0192513X10386305.

Cheung, C., & Pomerantz, E. M. (2011). Parents' involvement in children's learning in the United States and China: Implications for children's academic and emotional adjustment. *Child Development, 82*, 932–950. doi:10.1111/j.1467-8624.2011.01582.x.

Crosnoe, R., & Huston, A. C. (2007). Socioeconomic status, schooling, and the developmental trajectories of adolescents. *Developmental Psychology, 43*, 1097–1110. doi:10.1037/0012-1649.43.5.1097.

Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19*, 294–304. doi:10.1037/0893-3200.19.2.294.

DiMaggio, P. (1982). Cultural capital and school success: The impact of status culture participation on the grades of U.S. high school students. *American Sociological Review, 47*, 189–201.

Dumais, S. A., Kessinger, R. J., & Ghosh, B. (2012). Concerted cultivation and teachers' evaluations of students: Exploring the intersection of race and parents' educational attainment. *Sociological Perspectives, 55*, 17–42. doi:10.1525/sop.2012.55.1.17.

Elder, G. H., Jr. (1998). The life course and human development. In R. E. Lerner (Ed.), *Volume 1: Theories of human development: Contemporary perspectives* in William Damon (editor-in-chief), *The handbook of child psychology* (5th ed.), (pp. 939–991). New York: Wiley.

Enders, C. K. (2010). *Applied missing data analysis*. New York, NY: Guilford Press.

Englund, M. M., Luckner, A. E., Whaley, G. J. L., & Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology, 96*, 723–730. doi:10.1037/0022-0663.96.4.723.

Epstein, J. L. (1987). Parent involvement: What research says to administrators. *Education and Urban Society, 19*, 119–136.

Everett, B. G., Rogers, R. G., Hummer, R. A., & Krueger, P. M. (2011). Trends in educational attainment by race/ethnicity, nativity, and sex in the United States, 1989–2005. *Ethnic and Racial Studies, 34*, 1543–1566. doi:10.1080/01419870.2010.543139.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review, 13*, 1–22. doi:10.1023/A:1009048817385.

Fry, R. (2013, September 24). *The growing economic clout of the college educated*. Retrieved July 28, 2015, from http://www.pewresearch.org/fact-tank/2013/09/24/the-growing-economic-clout-of-the-college-educated/.

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler, H. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology, 99*, 532–544. doi:10.1037/0022-0663.99.3.532.

Greenman, E., Bodovski, K., & Reed, K. (2011). Neighborhood characteristics, parental practices and children's math achievement in elementary school. *Social Science Research, 40*, 1434–1444. doi:10.1016/j.ssresearch.2011.04.007.

Gutman, L. M., & Midgley, C. (2000). The role of protective factors in supporting the academic achievement of poor African American students during the middle school transition. *Journal of Youth and Adolescence, 29*, 223–248. doi:10.1023/A:1005108700243.

Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development, 75*, 1491–1509. doi:10.1111/j.1467-8624.2004.00753.x.

Hill, N. E., & Taylor, L. C. (2004). Parental school involvement and children's academic achievement: Pragmatics and issues. *Current Directions in Psychological Science, 13*, 161–164. doi:10.1111/j.0963-7214.2004.00298.x.

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45*, 740–763. doi:10.1037/a0015362.

Huston, A. C., & Bentley, A. C. (2010). Human development in societal context. *Annual Review of Psychology, 61*, 411–437. doi:10.1146/annurev.psych.093008.100442.

Ingels, S. J., Planty, M., & Bozick, R. (2005). *A profile of the American High School Senior in 2004: A first look—Initial results from the first follow-up of the Education Longitudinal Study of 2002 (ELS:2002) (NCES 2006–348)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Ingels, S. J., Pratt, D. J., Alexander, C. P., Jewell, D. M., Lauff, E., Mattox, T. L., & Wilson, D. (2014). *Education Longitudinal Study of 2002 Third Follow-up Data File Documentation (NCES 2014-364)*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Ingels, S. J., Pratt, D. J., Rogers, J. E., Siegel, P. H., & Stutts, E. S. (2004). *Education Longitudinal Study of 2002: Base Year Data File User's Manual (NCES 2004-405)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Institute of Medicine. (2014). *Investing in the health and well-being of young adults*. Washington, DC: The National Academies Press.

Izzo, C. V., Weissberg, R. P., Kasprow, W. J., & Fendrich, M. (1999). A longitudinal assessment of teacher perceptions of parent involvement in children's education and school performance. *American Journal of Community Psychology, 27*(6), 817–839. doi:10.1023/A:1022262625984.

Jæger, M. M. (2011). Does cultural capital really affect academic achievement? New evidence from combined sibling and panel data. *Sociology of Education, 84*, 281–298. doi:10.1177/0038040711417010.

Jeynes, W. H. (2003). A meta-analysis: The effects of parental involvement on minority children's academic achievement. *Education and Urban Society, 35*, 202–218. doi:10.1177/0013124502239392.

Jeynes, W. H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education, 40*, 237–269. doi:10.1177/0042085905274540.

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement. *Urban Education, 42*, 82–110. doi:10.1177/0042085906293818.

Jeynes, W. H. (2012). A meta-analysis of the efficacy of different types of parental involvement programs for urban students. *Urban Education, 47*, 706–742. doi:10.1177/0042085912445643.

Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., et al. (2014). *The condition of education 2014 (NCES 2014-083)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Kim, D. H., & Schneider, B. (2005). Social capital in action: Alignment of parental support in adolescents' transition to postsecondary education. *Social Forces, 84*, 1181–1206.

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*, 262–273. doi:10.1111/j.1746-1561.2004.tb08283.x.

Lareau, A. (2003). *Unequal childhoods: Class, race and family life*. Berkeley, CA: University of California.

Lee, V. E., & Croninger, R. G. (1994). The relative importance of home and school in the development of literacy skills for middle-grade students. *American Journal of Education, 102*, 286–329. doi:10.1086/444071.

McDaniel, A., DiPrete, T. A., Buchmann, C., & Shwed, U. (2011). The black gender gap in educational attainment: Historical trends and racial comparisons. *Demography, 48*, 889–914. doi:10.1007/s13524-011-0037-0.

McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185–204. doi:10.1037/0003-066X.53.2.185.

Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Nakao, K., & Treas, J. (1994). Updating occupational prestige and socioeconomic scores: How the new measures measure up. *Sociological Methodology, 24*, 1–72. doi:10.2307/270978.

OECD. (2014). *PISA 2012 Results: What students know and can do—Student performance in mathematics, reading and science* (Vol. I, Revised edition, February 2014), PISA, OECD Publishing. doi:10.1787/9789264201118-en.

Park, S., & Holloway, S. D. (2013). No parent left behind: Predicting parental involvement in adolescents' education within a sociodemographically diverse population. *Journal of Educational Research, 106*, 105–119. doi:10.1080/00220671.2012.667012.

Patall, E. A., Cooper, H., & Robinson, J. C. (2008). Parent involvement in homework: A research synthesis. *Review of Educational Research, 78*, 1039–1101. doi:10.3102/0034654308325185.

Pomerantz, E. M., & Eaton, M. M. (2001). Maternal intrusive support in the academic context: Transactional socialization processes. *Developmental Psychology, 37*(2), 174–186. doi:10.1037/0012-1649.37.2.174.

Reardon, S. F. (2011). The widening academic-achievement gap between the rich and the poor: New evidence and possible explanations. In R. M. Murname & G. J. Duncan (Eds.), *Whither opportunity: Rising inequality, schools, and children's life changes* (pp. 91–116). Washington, DC: Brookings Institute.

Reynolds, J. R., & Johnson, M. K. (2011). Change in the stratification of educational expectations and their realization. *Social Forces, 90*, 85–109. doi:10.1093/sf/90.1.85.

Robinson, K., & Harris, A. L. (2014). *The broken compass: Parental involvement with children's education*. Cambridge, MA: Harvard University Press.

Roksa, J., & Potter, D. (2011). Parenting and academic achievement: Intergenerational transmission of educational advantage. *Sociology of Education, 84*, 299–321. doi:10.1177/0038040711417013.

Rothstein, R. (2004). *Class and schools: Using social, economic, and educational reform to close the achievement gap*. Washington, DC: Economic Policy Institute.

Seginer, R. (1983). Parents' educational expectations and children's academic achievements: A literature review. *Merrill-Palmer Quarterly, 29*, 1–23.

Seginer, R. (2006). Parents' educational involvement: A developmental ecology perspective. *Parenting: Science and Practice, 6*, 1–48. doi:10.1207/s15327922par0601_1.

Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research, 75*, 417–453. doi:10.3102/00346543075003417.

Snyder, T. D., & Dillow, S. A. (2013). *Digest of education statistics 2012 (NCES 2014-015)*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Snyder, T. D., Dillow, S. A., & Hoffman, C. M. (2008). *Digest of education statistics 2007 (NCES 2008-022)*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Somers, C. L., Owens, D., & Piliawsky, M. (2008). Individual and social factors related to urban African American adolescents' school performance. *The High School Journal, 91*, 1–11. doi:10.1353/hsj.2008.0004.

The White House, Office of the Press Secretary. (2013). *FACT SHEET on the President's plan to make college more affordable: A better bargain for the middle class [Press release]*. Retrieved July 28, 2015, from https://www.whitehouse.gov/the-press-office/2013/08/22/fact-sheet-president-s-plan-make-college-more-affordable-better-bargain.

Wang, M., & Sheikh-Khalil, S. (2014). Does parental involvement matter for student achievement and mental health in high school? *Child Development, 85*, 610–625. doi:10.1111/cdev.12153.

Woolley, M. E., & Grogan-Kaylor, A. (2006). Protective family factors in the context of neighborhood: Promoting positive school outcomes. *Family Relations, 55*, 93–104. doi:10.1111/j.1741-3729.2006.00359.x.

Zhan, M., & Sherraden, M. (2011). Assets and liabilities, educational expectations, and children's college degree attainment. *Children and Youth Services Review, 33*, 846–854. doi:10.1016/j.childyouth.2010.12.006.

Aprile D. Benner is an assistant professor in the Department of Human Development and Family Sciences at the University of Texas at Austin. She received her Ph.D. in Education at the University of California, Los Angeles. Her research interests center on race/ethnicity and social class as developmental contexts and the influence of multiple and shifting ecological contexts in young people's lives.

Alaina E. Boyle is a graduate student in the Department of Human Development and Family Sciences at the University of Texas at Austin. Her research focuses on how children navigate important transition periods and how that influences self-constructs, socioemotional competencies, and educational performance.

Sydney Sadler graduated from the Department of Human Development and Family Sciences undergraduate program at the University of Texas at Austin. Her research focused on the role that teacher social support, parental involvement, SES, and achievement played for adolescents' school engagement.

Journal of Youth & Adolescence is a copyright of Springer, 2016. All Rights Reserved.

J Youth Adolescence (2015) 44:1702–1719
DOI 10.1007/s10964-015-0334-9

EMPIRICAL RESEARCH

Parental Involvement Across Middle and High School: Exploring Contributions of Individual and Neighborhood Characteristics

Sakshi Bhargava[1] · **Dawn P. Witherspoon**[2]

Received: 20 May 2015 / Accepted: 16 July 2015 / Published online: 28 July 2015
© Springer Science+Business Media New York 2015

Abstract Parental involvement in education is crucial during adolescence when grades decline and youth autonomy increases. This study examined parental involvement trajectories from 7th to 11th grade and explored whether individual and neighborhood characteristics affected this change. European American and African American (66 %) families participated (N = 1377, primary caregivers: 92 % female; adolescents: 51 % male, initial age range: 11–14). Results showed that, over time, parents reduced home- and school-based involvement but consistently engaged in academic socialization. Individual and neighborhood characteristics contributed differentially to parental involvement trajectories. These findings suggest that parental investment in adolescents' education persists during this critical developmental period, but individual and contextual differences impact the use of these strategies, which has implications for family-school partnerships and interventions.

Keywords Home-based involvement · School-based involvement · Academic socialization · Race · Socioeconomic status · Gender · Neighborhood structure · Social dynamics

✉ Sakshi Bhargava
sub229@psu.edu

✉ Dawn P. Witherspoon
dpw14@psu.edu

[1] Department of Psychology, The Pennsylvania State University, 223 Moore Building, University Park, PA 16803, USA

[2] Department of Psychology, The Pennsylvania State University, 217 Moore Building, University Park, PA 16803, USA

Introduction

Parental involvement is an important determinant of youth's educational success and is linked to higher academic performance and motivation across grade levels and racial-ethnic groups (Hill et al. 2004; Wang and Sheikh-Khalil 2014). During adolescence, parental involvement may be a particularly important parenting strategy because many youth experience declines in academic performance and are at an increased risk of dropping out of school (Simmons and Blyth 1987; Wang and Eccles 2012). Yet, at this critical developmental stage, parental involvement in education may change as the parent-youth relationship undergoes renegotiation and adolescents seek more autonomy from their parents (Gutman and Midgley 2000; Hill and Chao 2009). Research suggests that parental involvement declines after elementary school (Crosnoe 2001; Eccles and Harold 1996; Izzo et al. 1999). However, these studies do not take into account the multidimensional nature of parental involvement (Hill and Tyson 2009) or explore more developmentally appropriate forms of this education-focused parenting strategy. It is possible that not all forms of parental involvement decline during adolescence. Parents may reduce involvement in strategies that may infringe upon adolescents' autonomy (e.g., homework assistance, volunteering at school) but increase involvement in strategies that allow them to scaffold independence in youth and promote youth's decision making ability (e.g., communicating the value of education).

The parental involvement changes mentioned above may have implications for adolescents' academic success. Yet, few studies have empirically examined the trajectories of different types of parental involvement during multiple adolescent developmental periods (i.e., early and middle adolescence) (See Eccles and Harold 1996; Wang et al.

2014). Further, the extent to which parental involvement changes over time may depend on one's social position (race, socioeconomic status (SES), and adolescents' gender) and neighborhood context (disadvantage, resources, and cohesion and trust), as suggested by Garcia Coll et al. (1996) Integrative model. For example, high SES parents may engage in more parental involvement than low SES parents as high SES parents may be able to provide more academic resources for youth (Wang and Sheikh-Khalil 2014). Also, parents living in disadvantaged neighborhoods (low SES) may engage in lower levels of warmth and communication with their adolescents (Simons et al. 1997), which may limit their involvement in youth's education. Although, several studies have examined neighborhood effects on parenting styles (e.g., authoritarian and authoritative parenting styles) (Simons et al. 1997, 2005), little is known about how neighborhood characteristics may affect parent's use of educational involvement strategies across middle and high school.

The goal of the present study was to extend understanding of parental involvement in education during early and middle adolescence, from middle to high school. It does so by examining multiple involvement strategies among racially and socioeconomically diverse families during this critical developmental period and by examining how social position and neighborhood context contribute to changes in parental involvement during adolescence. This study offers insight into the ways that parents become and/or remain involved in their adolescent's education during adolescence—an important time for academic achievement and growth, which has implications for future success.

Conceptualizations of Parental Involvement

Parental involvement is broadly defined as "parents' interactions with schools and with their children to promote academic success" (Hill et al. 2004, p. 1491). Several frameworks have been proposed to conceptualize parental involvement (Epstein 1992; Comer 1995). Overall, these frameworks consider parental involvement to be a multifaceted construct that includes a wide variety of parenting practices (Fan and Chen 2001). Hill and Tyson (2009), in their meta-analysis, empirically identified and validated three types of parental involvement, which parents may implement during adolescence (i.e., post-elementary school), namely parental *home-based involvement*, *school-based involvement*, and *academic socialization* (Hill and Tyson 2009). *Home-based involvement* includes strategies like supervision of and assistance with homework and the provision of intellectually engaging materials, such as books. *School-based involvement* includes attending parent-teacher conferences, volunteering at school, and engaging in discussions with school personnel (Hill and Tyson 2009). These types of school involvement are distinct in that attending parent-teacher conferences and communicating with school personnel may be more direct such that they require reciprocal communication between parents and teachers, whereas volunteering at school may be relatively less direct as it allows parents to have a presence at school and be involved but may not require specific, education-related communication with teachers. Further, *academic socialization* is an indirect form of involvement; it is a communication-focused strategy that allows parents to convey their academic expectations and aspirations while also providing youth autonomy (e.g., selecting course work for class). Academic socialization includes discussion about the links between schoolwork and current events, the value of education, and youth's future plans (Hill and Tyson 2009). All three types of parental involvement are empirically shown to be related to youth's academic outcomes such as academic performance and engagement across middle and high school (Hill and Tyson 2009; Wang et al. 2014; Wang and Sheikh-Khalil 2014).

Changes in Parental Involvement Across Middle and High School

Middle and high schools have different structures than elementary schools (McGill et al. 2012); yet, they provide fewer opportunities for autonomy that adolescents crave (Chen and Gregory 2010; Holcomb-McCoy 2007), leading to a mismatch between adolescents' developmental needs and demands of the new school setting. Relatedly, as youth exit elementary school and move to middle and high school, parents may alter the way that they are involved in their adolescents' education. Cross-sectional studies that examine parental involvement suggest a decline in parents' home- and school-based involvement after elementary school (Izzo et al. 1999). Over time, to provide adolescents with more autonomy, parents may reduce their involvement in strategies that may be perceived by youth as intrusive or as an infringement on autonomy and instead increase engagement in strategies that are less intrusive and promote decision making in youth (Wang et al. 2014).

During middle school, parents are likely to engage in direct forms of *home-based involvement* such as providing structure at home and supervising adolescents' homework (Hill and Tyson 2009; McGill et al. 2012). Parents are also likely to engage in fundraising and other administrative duties with teachers (*school-based involvement*). Yet, these activities do not always provide the opportunity for close relationships to form between teachers and parents due to the increased number of teachers and less welcoming environment of middle school (Hill and Tyson 2009). In addition, parents may also engage in *academic socialization*, the most developmentally appropriate strategy, as it allows parents to

remain involved in youth's education and simultaneously give youth autonomy and decision making power (Hill and Tyson 2009). In middle school, parents engage in academic socialization by communicating their academic aspirations and expectations to youth to motivate them in the educational domain (Fan and Chen 2001, Hill and Tyson 2009).

In contrast, in high school, parents may engage in less direct forms of parental involvement to accommodate youth's developmental needs and provide them with autonomy. Some studies indicate that parents of high school students tend to reduce their levels of daily supervision of homework (*home-based involvement)* (Catsambis and Garland 1997; Stone 2006). To compensate for reduced involvement at home, parents may increase communication with teachers (*school-based involvement*). Research findings on school-based involvement during high school are mixed. Some studies indicate that parents increase communication with teachers and school personnel to learn about courses that may help prepare their adolescents for college entrance exams (Catsambis and Garland 1997); whereas, others show reduced direct interactions among parents and teachers to provide adolescents with more autonomy (Stone 2006, Wang and Sheikh-Khalil 2014). In addition to school-based involvement, parents may engage in *academic socialization* by communicating the importance of education to their youth and talking candidly with them about their educational attainment expectations for them. However, there is a dearth of empirical evidence regarding parents' academic socialization during the high school years. On average, studies examining academic socialization have focused on parental aspirations and expectations and how they are perceived by their adolescents (Chen and Gregory 2010). Very few studies examining academic socialization have operationalized it as discussions with adolescents about their course selection or future goals. However, Stone (2006) examined parents' and adolescents' discussions about high school course selection and found that parents engaged in less academic socialization over time as adolescents' moved from 8th to 10th grade. More research is needed to get a comprehensive understanding of the developmental trajectory of academic socialization, given that it is a developmentally appropriate strategy for parental involvement in middle and high school education and a predictor of adolescent academic engagement and achievement (Wang and Sheikh-Khalil 2014).

Effects of Social Position (Race, SES, and Gender) on Parental Involvement

The extent to which parents engage in various involvement strategies may vary with parents' and adolescents' social position (i.e., race, SES, and youth's gender) (Garcia Coll et al. 1996). Due to varied understandings of the parental role in adolescents' education (Hill et al. 2004) and unique experiences with the school system (Hill and Tyson 2009), parents from different racial and SES backgrounds may utilize differing parental involvement strategies during the middle and high school years. African American parents, as compared to European American parents, tend to be less involved at school and more involved at home (Hill and Tyson 2009; Wang and Sheikh-Khalil 2014) because of prior negative school and discrimination experiences (Cross 2003). Although, not much is known about race differences in academic socialization, Stone (2006) showed that African American parents were more engaged in academic socialization than European American parents, which may be related to racial minorities' cultural belief in the utility and importance of education as a means to be successful. However, Wang and Sheikh-Khalil (2014) found no race differences at 10th grade. Also, researchers find SES differences in parental involvement strategies with adolescents. Specifically, low SES parents are more likely to engage in less home-based involvement, school-based involvement, and academic socialization (Hill et al. 2004; Wang and Sheikh-Khalil 2014) due to limited material and social resources (Reynolds 1992). Further, parents may have different educational expectations for their boys and girls (Wood et al. 2010) and may therefore engage in different involvement strategies for male and female adolescents. Sui-Chu and Willms (1996) showed that parents engaged in more homework supervision (home-based involvement) and school communication (school-based involvement) for boys than girls. Although little is known about gender differences in academic socialization, Wood et al. (2010) showed that African American parents held lower expectations for educational attainment for boys than girls, suggesting possible gender differences in youth's academic socialization.

Neighborhood Influences on Parental Involvement

Along with social position variables (e.g., race, gender, and SES), the Integrative model (Garcia Coll et al. 1996) suggests that parental educational involvement strategies may be shaped by parents' neighborhoods. The neighborhood context can act as either an inhibitor to (e.g., risk) or promoter of (e.g., asset) academic success, and is often characterized by its structural characteristics (e.g., neighborhood disadvantage, institutional resources) and social dynamics (e.g., presence of positive relationships) (Byrnes and Miller 2012). Social disorganization theory (Kingston et al. 2009; Shaw and McKay 1942) suggests that neighborhood disadvantage (indexed by poverty, low SES, and limited resources) prevents neighborhood residents from maintaining social and physical order (Leventhal and

Brooks-Gunn 2000), which can create mistrust as well as weakened social ties and support among neighbors (Sampson and Groves 1989). These declines in social ties and support may increase the burden on individual parents to raise their youth (Simons et al. 1997). The stress created by the limited availability of neighborhood institutional resources (i.e., quality and positive places for youth to congregate), increased poverty, and greater prevalence of crime and violence may encourage parents to use restrictive and controlling parenting strategies (e.g., curfew times and increased behavioral supervision) (Leventhal and Brooks-Gunn 2000). These types of strategies may also translate into increased control and supervision in the academic domain (i.e., home-based parental involvement such as homework supervision). Relatedly, research suggests that parents living in disadvantaged neighborhoods, characterized by low SES as well as high unemployment rates and female-headed households, are less likely to engage in communication with their adolescents (Simons et al. 1997). Therefore, it is reasonable to assume that parents residing in disadvantaged neighborhoods may engage in less communication-based parental involvement (i.e., academic socialization) than their counterparts.

Along with neighborhood disadvantage, one's perception of social processes in the neighborhood may influence parental involvement in adolescents' education. Putnam's (1993) social capital theory suggests that neighborhoods provide opportunities for individuals to form social networks based on interpersonal trust, reciprocity, and cooperation. These networks may serve as a basis for information and resource exchange. Given that neighborhood social capital depends on the level of trust among individuals, a neighborhood with high social capital may be characterized as cohesive with mutual trust among its residents. These social resources may reduce parents' stress and help them engage in a less restrictive parenting style (authoritative parenting) (Byrnes and Miller 2012), which may be expressed with less enforcement of strict rules and structure for doing academic work at home. Also, as authoritative parents tend to have high achievement expectations for their children and foster these demands through bidirectional communication (Spera 2005), it is likely that parents living in neighborhoods with high cohesion and trust may also engage in more academic socialization. One study to date has examined the effects of neighborhood social dynamics on parental involvement. Furstenberg et al. (1999) did not find any effect of neighborhood context on parent's home-based involvement; yet, they did show that parents living in cohesive neighborhoods were more likely to participate in school activities (i.e., school-based involvement) than parents living in less cohesive neighborhoods. Overall, the neighborhood literature has examined how neighborhood context is associated with parenting styles. There is limited knowledge about the association between the neighborhood context and education-based parenting strategies such as parental home- and school- based involvement and academic socialization. This study sought to address this gap.

The Current Study and Hypotheses

With a better understanding of how educational parenting strategies change over time and for whom these changes are most pronounced, we can gain important information that may be beneficial in enhancing adolescents' academic achievement trajectories. Therefore, the goals of the current study were to determine (1) how parental involvement strategies change during adolescence (i.e., do they increase, decrease or remain stable across middle and high school) and (2) if these strategies vary by race, SES, adolescents' gender, and neighborhood factors across middle and high school. We expected parents to reduce their home- and school-based involvement (Eccles and Harold 1996) and increase engagement in academic socialization as adolescents move from middle school to high school, given the developmental appropriateness of academic socialization (Hill and Tyson 2009). We expected parents' race, SES, and youth's gender to be associated with parental involvement across middle and high school such that African American parents will display more home-based involvement and academic socialization and less school-based involvement than European American parents across grade levels (Eccles and Harold 1996; Wang and Sheikh-Khalil 2014). We hypothesized that high SES parents will be more involved in adolescents' education than low SES parents during middle and high school (Wang and Sheikh-Khalil 2014). Further, we expected that, during middle and high school, parents will engage in more academic socialization for girls and more home- and school-based involvement for boys (Catsambis and Garland 1997). In addition, we expected parents living in more cohesive neighborhoods to engage in more school-based involvement than parents living in less cohesive neighborhoods (Furstenberg et al. 1999). As little is known about the relationship between neighborhood structural and social characteristics and other parental involvement strategies, these analyses were exploratory, and we offer no directional hypotheses about other forms of involvement.

Methods

Sample

The sample for this study came from the Maryland Adolescent Development in Context Study (MADICS), a multi-

wave longitudinal study (Eccles 1997). A total of 1482 diverse families from a Maryland county participated. Due to the limited representation of other racial-ethnic groups in the sample, the current study only includes African American and European American families (N = 1377, wave 1) who participated at waves 1 (beginning of 7th grade), 2 (N = 1125, end of 7th grade), 3 (N = 1108, 8th grade), or 4 (N = 988, 11th grade).

Of the 1377 parents (i.e., caregivers) present at wave 1, approximately 93 % were females. Primarily, parents were mostly mothers (87 %), fathers (6 %), and other family members (7 %). Approximately, 66 % of the parents and 67 % of the adolescents were African American. The average age of adolescents at wave 1 was 12.28 ($SD = 0.55$). Approximately 92 % of the parents graduated from high school, with the median education level being 1 year of post-high school education. Parents' income ranged from less than $10,000 to more than $70,000, with a median income between $40,000 and $50,000. According to 1990 census data, the average household income in the United States was $38,543 ($40,307—European American; $25, 871—African American); Maryland's average household income was higher ($47,904). In Prince George's county, where the study sample was drawn, the average household income was $48,606; European American households ($52,768) had higher incomes than their African American households ($45,196) (US Census Bureau 1990a, b). These estimates demonstrate the racial and socioeconomic stratification in the United States, but also show the relative affluence of residents in Prince George's county. At waves 1, 3, and 4, parents and adolescents completed face-to-face interviews and self-administered questionnaires. At waves 2 and 3, parents and adolescents also participated in a phone interview.

Measures

Family Demographic Variables

Demographic variables included adolescents' race and gender as well as parents' race and SES. Parents and adolescents provided their gender and race. SES was measured by parents' education level and total annual family income. Parents reported the highest grade they completed and responded to a 16 point scale ranging from 1 (less than $5 K) to 16 (more than $75 K) to indicate their pre-tax income. The response range was re-coded to 1(less than $10 K) to 10 (more than $70 K). Higher scores indicated higher income.

Parental Involvement Variables

Youth's Perception of Parental Involvement in Schooling This scale was adapted from the Philadelphia family management study (Furstenberg et al. 1999). As parents' reports of home-based involvement were not available at all three waves, this scale measured youth's perceptions. Only two items from the scale (i.e., parents help with school work and parents check homework after it's completed) were present at all three waves (i.e., waves 1, 3, and 4). Adolescents' responded on a 6-point scale from 1 (almost never) to 6 (almost every day). On average, at wave 1, adolescents reported that their parents were engaged in home-based involvement several times per week ($M = 4.24$, $SD = 1.55$). This scale demonstrated good internal reliability ($\alpha = 0.77$–0.79).

School Involvement The measure on school involvement was used to determine the extent to which parents were involved at their adolescents' school and communicated with teachers. This measure consisted of eight open-ended questions and measured the frequency with which parents communicated with school personnel. Only five of the eight questions were present at all three waves (i.e., wave 2, 3, and 4), and were included in this study. Due to the differing types of school involvement (volunteering and communication), we assessed the school involvement indicators separately. Parents reported a number in response to each of these questions "How many times did you attend a parent teacher conference?", "How many times did you contact the school about child?", "How many times did you receive a note from the school about child?", "How many times did you help out at school by doing things like going to school performances, helping with fund raising, etc.?", and "How many times did you go to an open house?". For the purpose of analyses, the responses were converted into a fixed range format that ranged from 1 (0 times) to 6 (5 or more times). Questions on parent-teacher conference attendance, contacting teachers, and receiving notes from school were combined to create a composite score to assess parents' school-based communication. Questions on parents helping out at school and attending open house were combined to create a composite score to assess parents' volunteerism at school. On average, in 7th grade, parents engaged in school-based communication and volunteerism about two times ($M_{communication} = 3.06$, $SD = 1.00$; $M_{volunteerism} = 3.05$, $SD = 1.43$). Higher scores indicated more school-based involvement.

Parental Communication with Youth This scale was adapted from the Philadelphia family management study (Furstenberg et al. 1999). It was used to measure the strategies that parents used for the academic socialization of their adolescent. The original scale consisted of six items and measured the frequency with which parents communicated with the youth about things like plans for the future and courses youth should take in school. Only two items (i.e., parent and youth discussion about youth's plans for the future and courses youth should take in school) were

available at all three data collection waves and were included in the scale to measure academic socialization. Responses ranged from 1(almost never) to 6 (almost every day). On average, at wave 1, parents engaged in academic socialization about 1-3 times a month ($M = 3.12$, $SD = 1.21$). This scale was available at waves 1, 3, and 4 and demonstrated good reliability ($\alpha = 0.78$–0.82).

For information on descriptive statistics of parental involvement strategies by respondent's race and adolescents' gender, see Table 3 in "Appendix".

Neighborhood Variables

Neighborhood Resources Parents indicated if neighborhood institutional resources were present at wave 1. The original measure included six items; however, only four youth, educational specific institutional resources items (e.g., afterschool recreational programs for children) were used. A count of the number of neighborhood resources was created. On average, at least three institutional resources were present in the neighborhood ($M = 2.97$, $SD = 1.36$). Higher scores indicated more neighborhood institutional resources.

Neighborhood Cohesion and Trust The neighborhood cohesion and trust scale was adapted from the Denver Youth Study (Elliott et al. 2006). Four items from this scale (e.g., "This is a close knit neighborhood") were used in this study. At wave 1, parents indicated on a 5-point scale ranging from 1(strongly agree) to 5 (strongly disagree) the level of social support present in the neighborhood (i.e., higher scores indicated more cohesion and trust). On average, parents were ambivalent about the extent to which they felt close to their neighbors and could trust them ($M = 3.37$, $SD = 0.72$; $\alpha = 0.77$).

Archival Neighborhood Data Addresses reported by parents at wave 1 were geo-coded to link to census tract data from 1990. The census tract data was then used to create a measure of neighborhood disadvantage. Three variables–percent female headed households, percent unemployed in the civilian labor force, and percent families living below the poverty level–were included. Each of these indicators has been used in prior studies (Leventhal and Brooks-Gunn 2000; Witherspoon and Hughes 2014). On average, families lived in neighborhoods where 23 % of the households were headed by females, 4 % of the adults (16 years and older) were unemployed, and 4 % of the families lived below the federal poverty level. Data was available for 89 % of the families that participated in the study. The scale had good internal reliability ($\alpha = 0.87$). Each of the structural indicators was standardized and a mean score, neighborhood disadvantage, was computed. Standardized scores (i.e., z-scores) ranged from -1.26 to 2.94, with higher scores indicating greater neighborhood disadvantage.

For information on descriptive statistics of neighborhood characteristics by parent's race, see Table 4 in "Appendix".

Covariate

Parental Efficacy The parental efficacy scale was used to measure the extent to which parents felt efficacious in influencing their youth's academic outcomes. The scale consisted of 2 items—"How effective do you feel you are in helping your 7th grader in math?" and "How effective do you feel you are in helping your 7th grader in other school subjects?"—on a 7 point scale from 1(not at all effective) to 7(very effective). On average, at wave 1, parents saw themselves as somewhat effective in helping their adolescents with their academics ($M = 4.94$, $SD = 1.49$). This scale was included at wave 1 and had good internal reliability ($\alpha = 0.73$). Higher scores indicated more feelings of efficacy as reported by the parents.

Analysis Plan

Preliminary Analyses

Correlation analyses were performed among key variables (See Table 1 for wave 1 [7th grade] correlations). Intraclass Correlation Coefficients (ICCs) were computed to determine the proportion of between-neighborhood (e.g., census tract) differences in parental involvement. ICCs for home- (0.03) and school-based (0.03–0.08) involvement as well as academic socialization (0.04) were relatively small and suggested that the proportion of variance attributable to between neighborhood differences was less than 8 %. Because the between-neighborhood variability in parental involvement was relatively small (Witherspoon and Ennett 2011), we proceeded with multilevel modeling analyses using only 2 levels (i.e., time and individual) in SAS v.9.3.

Substantive Analyses

Multi-level modeling (MLM) analyses were conducted using SAS Proc Mixed 9.3, with maximum likelihood estimation (Raudenbush and Bryk 2002). The data was not multiply imputed before running the analyses, despite missing values, due to the robustness of multilevel modeling against missing data (Quené and Van den Bergh 2004). Analyses for this study were conducted using a linear fit model, because the present study uses data from only three time points; fitting quadratic models to less than four data points is not recommended (Raudenbush and

Table 1 Correlation among parental involvement strategies, neighborhood variables, and individual characteristics at 7th grade

	1	2	3	4	5	6	7	8	9	10
1. Parent education	–									
2. Parent income	.44**	–								
3. Parental efficacy	.24**	.10**	–							
4. Home-based involvement	.03	−.04	.22**	–						
5. School-based communication	.07*	−.06	.07*	.13*	–					
6. Volunteerism	.26**	.25**	.15**	.03	.10**	–				
7. Academic socialization	.02	−.004	.21**	.09**	.08*	.09**	–			
8. Neighborhood disadvantage	−.29**	−.42**	.008	.08**	.10**	−.22**	.08**	–		
9. Neighborhood resources	.27**	.28**	.04	−.02	.007	.25**	.01	−.35**	–	
10. Cohesion and trust	.12**	.23**	.07**	.04	−.08**	.14**	.05*	−.24**	.22**	–

* $p < .05$; ** $p < .01$

Bryk 2002). First, to investigate any between person differences in parental involvement in middle school, unconditional means models (i.e., no predictors included in the model) were estimated for home-based involvement, school-based communication and volunteerism, as well as academic socialization.

Next, to examine changes in parental involvement strategies over time (research question 1), a total of four unconditional growth models were estimated for each parental involvement strategy: home-based involvement, school-based communication, volunteerism, and academic socialization. Time was specified at level 1 (within person) and the individual (parent/adolescent) was specified at level 2 (between person). Adolescent's grade level was centered at 7th grade and used as the time measure. The models for home-based involvement, school-based communication, and volunteerism included fixed effects of intercept and slope and random effects of intercept only as the G-matrix (estimated covariance parameters) for their unconditional growth models was non-positive definite suggesting that between person variance for either the intercept or slope parameter was very small (West et al. 2007; Witherspoon and Ennett 2011). The models were therefore re-specified and the random effects of slope were not examined in these models. The academic socialization model included fixed and random effects of intercept and slope. Further, to examine if social position variables and neighborhood context predicted change in parental involvement across middle and high school (research question 2), individual difference variables (race, gender, SES) and their interactions with time were added first in the conditional model as level 2 predictors. Because parental efficacy has been shown to be related to parental involvement (Green et al. 2007; Hoover-Dempsey et al. 2005), it was included as a time invariant, level 2 covariate. The parental efficacy-time interaction was included as a cross-level interaction. Next, neighborhood variables and their interaction with time were entered in the conditional model as level 2 predictors, after adjusting for parents' and adolescents' individual characteristics and parental efficacy.

Last, we tested models that included interactions between race and SES (i.e., individual and neighborhood) to determine if there were differential associations between race and parental involvement strategies by SES. These models degraded model fit (i.e., AIC and BIC increased) and the interactions were non-significant. Therefore, the final models (see Table 2) do not include these interaction terms.

Race and gender were included as dichotomous variables (0 = European American, 1 = African American; 0 = female, 1 = male). Continuous variables (i.e., SES, parental efficacy, and perceived neighborhood characteristics) were grand mean centered. Reporter's race, either adolescent or parent, was used in the home-based involvement or school-based involvement and academic socialization models, respectively.

Results

Preliminary Analyses

Missing Data Analyses

A total of 1377 parents and adolescents completed surveys at wave 1. Approximately 82 % of the families participated at wave 2 (phone interviews); about 80 % of the families participated at wave 3, and 69 % of the families participated at wave 4. Further, 55 % of the families participated at all 4 waves; 26.5 % of the families participated at 3 waves; 12.7 % of the families participated at only 2 waves whereas 5.6 % of the families participated at only 1 wave. No race differences were observed between the families that participated at all 4 waves and at only 1 wave. However, SES differences were observed such that families that

Table 2 Multilevel modeling analyses results of parental involvement strategies

	Home-based involvement		School-based communication		Volunteerism		Academic socialization	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Fixed effects								
Initial status								
Intercept (γ_{00})	3.84***	3.74***	2.68***	2.57***	3.81***	3.29***	3.02***	2.90***
	(.07)	(.14)	(.06)	(.12)	(.07)	(.19)	(.06)	(.11)
Black (γ_{01})	.36***	.33***	.34***	.28***	−.42***	−.29***	.31***	.30***
	(.08)	(.09)	(.07)	(.08)	(.08)	(.09)	(.07)	(.08)
Male (γ_{02})	.42***	.42**	.52***	.50***	−.50***	−.54***	−.09	−.06
	(.07)	(.08)	(.06)	(.07)	(.07)	(.08)	(.06)	(.06)
Parent education (γ_{03})	.0007	−.004	.07***	.07**	.10***	.10***	−.02	−.007
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Income (γ_{04})	−.04*	−.04	−.06***	−.04	.10***	.07**	−.0006	−.008
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Parental efficacy (γ_{05})	.19***	.20***	.01	.02	.09***	.09***	.16***	.16***
	(.03)	(.03)	(.02)	(.02)	(.03)	(.03)	(.02)	(.02)
N disadvantage (γ_{06})	–	.11*	–	.10*	–	−.10	–	.10*
		(.06)		(.05)		(.05)		(.04)
Resources (γ_{07})	–	.04	–	.06	–	.15***	–	.03
		(.03)		(.03)		(.03)		(.03)
Cohesion and trust (γ_{08})	–	.10	–	−.12*	–	.01	–	.09
		(.06)		(.05)		(.06)		(.05)
Slopes								
Intercept (γ_{00})	−.42***	−.36***	−.23***	−.18***	−.36***	−.28***	.09***	.17***
	(.02)	(.05)	(.02)	(.05)	(.04)	(.05)	(.02)	(.04)
Black (γ_{01})	−.009	.01	.01	.03	.15***	.13***	.00007	−.02
	(.03)	(.03)	(.02)	(.03)	(.03)	(.03)	(.02)	(.02)
Male (γ_{02})	−.01	−.006	−.06**	−.05*	.07**	.08*	−.06**	−.06**
	(.03)	(.03)	(.02)	(.02)	(.03)	(.03)	(0.02)	(.02)
Parent education (γ_{03})	−.001	−.001	−.01*	−.01*	−.01*	−.01*	.002	−.001
	(.006)	(.006)	(.007)	(.007)	(.006)	(.007)	(.005)	(.005)
Income (γ_{04})	−.003	.001	−.0003	−.004	−.007	−.001	−.006	−.001
	(.007)	(.008)	(.006)	(.007)	(.007)	(.008)	(.006)	(.006)
Parental efficacy (γ_{05})	−.01	−.02	−.002	−.006	−.003	−.004	−.02*	−.01
	(.009)	(.01)	(.008)	(.008)	(.01)	(.01)	(.007)	(.008)

Table 2 continued

	Home-based involvement		School-based communication		Volunteerism		Academic socialization	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
N disadvantage (γ_{06})	–	−.01	–	−.04**	–	.01	–	−.009
		(.02)		(.02)		(.02)		(.02)
Resources (γ_{07})	–	−.02	–	−.02*	–	−.02	–	−.02*
		(.01)		(.01)		(.01)		(.009)
Cohesion and Trust (γ_{08})	–	.0003	–	.03	–	.02	–	−.003
		(.02)		(.02)		(.02)		(.02)
Random effects								
Level-1 effect (*rij*)	1.33***	1.34***	.85***	.86***	1.16***	1.15***	.71***	.73***
	(.04)	(.05)	(.03)	(.03)	(.04)	(.04)	(.03)	(.04)
Level-2 effects								
Intercept (*u*0*j*)	.78***	.75***	.52***	.53***	.59***	.56***	.68***	.64***
	(.06)	(.06)	(.85)	(.04)	(.05)	(.05)	(.05)	(.06)
Slope (*u*1*j*)	–	–	–	–	–	–	.02**	.01*
							(.006)	(.01)
Covariance (*u*0*j*) (*u*1*j*)	–	–	–	–	–	–	−.03*	−.02
							(.01)	(.02)
Goodness of fit								
−2LL	10,722.2	9631.3	8234.9	7447.8	8838.0	7909.6	9317.4	8364.1
AIC	10,750.2	9671.3	8262.9	7487.8	8866.0	7949.6	9349.4	8408.1
BIC	10,822.3	9772.2	8335.0	7588.7	8938.1	8050.5	9431.8	8519.1

Model 1 includes the demographic variables and their interaction with time. Model 2 contains demographic and neighborhood variables with their interaction with time.Please contact the author for more information for parental involvement strategy models not presented here

N Disadvantage neighborhood disadvantage, *−2LL* −2 log-likelihood, *AIC* Akaike information criterion, *BIC* bayesian information criterion

* $p < 0.05$; ** $p < .01$; *** $p < .001$

participated at all 4 waves were significantly more educated ($M = 14.14$, $SD = 2.48$) and had higher incomes ($M = 5.49$, $SD = 1.99$) than families that participated at only 1 wave ($M_{\text{education}} = 12.86$, $SD = 2.08$; $t_{\text{education}}$ $(99.40) = 5.08$, $p < .001$; $M_{\text{income}} = 4.90$, $SD = 2.24$; t_{income} $(802) = 2.31$, $p < .05$).

Multilevel Modeling Analyses

Unconditional Models

To examine the proportion of variability in parental involvement due to between person differences, *unconditional means models* were estimated. The variance components associated with the intercept of home-based involvement, school-based communication and volunteerism, and academic socialization were significant ($\sigma^2_{\text{home based}} = .64$, $SE = .06$, $p < .001$; $\sigma^2_{\text{communication}} = .54$, $SE = .04$, $p < .001$; $\sigma^2_{\text{volunteerism}} = .68$, $SE = .05$, $p < .001$; $\sigma^2_{\text{academic socialization}} = .68$, $SE = .04$, $p < .001$) and indicated that parents differ from one another in average parental involvement. The ICCs showed that 23 % of the variation in home-based involvement, 32 % of the variation in school-based communication, 32 % of the variation in volunteerism, and 45 % of the variation in academic socialization was due to differences between parents.

Unconditional linear growth models were used to determine if parental involvement in education changed from middle to high school (research question 1). All linear models were significant, suggesting linear growth from middle to high school. On average, in 7th grade, adolescents perceived parents to be engaged in home-based involvement about once a week ($b = 4.28$, $SE = .04$, $p < .001$). Over time, home-based involvement decreased ($b = -.44$, $SE = .01$, $p < 0.001$) from about once a week in 7th grade to 1–3 times a month in 11th grade. For school-based involvement, on average, in 7th grade, parents engaged in school-based communication (e.g., attending parent-teacher conferences) about two times during the academic year ($b = 3.16$, $SE = .03$, $p < .001$), but this participation decreased ($b = -.26$, $SE = .01$, $p < .001$) over time. Further, on average, parents volunteered at school about twice during 7th grade ($b = 3.30$, $SE = .04$, $p < .001$), but reduced their volunteerism ($b = -.22$, $SE = .01$, $p < .01$) across middle and high school. In addition, during 7th grade, parents engaged in academic socialization about 1–3 times a month ($b = 3.18$, $SE = .03$, $p < .001$), and parents increased ($b = .06$, $SE = .01$, $p < .001$) this socialization throughout middle and high school.

Conditional Models

Conditional growth models (See Table 2) were used to determine if parental involvement strategies from middle (i.e., early adolescence) to high (i.e., middle adolescence) school varied by individual and neighborhood characteristics (research question 2). Below, additive findings are presented (See Model 2) and should be interpreted as predictor effects on parental involvement after adjusting for other covariates (i.e., race, gender, SES, neighborhood context, and parental efficacy). Although, most of the estimates presented below are small, they highlight some important and interesting associations of individual and neighborhood characteristics with parental involvement strategies.

Home-Based Involvement On average, African American adolescents reported higher initial levels of home-based involvement than European American adolescents ($b = .33$, $SE = .09$, $p < .001$). However, the rate of change of home-based involvement did not vary by youth's race. Next, at 7th grade, boys reported more home-based involvement than girls ($b = .42$, $SE = .08$, $p < .001$), but they showed similar declines in home-based involvement over time. Parents' SES was not significantly associated with home-based involvement at 7th grade and beyond. Further, on average, adolescents living in more disadvantaged neighborhoods reported higher levels of home-based involvement ($b = .11$, $SE = .06$, $p < .05$) but showed similar declines in home-based involvement as their counterparts living in less disadvantaged neighborhoods. Neighborhood resources and cohesion and trust were not significantly associated with home-based involvement at and beyond 7th grade.

School-Based Communication On average, at 7th grade, African American parents ($b = .28$, $SE = .08$, $p < .001$) engaged in more school-based communication than European American parents but showed a similar decline in school-based communication. At 7th grade, parents of boys engaged in more school-based communication ($b = .50$, $SE = .07$, $p < .001$) and, over time, reduced school-based communication at a slower rate than parents of girls ($b = -.05$, $SE = .02$, $p < .05$). Parents' SES was associated with school-based communication such that, during 7th grade, more educated parents engaged in more school-based communication ($b = .07$, $SE = .02$, $p < .01$) and, over time, reduced their school-based communication at a slower rate than less educated parents ($b = -.01$, $SE = .007$, $p < .05$). Next, at 7th grade, parents living in more disadvantaged neighborhoods engaged in higher levels of school-based communication ($b = .10$, $SE = .05$, $p < .05$) and, over time, they reduced school-based communication at a slower rate than parents living in less disadvantaged neighborhoods ($b = -.04$, $SE = .02$, $p < .01$). Further, at 7th grade, parents in more cohesive neighborhoods engaged in less school-based communication than their counterparts ($b = -.12$, $SE = .05$, $p < .05$); however, parents in both types of neighborhoods showed similar trajectories of

decline in school-based communication. At 7th grade, neighborhood resources were not significantly associated with school-based communication, but the rate at which school-based communication changed varied with neighborhood resources ($b = -.02$, $SE = .01$, $p < .05$) such that parents living in more resourced neighborhoods reduced their school-based communication at a slower rate.

Volunteerism On average, in 7th grade, African American parents engaged in less volunteerism ($b = -.29$, $SE = .09$, $p < .001$) and, over time, reduced volunteerism at a faster rate as compared to European American parents ($b = .13$, $SE = .03$, $p < .001$). During 7th grade, boys' parents engaged in less school volunteerism than girls' parents ($b = -.54$, $SE = .08$, $p < .001$), and over time, parents of boys showed a faster decline in volunteerism than parents of girls ($b = .08$, $SE = .03$, $p < .05$). SES differences in school volunteerism were found during 7th grade. Families with higher incomes ($b = .07$, $SE = .02$, $p < .01$) and education levels ($b = .10$, $SE = .02$, $p < .001$) engaged in more volunteerism than their counterparts. Also, more educated parents reduced volunteerism at a slower rate than their counterparts ($b = -.01$, $SE = .007$, $p < .05$). Further, on average, at 7th grade, parents living in more resourced neighborhoods engaged in more volunteerism than parents living in less resourced neighborhoods ($b = .15$, $SE = .03$, $p < .001$). Yet, parents in both neighborhood types reduced volunteerism similarly over time. Neighborhood disadvantage and cohesion and trust were unrelated to volunteerism.

Academic Socialization On average, African American parents reported higher academic socialization in 7th grade than European American parents ($b = .30$, $SE = .08$, $p < .001$); however, parents' race did not predict the rate of change in academic socialization over time. During 7th grade, parents of boys and girls engaged in similar levels of academic socialization, but over time, boys' parents increased their academic socialization at a slower rate than girls' parents ($b = -.06$, $SE = .02$, $p < .01$). SES was unrelated to academic socialization. In 7th grade, parents living in more disadvantaged neighborhoods engaged in more academic socialization than their counterparts ($b = .10$, $SE = .04$, $p < .05$); however, neighborhood disadvantage was not associated with change in academic socialization over time. At 7th grade, neighborhood resources were not associated with academic socialization; however, over time, parents living in more resourced neighborhoods increased academic socialization at a slower rate than parents living in less resourced neighborhoods ($b = -.02$, $SE = .009$, $p < .05$). Neighborhood cohesion and trust was not associated with academic socialization.

Discussion

Parental involvement in education is an influential tool for improving youth's academic outcomes (Wang and Sheikh-Khalil 2014). Parents may engage in home-based involvement, school-based involvement (communication and volunteerism), and academic socialization. These strategies may be particularly important during adolescence when there are declines in youth's academic performance (Wang and Eccles 2012). At this critical developmental stage, the extent to which parents use these parental involvement strategies may change with adolescents' growing need for autonomy (Hill and Tyson 2009). The current study empirically examined this potential change in parental involvement and showed that parents reduced their home-based involvement and school-based communication and volunteerism but increased academic socialization over time, highlighting that all types of parental involvement in education do not decline post-elementary school. Further, as implored by developmental researchers (see Le et al. 2008), the current study disentangled social position (i.e., race, SES, and gender) and contextual (i.e., neighborhood) influences on parental involvement strategies concurrently and over time.

Trajectories of Parental Involvement Across Middle and High School

As hypothesized, adolescents' reports of parental home-based involvement declined over time as did parents' reports of school-based communication and volunteerism. In contrast, parents reported increases in academic socialization as adolescents moved from middle school to high school. However, this statistically significant increase may be interpreted more practically as stable, moderate levels of academic socialization. These patterns of results for home- and school-based involvement are consistent with prior research (Catsambis and Garland 1997; Wang et al. 2014). The decline in home-based involvement across middle and high school may be due to adolescents' demands for autonomy (Hill and Chao 2009), which may prompt parents to reduce their level of academic help or only assist when asked as to allow adolescents the opportunity to regulate their academic behaviors. Further, parents may limit their presence at school given adolescents' requests for limited parental presence (Collins and Laursen 2004) and fewer opportunities to communicate or form meaningful relationships with school personnel (Green et al. 2007; Hill and Tyson 2009). Unlike school- and home-based involvement, academic socialization remained stable during adolescence. This strategy is developmentally appropriate as it requires direct parent-adolescent communication that emphasizes future goal orientation and the value of education balanced

with the adolescent's opportunity to make independent academic decisions (Hill and Tyson 2009). This strategy may, therefore, enhance adolescents' academic self-efficacy (Wang and Sheikh-Khalil 2014) and confidence in their ability to succeed in school. Taken together, these findings highlight the importance of examining different dimensions of parental involvement in adolescents' education and suggest that not all forms of parental involvement decline beyond elementary school (Izzo et al. 1999). With these changes and differences in parental education strategies, youth may be more likely to succeed academically if the strategies that parents use to be involved are matched to the adolescent's developmental period (i.e., stage [adolescence]—environment [family] fit; Gutman and Eccles 2007).

Effects of Social Position on Parental Involvement

The reasons and ways in which parents engage in educational involvement strategies may be a function of parents' and adolescents' social position as determined by parents' race and SES and adolescents' gender. Consistent with prior studies (Stone 2006; Wang and Sheikh-Khalil 2014), African American parents engaged in more home-based involvement and academic socialization and less school-based involvement (volunteerism) than their European American counterparts. Also, African American parents reduced volunteerism at a faster rate than European American parents. Despite low volunteerism, African American parents engaged in more school-based communication than European American parents. These parental involvement differences may be a result of historically racialized school experiences. Some research shows that teachers may have lower expectations of and tend to hold negative stereotypes about the intellectual ability of African American adolescents (McKown and Weinstein 2008). To challenge these negative stereotypes and protect adolescents from the negative effects of lower teacher expectations, African American parents may choose to engage in more home-based involvement and academic socialization to boost adolescents' confidence and convey the importance of education and school work (Hill et al. 2009). Alternatively, African American parents' own experiences of discrimination with the school system may increase their levels of involvement. Due to possible school mistrust, African American parents may engage in more school-based communication to monitor school personnel's activities and demonstrate their own commitment to education (Hill et al. 2004) to counteract negative stereotypes.

Unlike parental involvement race differences, but consistent with other studies (Wang and Sheikh-Khalil 2014; Hill et al. 2004), parents' SES was only associated with school-based communication and volunteerism. Higher SES parents engaged in more school-based involvement than lower SES parents. Parents with higher levels of education and more economic resources may be more comfortable within the school setting, more efficacious in their interactions with teachers and school authorities, and more effective in advocating the academic needs of their children as compared to lower SES parents (Hill et al. 2004; Wang and Sheikh-Khalil 2014).

Along with race and parents' SES, adolescents' gender was also associated with parental involvement strategies. Consistent with the previous findings (Carter and Wojtkiewicz 2000; Sui-Chu and Willms 1996), boys' parents engaged in more home-based involvement and school-based communication across middle and high school as compared to girls' parents. Over time, parents of boys reduced school-based communication at a slower rate than parents of girls. In contrast, boys' parents engaged in less school-based volunteerism than girls' parents. Across middle and high school, parents of boys reduced volunteerism at a faster rate than parents of girls. Further, over time, parents of boys increased their use of academic socialization at a slower rate than parents of girls. Prior studies suggest that boys are less likely to have higher academic achievement (Pomerantz et al. 2002) and are at a higher risk of dropping out of school (Kena et al. 2014) than girls. Parents of boys may want to provide structure at home and supervise schoolwork to keep adolescents away from deviant behaviors and help them succeed in school. Further, parents of boys may also contact school personnel more often to monitor their adolescents' behaviors, progress in school, and learn how to assist with homework (Lareau 1996). In contrast, girls' parents may not feel the need to contact school personnel to check on their daughters, but they may instead volunteer to establish relationships with other parents and learn about educational opportunities outside the school that may help their daughters continue to excel. Further, given that girls are more likely to perform better in school than boys (Pomerantz et al. 2002), parents of girls tend to have higher academic expectations than parents of boys (Carter and Wojtkiewicz 2000), and may therefore increasingly engage in academic socialization across middle and high school.

Effects of Neighborhood Structure and Social Dynamics on Parental Involvement

Along with understanding the effects of individual differences on parental involvement, we were interested in disentangling these individual differences from contextual predictors of parental involvement. The neighborhood context is an important environment that shapes parenting (Leventhal and Brooks-Gunn 2000) through its structure (disadvantage and institutional resources) and social dynamics (cohesion and trust). Characteristics of

neighborhoods can inhibit or promote positive parenting behaviors as well as adolescents' academic success. Parenting and family stress models suggest that neighborhood disadvantage reduces positive parenting practices. Conversely, social capital models (Coleman 1988; Putnam 1993) propose that the presence of positive structures (i.e., institutions) and constructive neighborhood relationships are beneficial for parenting. In the current study, we found some evidence for each of these perspectives, even after adjusting for demographic characteristics. Neighborhoods mattered for parental involvement strategies; yet, the ways in which neighborhood characteristics impacted these involvement strategies were not consistent.

Neighborhood disadvantage was positively associated with home-based involvement and academic socialization whereas institutional resources were negatively associated with change in academic socialization over time. Parents engaged in more home-based involvement and academic socialization if they lived in more disadvantaged neighborhoods. Further, parents in more resourced neighborhoods engaged in academic socialization at a slower rate than their counterparts. In other words, over time, parents in less resourced neighborhoods more frequently used academic socialization strategies and surpassed their counterparts by 11th grade. Due to stressful living environments, parents in disadvantaged neighborhoods may engage in more restrictive and controlling parenting strategies at home (Leventhal and Brooks-Gunn 2000). For parental involvement, this may mean more monitoring of youth behavior and less opportunities to interact in the neighborhood, which may result in more chances for home-based structured academic activities. Relatedly, even though research suggests that parents in disadvantaged neighborhoods are less likely to communicate with their children (Simons et al. 1997), education-specific discussions among these parents and their children may be likely. Parents in disadvantaged neighborhoods may work intensely to communicate to their children the value and importance of education as a means to get out of the neighborhood or increase their human, social, and financial capital (Higginbotham and Weber 1992). Further, the presence of fewer neighborhood resources may put adolescents at a greater risk of engaging in delinquent behaviors (Gottfredson et al. 2004). Therefore, parents living in neighborhoods with fewer resources may engage in academic socialization at a faster rate over time to prevent their youth from engaging in delinquent behaviors and to set them on a positive trajectory. However, neighborhood disadvantage did not exert influence on any parental involvement strategy over time, suggesting that neighborhood disadvantage may be more important for parenting during early adolescence.

School-based involvement, measured independently as both school-based communication and volunteerism, was differentially impacted by the neighborhood context. Neighborhood institutional resources, like the YMCA and after-school programs, were positively associated with volunteerism whereas cohesion and trust was negatively associated with school-based communication. These neighborhood resources may provide more than positive interactions and academic assistance to adolescents (Quane and Rankin 2006); they may also increase positive parenting behaviors (Pinderhughes et al. 2001), provide a supportive platform for parents to gain information about schools and academics (Leventhal and Brooks-Gunn 2000), and encourage parents to engage, interact, and volunteer. Further, if parents are involved in these neighborhood institutions, they may be more comfortable and likely to engage in other youth-focused institutions such as schools. The presence of neighborhood institutional structures enhanced parents' volunteerism, whereas, positive perceptions of neighborhood cohesion and trust reduced school-based communication. If parents are accustomed to positive, supportive relationships in their neighborhoods, they may be less likely to interact with school personnel if the quality of the communication is negative, hostile, or problem-focused. Given school bureaucracies, preventative, positive communication between home and school is often difficult to achieve during middle and high school (Wang et al. 2014). Further, in supportive, cohesive neighborhoods, parents may rely on their social networks, rather than school personnel, to get tangible, informational support (Putnam 1993) to assist with school-related problems and choices. This set of findings should be interpreted with caution until replicated given the inconsistency with Furstenberg et al. (1999) findings that cohesive neighborhoods were associated with more school-based involvement (i.e., volunteerism and communication). Perhaps because Furstenberg et al. (1999) coupled these theoretically distinct forms of school-based involvement, the nuanced relationship between neighborhood social dynamics and school-based involvement is obscured. The present study sought to explore these complexities and demonstrated the importance of neighborhood socioeconomic disadvantage, institutional resources, and cohesion as both inhibiting and promoting factors (Garcia Coll et al. 1996) for specific education-focused parenting behaviors.

Strengths, Limitations, and Future Directions

Taken together, this study showed the utility of examining parental involvement as a multidimensional construct, because each dimension of parental involvement changed differently during adolescence from middle to high school. Further, this study explored two different forms of school-based involvement and demonstrated that, even though school-based communication and volunteerism follow similar trajectories over time, the predictors of that developmental change vary. Next, this study provided evidence

for the Integrative model (Garcia Coll et al. 1996), showing that parenting processes (i.e., parental involvement in education), which ultimately inform adolescents' developmental competencies (e.g., academic achievement), vary with one's social position (race, SES, and gender). In addition to exploring individual differences, this study sought to disentangle race, SES, and contextual differences in parenting, an important undertaking of developmental scientists (Le et al. 2008). Previous studies have examined the effects of neighborhood context on parenting styles (i.e., authoritative vs. authoritarian parenting) (Quane and Rankin 2006); however, little is known about the association between neighborhood context and parental involvement in adolescents' education. This study is one of the first to examine the association of both neighborhood structural and social characteristics, as either risk (i.e., inhibiting environment) or asset (i.e., promoting environment), with a developmentally appropriate model of parental involvement in post-elementary school education. Together, this study contributes to the growing body of literature on neighborhood effects on families. Just as adolescents are undergoing multiple changes during this developmental period, parents are also negotiating shifts in their education-specific parenting behaviors to become more of a match to their adolescents' needs. These circumstances and research findings may offer insight to educators and parenting program specialists as they seek to enhance parents' academic engagement across schooling.

Whereas this study provides insight into understanding educational parenting behaviors in context, several limitations should be considered when interpreting the findings of this study. First, it is necessary to acknowledge potential neighborhood selection bias (Sampson et al. 2002) due to individual characteristics. To account for this bias, we used a conventional approach (Sampson and Sharkey 2008) and included multiple SES covariates (i.e., parent education and income) that are generally associated with individuals' opportunities to live in certain neighborhoods. However, the current findings should be interpreted with caution. Although selection bias cannot be eliminated as an explanation for the present study's findings, the results are aligned with the extant literature that suggests the importance of the neighborhood context for families and parenting behaviors, in particular.

Next, with secondary data analysis, one is limited to the measures originally included and the time spacing between those measurements. In the present study, in order to tap each dimension of parental involvement across multiple waves, we were limited to abbreviated, previously established scales and sometimes restrained to two-item scales. Although it is not ideal, scholars suggest that consistently measured constructs are necessary for longitudinal investigations (Hox 2010). Also, parental involvement data was only available at three time points (7th, 8th and 11th grade) precluding investigation of more complex curvilinear models. In addition, the time points included in this study restricted our ability to capture the important developmental and ecological transition to high school (Benner and Graham 2009). To make the transition easier for adolescents, it is possible that parents may engage in involvement strategies that change in specific ways during and after the transition (Paulson and Sputa 1996). Future longitudinal studies should explore parental involvement at multiple developmental (e.g., late childhood, early adolescence, and mid-adolescence) and ecological (i.e., elementary, middle/junior high, and high school) transitions to gain a better understanding of these parenting practices through exploration of curvilinear change and compensatory strategies.

Last, although the study participants were representative of the population from which the sample was drawn, the current study only focused on two racial groups (European Americans and African Americans), which limits the generalizability of our findings to other ethnic groups, especially immigrants. Due to cultural differences (e.g., language barriers) and values related to parental role construction (Hoover-Dempsey et al. 2005) (e.g., enhanced respect for school personnel; viewing adolescent's academic development as a school function), immigrant parents may adopt different parental involvement strategies than European American and African American parents (Peña 2000). Therefore, future studies should examine developmental changes in parental involvement among immigrant families, with special attention to specific cultural behaviors and values.

Conclusion

Even after considering these caveats, the present study extends our understanding of parental involvement in education during adolescence to provide a more nuanced and holistic portrait of this education-focused parenting strategy. This study explored longitudinal changes in developmentally appropriate parenting practices with a racially and socioeconomically diverse sample to understand how both individual and neighborhood contextual factors contributed to parental involvement in education from middle to high school. Findings support a multidimensional approach to parental involvement in education that includes home-based involvement; distinguishes between specific forms of school-based involvement (i.e., school-based communication and volunteerism); and incorporates academic socialization. As adolescence is a critical developmental period for academic achievement and future success, it is crucial that scholars continue to

take an in depth look at *specific* parental involvement strategies that are aligned with adolescents' developmental needs. Further, this study continues to "excavate culture" with its attention to race, SES, and neighborhood factors to show differential associations between cultural and contextual variables and patterns of parental involvement in education during adolescence. Given the changing demographic landscape of the United States and its racial and socioeconomic stratification, exploring these variations and integrating this information to improve our current practices (e.g., family-school partnerships) are necessary to help all youth succeed so that no one is left behind. Understanding parental involvement in education at this critical developmental period, when academic achievement and performance declines, among diverse families in different environments may help to elucidate the ways in which families and schools, independently and collaboratively, can foster promising academic trajectories for adolescents and greater opportunities for youth as they enter young adulthood.

Acknowledgments The authors' work for this manuscript was not supported by any external funding. The MADICS study was supported by multiple sources. For more information on these data, please see Jacquelynne S. Eccles 1997, "MADICS Study of Adolescent Development in Multiple Contexts 1991–1998", http://hdl.handle.net/1902.1/01066 UNF:5:uuV+GIHq+xtra75iHCPSPw==Murray Research Archive [Distributor] V2 [Version].

Authors' Contributions SB conceived of the study, participated in its design, conducted the statistical analysis, interpreted the findings, and drafted the manuscript. DPW conceived of the study, participated in its design, assisted with the statistical analysis and interpretation of the findings, and helped to draft and revise the manuscript. Both authors read and approved the final manuscript.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Appendix

See Tables 3 and 4.

Table 3 Means and standard deviations of parental involvement strategies by respondent's race and youth's gender

	Grade	European American M (SD)	African American M (SD)	Female M (SD)	Male M (SD)
Home-based involvement	7th	3.94 (1.53)	4.40 (1.53)	4.05 (1.57)	4.44 (1.50)
	8th	3.56 (1.43)	4.10 (1.52)	3.65 (1.52)	4.17 (1.46)
	11th	2.37 (1.43)	2.74 (1.65)	2.43 (1.50)	2.80 (1.65)
School-based communication	7th	1.96 (1.54)	2.40 (1.53)	2.02 (1.49)	2.44 (1.57)
	8th	1.82 (1.46)	2.47 (1.62)	2.04 (1.53)	2.38 (1.63)
	11th	1.03 (1.14)	1.62 (1.36)	1.29 (1.26)	1.56 (1.36)
Volunteerism	7th	2.33 (1.93)	1.77 (1.81)	2.26 (1.94)	1.71 (1.77)
	8th	2.60 (2.00)	2.22 (1.95)	2.70 (1.98)	2.04 (1.93)
	11th	2.02 (2.24)	1.70 (1.96)	1.93 (2.15)	1.68 (2.12)
Academic socialization	7th	2.92 (1.08)	3.23 (1.26)	3.14 (1.19)	3.11 (1.23)
	8th	3.06 (1.09)	3.50 (1.29)	3.39 (1.24)	3.31 (1.24)
	11th	3.18 (1.09)	3.59 (1.38)	3.57 (1.33)	3.32 (1.27)

Table 4 Neighborhood structure and social dynamics of African American and European American parents at 7th grade

Neighborhood characteristic	African American M (SD)	European American M (SD)	t (df)	*p* value
Neighborhood disadvantage	.27 (.94)	−.53 (.27)	−20.15 (1235.30)	.00
Neighborhood resources	2.72 (1.42)	3.49 (.98)	11.80 (1271.48)	.00
Cohesion and trust	3.31 (.71)	3.49 (.73)	4.34 (1361)	.00

References

Benner, A. D., & Graham, S. (2009). The transition to high school as a developmental process among multiethnic urban youth. *Child Development, 80*(2), 356–376. doi:10.1111/j.14678624.2009.01265.x.

Byrnes, H. F., & Miller, B. A. (2012). The relationship between neighborhood characteristics and effective parenting behaviors: The role of social support. *Journal of Family Issues, 33*(12), 1658–1687. doi:10.1177/0192513X12437693.

Carter, R. S., & Wojtkiewicz, R. A. (2000). Parental involvement with adolescents' education: Do daughters or sons get more help? *Adolescence, 35*(137), 29–44.

Catsambis, S., & Garland, J. E. (1997). *Parental involvement in students' education during middle and high school* (Report No. 18). Baltimore, MD: Johns Hopkins University, Center for Research on the Education of Students Placed at Risk.

Chen, W., & Gregory, A. (2010). Parental involvement as a protective factor during the transition to high school. *The Journal of Educational Research, 103*(1), 53–62. doi:10.1080/00220670903231250.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94*, S95–S120.

Collins, W. A., & Laursen, B. (2004). Parent-adolescent relationships and influences. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 331–362). Hoboken, NJ: Wiley.

Comer, J. P. (1995). *School power: Implications of and intervention project*. New York: Free Press.

Crosnoe, R. (2001). Academic orientation and parental involvement in education during high school. *Sociology of Education, 74*(3), 210–230.

Cross, W. E. (2003). Tracing the historical origins of youth delinquency & violence: Myths & realities about black culture. *The Journal of Social Issues, 59*(1), 67. doi:10.1111/1540-6560.t01-1-00005.

Eccles, J. S. (1997). *MADICS study of adolescent development in multiple contexts, 1991–1998*. Retrieved from http://hdl.handle.net/1902.1/01066. UNF:5:uuV+GIHq+xtra75iHCPSPw==Murray Research Archive [Distributor] V2 [Version].

Eccles, J. S., & Harold, R. D. (1996). Family involvement in children's and adolescents' schooling. In A. Booth & J. F. Dunn (Eds.), *Family-school links: How do they affect educational outcomes?* (pp. 3–34). Mahwah, NJ: Erlbaum.

Elliott, D. S., Menard, S., Rankin, B., Elliott, A., Huizinga, D., & Wilson, W. J. (2006). *Good kids from bad neighborhoods: Successful development in social context*. Cambridge, UK: Cambridge University Press.

Epstein, J. L. (1992). School and family partnerships. In M. Aiken (Ed.), *Encyclopedia of educational research* (6th ed., pp. 1139–1151). New York: Macmillan.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review, 13*(1), 1–22. doi:10.1023/A:1009048817385.

Furstenberg, F. F., Cook, T. D., Eccles, J., Elder, G. H., & Sameroff, A. (1999). *Managing to make it*. Chicago: The University of Chicago Press.

Garcia Coll, C., Lamberty, G., Jenkins, R., McAdoo, H. P., Crnic, K., Wasik, B. H., & García, H. V. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development, 67*(5), 1891–1914. doi:10.1111/j.1467-8624.1996.tb01834.x.

Gottfredson, D. C., Gerstenblith, S. A., Soulé, D. A., Womer, S. C., & Lu, S. (2004). Do after school programs reduce delinquency? *Prevention Science, 5*(4), 253–266. doi:10.1023/B:PREV.0000045359.41696.02.

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology, 99*, 532–544. doi:10.1037/0022-0663.99.5.532.

Gutman, L. M., & Eccles, J. S. (2007). Stage-environment fit during adolescence: Trajectories of family relations and adolescent outcomes. *Developmental Psychology, 43*(2), 522–537. doi:10.1037/0012-1649.43.2.522.

Gutman, L. M., & Midgley, C. (2000). The role of protective factors in supporting the academic achievement of poor African American students during the middle school transition. *Journal of Youth and Adolescence, 29*(2), 223–249. doi:10.1023/A:1005108700243.

Higginbotham, E., & Weber, L. (1992). Moving up with kin and community: Upward social mobility for black and white women. *Gender and Society, 6*(3), 416–440. doi:10.1177/089124392006003005.

Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development, 75*(5), 1491–1509. doi:10.1111/j.1467-8624.2004.00753.x.

Hill, N. E., & Chao, R. K. (2009). *Families, schools, and the adolescent: Connecting research, policy, and practice*. New York: Teachers College Press.

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45*(3), 740–763. doi:10.1037/a0015362.

Hill, N. E., Tyson, D. F., & Bromell, L. (2009). Parental Involvement in middle school: Developmentally appropriate strategies across SES and ethnicity. In N. E. Hill & R. K. Chao (Eds.), *Families, schools, and the adolescent: Connecting research, policy, and practice* (pp. 53–72). New York: Teachers College Press.

Holcomb-McCoy, C. (2007). Transitioning to high school: Issues and challenges for African American students. *Professional School Counseling, 10*(3), 253–260. doi:10.5330/prsc.10.3.t786743452x51lk2.

Hoover-Dempsey, K. V., Walker, J. M. T., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, A. S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *Elementary School Journal, 106*(2), 105–130. doi:10.1086/499194.

Hox, J. J. (2010). *Multilevel analysis: Techniques and applications* (2nd ed.). New York, NY: Routledge.

Izzo, C. V., Weissberg, R. P., Kasprow, W. J., & Fendrich, M. (1999). A longitudinal assessment of teacher perceptions of parent involvement in children's education and school performance. *American Journal of Community Psychology, 27*(6), 817–839. doi:10.1023/A:1022262625984.

Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., & Kristapovich, P. (2014). *The condition of education 2014 (NCES 2014-083)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Kingston, B., Huizinga, D., & Elliott, D. S. (2009). A test of social disorganization theory in high-risk urban neighborhoods. *Youth and Society, 41*, 53–79.

Lareau, A. (1996). Assessing parent involvement in schooling: A critical analysis. In A. Booth & J. F. Dunn (Eds.), *Family-school links: How do they affect educational outcomes?* (pp. 57–64). Mahwah, NJ: Erlbaum.

Le, H., Ceballo, R., Chao, R., Hill, N. E., Murry, V. M., & Pinderhughes, E. E. (2008). Excavating culture: Disentangling ethnic differences from contextual influences in parenting. *Applied Developmental Science, 12*(4), 163–175. doi:10.1080/10888690802387880.

Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin, 126*(2), 309–337. doi:10.1037/0033-2909.126.2.309

McGill, R. K., Hughes, D., Alicea, S., & Way, N. (2012). Academic adjustment across middle school: The role of public regard and parenting. *Developmental Psychology, 48*(4), 1003–1018. doi:10.1037/a0026006.

McKown, C., & Weinstein, R. S. (2008). Teacher expectations, classroom context, and the achievement gap. *Journal of School Psychology, 46*(3), 235–261. doi:10.1016/j.jsp.2007.05.001.

Paulson, S. E., & Sputa, C. L. (1996). Patterns of parenting during adolescence: Perceptions of adolescents and parents. *Adolescence, 31*(122), 369–381.

Peña, D. (2000). Parent involvement: Influencing factors and implications. *The Journal of Educational Research, 94*(1), 42–54. doi:10.1080/00220670009598741.

Pinderhughes, E. E., Nix, R., Foster, E. M., & Jones, D. (2001). Parenting in context: Impact of neighborhood poverty, residential stability, public services, social networks, and danger on parental behaviors. *Journal of Marriage and Family, 63*(4), 941–953. doi:10.1111/j.1741-3737.2001.00941.x.

Pomerantz, E. M., Altermatt, E. R., & Saxon, J. L. (2002). Making the grade but feeling distressed: Gender differences in academic performance and internal distress. *Journal of Educational Psychology, 94*(2), 396–404. doi:10.1037/0022-0663.94.2.396.

Putnam, R. D. (1993). The prosperous community: Social capital and public life. *American Prospect, 13*, 35–42.

Quane, J. M., & Rankin, B. H. (2006). Does it pay to participate? Neighborhood-based organizations and the social development of urban adolescents. *Children and Youth Services Review, 28*(10), 1229–1250. doi:10.1016/j.childyouth.2006.01.004.

Quené, H., & van den Bergh, H. (2004). On multi-level modeling of data from repeated measures designs: A tutorial. *Speech Communication, 43*(1), 103–121. doi:10.1016/j.specom.2004.02.004.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks: Sage Publications.

Reynolds, A. J. (1992). Comparing measures of parental involvement and their effects on academic achievement. *Early Childhood Research Quarterly, 7*(3), 441–462. doi:10.1016/0885-2006(92)90031-S.

Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social-disorganization theory. *American Journal of Sociology, 94*(4), 774–802. doi:10.1086/229068.

Sampson, R. J., Morenoff, J. D., & Gannon-Rowley, T. (2002). Assessing "neighborhood effects": Social processes and new directions in research. *Annual Review of Sociology, 28*, 443–478. doi:10.1146/annurev.soc.28.110601.141114.

Sampson, R. J., & Sharkey, P. (2008). Neighborhood selection and the social reproduction of concentrated racial inequality. *Demography, 45*(1), 1–29. doi:10.1353/dem.2008.0012.

Shaw, C. R., & McKay, H. D. (1942). *Juvenile delinquency and urban areas: A study of rates of delinquents in relation to differential characteristics of local communities in American cities*. Chicago: University of Chicago Press.

Simmons, R. G., & Blyth, D. A. (1987). *Moving into adolescence: The impact of pubertal change and school context*. Hawthorn, NY: Aldine de Gruyler.

Simons, R., Johnson, C., Conger, R., & Lorenz, F. (1997). Linking community context to quality of parenting: A study of rural families. *Rural Sociology, 62*, 207–230. doi:10.1111/j.1549-0831.1997.tb00651.x.

Simons, R. L., Simons, L. G., Burt, C. H., & Brody, G. H. (2005). Collective efficacy, authoritative parenting, and delinquency: A longitudinal test of a model integrating community- and family-level processes. *Criminology*, *43*(4), 989–1029. doi:10.1111/j.1745-9125.2005.00031.x.

Spera, C. (2005). A review of the relationship among parenting practices, parenting styles, and adolescent school achievement. *Educational Psychology Review, 17*(2), 125–146. doi:10.1007/s10648-005-3950-1.

Stone, S. (2006). Correlates of change in student reported parent involvement in schooling: A new look at the national education longitudinal study of 1988. *American Journal of Orthopsychiatry, 76*(4), 518. doi:10.1037/0002-9432.76.4.518.

Sui-Chu, E., & Willms, J. (1996). Effects of parental involvement on eighth-grade achievement. *The Sociological Quarterly, 69*(2), 126–141. doi:10.2307/2112802.

U.S. Census Bureau. (1990a). Table 44—Average household income in 1989 dollars. *Social Explorer DataSet.* Retrieved from http://www.socialexplorer.com/tables/C1990/R10978697.

U.S. Census Bureau. (1990b). Table 45—Average household income by race in 1989 dollars. *Social Explorer DataSet.* Retrieved from http://www.socialexplorer.com/tables/C1990/R10978698.

Wang, M., & Eccles, J. S. (2012). Adolescent behavioral, emotional, and cognitive engagement trajectories in school and their differential relations to educational success. *Journal of Research on Adolescence, 22*(1), 31–39. doi:10.1111/j.1532-7795.2011.00753.x.

Wang, M., Hill, N. E., & Hofkens, T. (2014). Parental involvement and African American and European american adolescents' academic, behavioral, and emotional development in secondary school. *Child Development, 85*(6), 2151–2168. doi:10.1111/cdev.12284.

Wang, M., & Sheikh-Khalil, S. (2014). Does parental involvement matter for student achievement and mental health in high school? *Child Development, 85*(2), 610–625. doi:10.1111/cdev.12153.

West, B. T., Welch, K. B., & Galecki, A. T. (2007). *Linear mixed models: A practical guide using statistical software*. Boca Raton, FL: Taylor & Francis Group.

Witherspoon, D., & Ennett, S. (2011). Stability and change in rural youths' educational outcomes through the middle and high school years. *Journal of Youth and Adolescence, 40*(9), 1077–1090. doi:10.1007/s10964-010-9614-6.

Witherspoon, D. P., & Hughes, D. L. (2014). Early adolescent perceptions of neighborhood: Strengths, structural disadvantage, and relations to outcomes. *The Journal of Early Adolescence, 34*(7), 866–895. doi:10.1177/0272431613510404.

Wood, D., Kurtz-Costes, B., Rowley, S. J., & Okeke-Adeyanju, N. (2010). Mothers' academic gender stereotypes and education-related beliefs about sons and daughters in African American families. *Journal of Educational Psychology, 102*(2), 521–530. doi:10.1037/a0018481.

Sakshi Bhargava, M.S. is a doctoral student in the Department of Psychology, Developmental Area at the Pennsylvania State University. She received her master's degree in Developmental Psychology from the Pennsylvania State University and her bachelor's degree from Stony Brook University. Her research interests include understanding parental involvement in youth's education in multiple contexts. Specifically, she is interested in understanding how individual (e.g., ethnicity), cultural (e.g., acculturation), and

contextual factors (e.g., neighborhood) may influence parents' involvement in youth's education.

Dawn Witherspoon, Ph.D. is an Assistant Professor in the Department of Psychology, Developmental Area at the Pennsylvania State University. She received her doctorate in Community Psychology (Developmental Concentration, Quantitative Minor) from New York University. Dr. Witherspoon's research focuses on ethnically diverse families' and adolescents' experiences in varying neighborhood contexts, with a particular focus on youth's academic, behavioral, and psychosocial development, and explores how neighborhood context may impact cultural processes.

Copyright of Journal of Youth & Adolescence is the property of Springer Science & Business Media B.V. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Journal of Educational Psychology
2015, Vol. 107, No. 3, 756–770

© 2015 American Psychological Association
0022-0663/15/$12.00 http://dx.doi.org/10.1037/edu0000017

Do Children's Executive Functions Account for Associations Between Early Autonomy-Supportive Parenting and Achievement Through High School?

Samantha W. Bindman and Eva M. Pomerantz
University of Illinois at Urbana-Champaign

Glenn I. Roisman
University of Minnesota

This study evaluated whether the positive association between early autonomy-supportive parenting and children's subsequent achievement is mediated by children's executive functions. Using observations of mothers' parenting from the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (N = 1,306), analyses revealed that mothers' autonomy support over the first 3 years of life predicted enhanced executive functions (i.e., inhibition, delay of gratification, and sustained attention) during the year before kindergarten and academic achievement in elementary and high school even when mothers' warmth and cognitive stimulation, as well as other factors (e.g., children's early general cognitive skills and mothers' educational attainment) were covaried. Mediation analyses demonstrated that over and above other attributes (e.g., temperament), children's executive functions partially accounted for the association between early autonomy-supportive parenting and children's subsequent achievement.

Keywords: achievement, autonomy support, executive functions, parenting, self-regulation

Supplemental materials: http://dx.doi.org/10.1037/edu0000017.supp

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

There is much evidence that the more parents support children's autonomy (e.g., by allowing them choice and initiative) and the less they attempt to control children (e.g., through pressure and directives), the better children's achievement (for a review, see Pomerantz, Grolnick, & Price, 2005). This association is evident over time even when taking into account children's prior achievement (e.g., Ng, Kenney-Benson, & Pomerantz, 2004; Wang, Pomerantz, & Chen, 2007) as well as potentially confounding demographics such as parents' educational attainment (e.g., Hess & McDevitt, 1984; Joussemet, Koestner, Lekes, & Landry, 2005). Although there has been much speculation as to why parents' autonomy support (vs. control) predicts enhanced achievement among children (e.g., Grolnick, Deci, & Ryan, 1997; Pomerantz et al., 2005), there has been little empirical attention to this issue. Moreover, the small amount of extant research has focused exclusively on motivational resources (e.g., autonomous motivation and perceptions of competence) as potential mechanisms underlying the role of autonomy-supportive parenting in children's achievement (d'Ailly, 2003; Grolnick, Ryan, & Deci, 1991; Steinberg, Elmen, & Mounts, 1989).

The current research took a step toward addressing this issue by evaluating whether *executive functions*—a set of core cognitive skills that allow children to manage their attention and behavior (Blair & Ursache, 2011)—underlie the heightened achievement predicted by autonomy-supportive parenting. Executive functions include the ability to ignore distractions and inhibit automatic behaviors (i.e., inhibition), hold and manipulate information in mind (i.e., working memory), and flexibly change attention focus and strategies (i.e., switching and cognitive flexibility) (Diamond, 2006). Children's executive functions during early childhood appear to set the foundation for their later achievement (e.g., Best, Miller, & Naglieri, 2011; McClelland, Acock, & Morrison, 2006). Although the role of executive functions in the effects of autonomy-supportive parenting specifically has not been examined, there is evidence that executive functions partially account for the tendency for a variety of aspects of the early home environment to predict children's later achievement (e.g., Dilworth-Bart, 2012; NICHD Early Child Care Research Network, 2003; Razza & Raymond, 2013; Sektnan, McClelland, Acock, & Morrison, 2010).

Autonomy-Supportive Parenting and Children's Executive Functions

Substantial theory and research suggest that autonomy support is a dimension of parenting that facilitates the development of children's executive functions. Autonomy-supportive parenting recognizes children's needs and desires, thereby permitting chil-

This article was published Online First January 19, 2015.

Samantha W. Bindman and Eva M. Pomerantz, Department of Psychology, University of Illinois at Urbana-Champaign; Glenn I. Roisman, Institute of Child Development, University of Minnesota.

This research was supported by NRSA fellowship 1F32HD074371-01 from the National Institute of Child Health and Human Development to S.W.B. The authors would like to express their gratitude to the members of the Center for Parent-Child Studies at the University of Illinois at Urbana-Champaign for their valuable feedback on an earlier version of this article.

Correspondence concerning this article should be addressed to Samantha W. Bindman, Department of Psychology, University of Illinois, 603 E. Daniel St., Champaign, IL 61820. E-mail: worzalla@illinois.edu

dren's initiative; in this context, children are often given the opportunity to solve problems on their own (Grolnick & Pomerantz, 2009; Grolnick & Ryan, 1989; Nolen-Hoeksema, Wolfson, Mumme, & Guskin, 1995). Conversely, controlling parenting is demanding and dominating, with parents intruding on children's activities and making decisions for them. Drawing on Self-Determination Theory (Deci & Ryan, 1985), Grolnick and colleagues (e.g., Frodi, Bridges, & Grolnick, 1985; Grolnick et al., 1997; Grolnick, Frodi, & Bridges, 1984; Grolnick et al., 1991) argue that when parents support children's autonomy rather than attempt to control children, they foster children's fulfillment of the basic need for autonomy. As a consequence, children's motivation is autonomous rather than controlled, such that they experience their pursuits as enjoyable or important rather than driven by internal (e.g., the avoidance of guilt) or external (e.g., the attainment of rewards) pressure.

Because autonomy-supportive parenting often involves giving children the opportunity to solve problems on their own, children exposed to such parenting may encounter challenging activities (e.g., a difficult puzzle) that frequently require executive functions. Moreover, when children are autonomously motivated, they may maintain their engagement in such activities for extended periods of time during which they ignore competing activities that are appealing (e.g., playing on the computer). Over time, engaging in challenging activities that require executive functions has the potential to provide opportunities to practice and strengthen these skills. Given that children may enjoy challenging activities more when they feel autonomous, executive functions may also be less taxing for children with autonomy-supportive parents. In a different vein, it has been proposed that because parents' autonomy support involves providing children with rationales, it fosters children's language skills, which children use in the context of self-talk to guide themselves through such endeavors as inhibition and switching (e.g., Matte-Gagné & Bernier, 2011; Vallotton & Ayoub, 2011).

There is much evidence from correlational research that sensitive parenting, which includes parents' autonomy support as well as warmth and responsiveness, foreshadows enhanced executive functions among children (e.g., Belsky, Pasco Fearon, & Bell, 2007; NICHD Early Child Care Research Network, 2003; Zhou, Eisenberg, Wang, & Reiser, 2004). Although conclusions about causation are not possible, correlational research focusing specifically on autonomy-supportive (vs. controlling) parenting suggests that such parenting may benefit children's executive functions. For example, Bernier, Carlson, and Whipple (2010) found that mothers' autonomy support when children were 12 to 15 months predicted children's executive functions at 18 and 26 months adjusting for children's general cognitive skills and mothers' educational attainment. Matte-Gagné and Bernier (2011) also examined mothers' autonomy support when children were 15 months; the more autonomy-supportive mothers were at this time, the better children's executive functions were at 36 months over and above their executive functions at 24 months as well as socioeconomic status (see also Hammond, Müller, Carpendale, Bibok, & Liebermann-Finestone, 2012).

Children's Executive Functions and Achievement

Children's executive functions are considered a critical ingredient in their achievement in school (e.g., Blair, 2002; Shonkoff & Phillips, 2000). Executive functions may support cognitive processes that are fundamental to learning. In the arena of math, Noël (2009) argues that executive functions facilitate simple arithmetic by, for example, helping children to keep their place while counting or glean the relevant information from a story problem. Executive functions may also benefit children's development in the area of literacy; for example, they may allow children to focus on individual letters and store the accompanying phonemic information to decode words (e.g., Nevo & Breznitz, 2011). Beyond supporting such cognitive processes, executive functions may support children in regulating their attention and behavior in a variety of learning environments; in the earliest years, this may be at home, with these skills transferring to the classroom once children start school, such that ultimately children engage productively in daily learning activities (e.g., McClelland & Cameron, 2011). Indeed, a correlational study showed that the association between children's executive functions and subsequent achievement across the transition to school was partially mediated by their learning-related behaviors (e.g., persistence) in the classroom even after adjusting for children's fluid intelligence (Neuenschwander, Röthlisberger, Cimeli, & Roebers, 2012; but see also Brock, Rimm-Kaufman, Nathanson, & Grimm, 2009).

Substantial research indicates that children's executive functions in preschool and kindergarten predict their later math and literacy achievement, even when accounting for a host of potential confounds (e.g., children's general intelligence and mothers' educational attainment) (e.g., Blair & Razza, 2007; Clark, Sheffield, Wiebe, & Espy, 2013; Fitzpatrick, McKinnon, Blair, & Willoughby, 2014; McClelland et al., 2006; Neuenschwander et al., 2012). For example, McClelland and colleagues (McClelland et al., 2007) demonstrated that children's executive functions in the fall of kindergarten predicted their math, vocabulary, and literacy achievement in the spring of kindergarten adjusting for their achievement in the fall as well as their gender and age; it also appeared that child care experience, parents' educational attainment, and minority status did not account for the predictive significance of children's executive functions. Thus, it is quite possible that the executive functions that ensue from autonomy-supportive parenting are responsible for the enhanced achievement among children that appears to be fostered by such parenting.

Is the Predictive Significance of Autonomy-Supportive Parenting Unique?

Although the prior correlational research suggesting that there are benefits of autonomy-supportive (vs. controlling) parenting for children's executive functions and achievement has taken into account a variety of potential confounds (e.g., Hess & McDevitt, 1984; Joussemet et al., 2005; Matte-Gagné & Bernier, 2011), such work has not adequately evaluated the possibility that the predictive significance of parents' autonomy support is due to other dimensions of parenting that co-occur with autonomy support. This is important to consider because autonomy-supportive parenting covaries with a suite of other parenting practices predictive of children's achievement (e.g., Moorman & Pomerantz, 2010;

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

NICHD Early Child Care Research Network, 1999, 2005; Pianta, Smith, & Reeve, 1991; Razza, Martin, & Brooks-Gunn, 2010). For example, the more autonomy supportive parents are, the warmer they tend to be toward children (e.g., Clark & Ladd, 2000; Steinberg et al., 1989). Autonomy-supportive parenting also co-occurs with parents' use of structure (e.g., Grolnick & Ryan, 1989)—that is, their organization of children's environment to facilitate children's competence via such practices as guidance and scaffolding—which often includes cognitive stimulation. Parents' warmth and cognitive stimulation have been linked to enhanced executive functions as well as achievement among children (e.g., Hindman & Morrison, 2012; Kochanska, Aksan, Prisco, & Adams, 2008; Landry, Miller-Loncar, Smith, & Swank, 2002). Hence, these dimensions of parenting are potential confounds in the effects of autonomy-supportive parenting.

This issue has not gone unnoticed in the research on parents' autonomy support (vs. control). Studying achievement, Steinberg and colleagues (1989) demonstrated that autonomy-supportive parenting predicted children's subsequent achievement over and above parents' warmth. Bernier and colleagues (2010) also took up this issue in their research on children's executive functions: In addition to examining mothers' autonomy support when children were 12 to 15 months, these investigators examined mothers' responsiveness (i.e., mothers' sensitivity to children's needs) and mind-mindedness (i.e., talk about thoughts and feelings) at this time. When the three types of parenting were tested simultaneously, they all predicted enhanced executive functions at 18 months, but by 26 months, only autonomy support did so. However, it is unclear if autonomy-supportive parenting was uniquely predictive because of the distinct effectiveness of such parenting or because, unlike the other dimensions of parenting, it was coded during an interaction between mothers and children around a cognitive task (i.e., a puzzle), which may have been more relevant than the other observational contexts (e.g., a free-play session) to the development of children's executive functions. Moreover, parents' cognitive stimulation has not been examined as a potential explanation for the apparent benefits of their autonomy support; however, cognitive stimulation may be particularly important as it focuses on developing the skills, including executive functions that foster achievement.

The Current Study

The major goal of this report was to examine the hypothesis that autonomy-supportive (vs. controlling) parenting enhances children's achievement by facilitating the development of children's executive functions. Our first set of analyses tested whether mothers' autonomy support during the first 3 years of life predicts children's executive functions before entering kindergarten and children's subsequent achievement, even when accounting for other dimensions of parenting (i.e., warmth and cognitive stimulation) that might also be important. In addition to a set of demographic covariates (i.e., child gender and ethnicity, family income-to-needs ratio, and maternal education), these analyses adjusted for early temperament and general cognitive skills (i.e., during 6 to 36 months when parenting was assessed) as these factors may contribute to parenting as well as children's executive functions and achievement (e.g., Calkins, Hungerford, & Dedmon, 2004; Eisenberg et al., 2010; Olson, Bates, Sandy, & Schilling, 2002). Our second set of analyses examined if children's executive functions mediated the link between autonomy-supportive parenting and children's subsequent achievement. To ensure that the mediating role of executive functions was unique, we evaluated whether two alternative mediators, a proxy for general cognitive skills (i.e., vocabulary) and three major dimensions of temperament before entering kindergarten (i.e., at 54 months when executive functions were assessed) accounted for the mediating role of executive functions.

Data from the NICHD Study of Early Child Care and Youth Development (SECCYD) were used. We used observational assessments of mothers' autonomy support (vs. control) during semi-structured tasks when children were 6 to 36 months. During this phase of development, children's executive functions are developing rapidly; thus, they may be particularly open to the effects of experiences with caregivers (e.g., Clark et al., 2013; Garon, Bryson, & Smith, 2008; Wiebe, Sheffield, & Espy, 2012). Such experiences likely need to be ongoing—for example, brief interludes of autonomy-supportive parenting are unlikely to provide the necessary support for the development of children's executive functions. Thus, we combined the assessments of parenting over the 6 to 36 months phase; this approach also reduces error relative to examining each assessment on its own (Rushton, Brainerd, & Pressley, 1983). Observations of mothers' warmth (vs. hostility) and cognitive stimulation during the same tasks as those in which observations of their autonomy support were available, permitting a more stringent evaluation of whether autonomy-supportive parenting exerts a unique effect than has been possible in prior research in which different dimensions of parenting have been confounded with observational context.

Several measures of executive functions just before children entering kindergarten (i.e., 54 months) were the focus of this report. Although there is considerable debate regarding the structure of executive functions during these early years (see Hughes, 2011), evidence suggests that the component skills (i.e., inhibition, working memory, and cognitive flexibility) of executive functions at this time are best characterized as a single construct (e.g., Blair et al., 2011; Willoughby, Blair, Wirth, & Greenberg, 2011). Moreover, it has been argued that using an aggregate measure of executive functions reduces error specific to a given assessment tool (Carlson, Mandell, & Williams, 2004; Cuevas et al., 2013; Dilworth-Bart, 2012). Thus, we combined the SECCYD prekindergarten executive functions measures (i.e., inhibition, delay of gratification, and sustained attention) into a single, reliable latent construct. Children's achievement during both elementary and high school was investigated. This is a substantial improvement over prior research examining whether children's executive functions underlie aspects of the home environment given that previous studies have looked at only proximal achievement by using assessments just before or at kindergarten (e.g., Dilworth-Bart, 2012; NICHD Early Child Care Research Network, 2003; Razza et al., 2010; Razza & Raymond, 2013).

Method

Participants

Mothers were recruited for the NICHD SECCYD after giving birth in 30 hospitals in 10 locations throughout the United States

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

(Little Rock, AR; Irvine, CA; Lawrence, KS; Boston, MA; Philadelphia, PA; Pittsburgh, PA; Charlottesville, VA; Morganton, NC; Seattle, WA; and Madison, WI). This strategy yielded a sample of 1,364 infants and their mothers (for further sampling and recruitment details, see http://secc.rti.org). The analyses in this report used assessments from Phase 1 (birth to 3 years), Phase 2 (54 months to 1st grade), Phase 3 (2nd to 6th grade), and Phase 4 (age 15 years) of the study. Analyses were conducted on the 1,306 mother–child dyads who participated in at least one semistructured observation of parenting during Phase 1 (for sample sizes at each time point, see Tables 1 and 2). Mothers in the dyads participating in at least one semistructured observation of parenting during Phase 1 were more educated than those who did not do so, $t(1361) = 3.32$, $p < .01$, but otherwise the dyads did not differ on the variables included in this report. Children (52% male) were predominantly (77%) European American, with 12% being African American, 6% Hispanic, and 5% other ethnicities. Mothers' educational attainment ranged from seven to 21 years ($M = 14.28$, $SD = 2.50$): 10% of mothers had less than a high school degree, 21% had a high school degree, 55% had completed some college or earned a 4-year degree, and 15% had completed some graduate work or at least a master's degree. At Phase 1, 11% of the families were below the poverty threshold based on calculation of the income-to-needs ratio (i.e., the family's income relative to the federal poverty line).

Procedure

Trained researchers collected data from children and mothers in the home and lab during each of the four phases of the study analyzed in this report. Mothers' parenting was assessed at Phase 1 via videotaped observations when children were 6, 15, 24, and 36 months. Children's executive functions were measured in the lab at Phase 2 when children were 54 months; the alternative mediators (i.e., children's temperament and general cognitive skills) were also assessed at this time. Woodcock-Johnson assessments of children's achievement in the lab from Phase 2 and Phase 3 during elementary school (i.e., 1st, 3rd, and 5th grades) and Phase 4 during high school (i.e., age 15 years) were used. Covariates included infants' difficult temperament as reported by mothers when children were 6 months and children's early general cognitive skills measured with the Bayley Mental Developmental Index administered in the lab when children were 15 months.

Table 1
Descriptive Statistics for the Parent Variables

	N	*M* (*SD*)	ICC
Parenting variables			
Autonomy support			
6 months	1272	3.41 (0.78)	.65
15 months	1240	3.56 (0.73)	.77
24 months	1172	3.52 (0.72)	.69
36 months	1161	5.29 (1.10)	.72
Warmth			
6 months	1272	3.38 (0.41)	.83
15 months	1240	3.37 (0.39)	.65
24 months	1172	3.29 (0.53)	.76
36 months	1161	6.62 (0.82)	.82
Cognitive stimulation			
6 months	1272	2.59 (0.66)	.92
15 months	1240	2.67 (0.62)	.69
24 months	1172	2.71 (0.74)	.72
36 months	1161	4.47 (1.44)	.78
Demographics			
Maternal education at 1 month (years)	1306	14.28 (2.50)	—
Average income-to-needs ratio from 1–36 months	1302	3.62 (2.87)	—

Note. ICC = Intraclass correlation. Parenting ratings at 6, 15, and 24 months ranged from 1 to 4. Ratings at 36 months ranged from 1 to 7. Autonomy support was assessed using intrusiveness (reverse-coded) at 6, 15, and 24 months and support for autonomy at 36 months. Warmth was calculated using positive and negative regard codes at 6, 15, and 24 months; the average ICC for the positive and negative regard codes is presented. At 36 months, warmth was calculated using reverse scores of hostility.

Measures

Descriptive statistics and correlations for the measures are presented in Tables 1–3.

Maternal parenting. Mothers' parenting was observed during 15-min, semistructured play interactions in the home when children were 6 and 15 months and in the lab when children were 24 and 36 months. At 6 months, mothers and children spent the first 7 min of the interaction in free play, and then were given a standardized set of toys (e.g., a stuffed animal and a picture book) with which to play for the remaining 8 min. At 15, 24, and 36 months, mothers were given a set of three boxes, each containing a toy or activity (e.g., storybook and a toy kitchen) and were told to go through each of the boxes in order, interacting with children as little or as much as they wanted. Mothers' behavior during these interactions was coded for autonomy support (vs. control), warmth (vs. hostility), and cognitive stimulation by coders who had participated in intensive training and who met frequently to prevent drift (for the intraclass correlations between coders, see Table 1). At 6, 15, and 24 months, each dimension was coded on a scale from 1 (*not at all characteristic*) to 4 (*very characteristic*). At 36 months, each was coded on a 7-point scale (1 = *not at all characteristic* to 7 = *very characteristic*; for more information about the coding procedures see NICHD Early Child Care Research Network, 1999).

When children were 6, 15, and 24 months, mothers' behavior was coded for intrusiveness, which was operationalized as hurrying children, promoting their own (vs. children's) goals for the activity, stopping children's play and redirecting it without explanation, or issuing strict punishments regardless of the severity of children's misbehavior. Mothers' support for children's autonomy was coded when children were 36 months; autonomy-supportive practices included flexibility on the part of mothers, following children's pace and interests in the joint activity, and allowing children to take the lead when appropriate. An *autonomy-supportive* (vs. *controlling*) index was computed by averaging the standardized ratings across the four time points after reverse-scoring the intrusiveness ratings, such that higher numbers reflect heightened autonomy-supportive parenting. The autonomy support scores at the four time points were nontrivially correlated (rs = .22 to .37, ps < .001).

At the 6-, 15-, and 24-month observations, mothers' *warmth* (vs. *hostility*) was captured with positive and negative regard codes. Positive regard was operationalized as the use of a positive tone of voice, positive facial expression, physical affection, or praise when

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 2
Descriptive Statistics for the Child Variables

	N	*M* (*SD*)	Reliability
Executive functions (54 months)			
CPT inhibition errors (reverse-scored)	1002	205.81 (21.30)	.65 to .74[a]
CPT sustained attention errors (reverse-scored)	1002	210.87 (7.59)	.65 to .74[a]
Delay of gratification (minutes waited)	961	4.48 (3.01)	—
Stroop (percent correct)	838	74.66 (20.53)	.79[b]
Academic achievement (*W* scores)			.80 to .87[a]
Elementary school			
1st grade reading	1025	463.26 (20.06)	—
1st grade math	1023	470.05 (15.54)	—
3rd grade reading	1008	494.58 (15.12)	—
3rd grade math	1007	493.59 (12.57)	—
5th grade reading	989	507.60 (14.18)	—
5th grade math	989	510.56 (12.80)	—
High school			
Reading	883	520.35 (12.44)	—
Math	883	524.52 (16.72)	—
Temperament			
Child difficult temperament (6 months)	1279	3.18 (0.40)	.81[b]
Negative affectivity (54 months)	1060	4.30 (0.64)	.60 to .76[b]
Surgency/extraversion (54 months)	1057	4.81 (0.62)	.70 to .85[b]
Effortful control (54 months)	1061	4.68 (0.71)	.74 to .75[b]
General cognitive skills			
Bayley Mental Development Index (15 months)	1180	108.58 (14.07)	>.80[c]
Picture vocabulary (*W* score, 54 months)	1060	459.54 (14.09)	≥.80[a]

Note. When no reliability information is provided, appropriate reliability information was not available for the NICHD SECCYD.
[a] Test–retest reliability. [b] Internal consistency reliability (coefficient α). [c] Split-half reliability.

working with children. Conversely, negative regard captured the frequency and intensity of mothers' negative affect directed toward children, either in the form of negative emotions such as anger or rough physical actions. At 36 months, only hostility was coded; the focus was on mothers' negative emotions including anger and rejection of children (e.g., visible irritation with children, provision of negative feedback about children's performance, or blaming children for not doing well). The negative regard and hostility codes were reverse scored to reflect warmth. The standardized scores were then averaged over the four time points to create an index of mothers' warmth (vs. hostility), with higher numbers reflecting heightened warmth. The scores at the four different time points were nontrivially correlated (*r*s = .25 to .36, *p*s < .001).

At all four time points mothers' *cognitive stimulation* was operationalized as their efforts to teach children in ways that would facilitate their cognitive development. Examples of behaviors coded as cognitive stimulation are helping children focus on a task or object, pointing out unique features or characteristics of the toy or activity, and responding to and elaborating on children's ver-

Table 3
Correlations Between Indicators in the Central SEM Models

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Autonomy support	—														
2. Warmth	.57***	—													
3. Cognitive stimulation	.34***	.58***	—												
4. CPT inhibition	.20***	.20***	.17***	—											
5. CPT sustained attention	.20***	.15***	.20***	.24***	—										
6. Delay of gratification	.29***	.27***	.28***	.31***	.24***	—									
7. Stroop	.09**	.08*	.05	.16***	.08*	.12**	—								
8. Elementary reading	.26***	.29***	.26***	.22***	.22***	.23***	.09*	—							
9. Elementary math	.30***	.30***	.29***	.24***	.27***	.27***	.09**	.76***	—						
10. High school reading	.39***	.35***	.32***	.24***	.22***	.31***	.09*	.62***	.62***	—					
11. High school math	.35***	.29***	.28***	.18***	.20***	.27***	.10**	.53***	.72***	.69***	—				
12. Maternal education	.41***	.41***	.43***	.21***	.18***	.25***	.12***	.34***	.37***	.40***	.40***	—			
13. Income-to-needs	.32***	.34***	.33***	.14***	.13***	.23***	.10**	.27***	.31***	.32***	.31***	.54***	—		
14. Infant difficult temperament	−.17***	−.14***	−.17***	−.06*	−.06	−.08*	.03	−.13***	−.13***	−.13***	−.16***	−.14***	−.15***	—	
15. Bayley MDI	.20***	.18***	.24***	.20***	.20***	.20***	.07*	.24***	.30***	.27***	.24***	.13***	.14**	−.06*	—

* $p < .05$. ** $p < .01$. *** $p < .001$.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 4
Fit Statistics for the SEM Models

Model	χ^2	CFI	TLI	RMSEA
Parenting predicting executive functions				
Models with one dimension of parenting and covariates				
Autonomy support	88.84	.963	.905	.043
Warmth	87.68	.962	.908	.042
Cognitive stimulation	89.37	.962	.903	.043
Model with three dimensions of parenting and covariates	103.06	.976	.935	.040
Parenting predicting elementary achievement				
Models with one dimension of parenting and covariates				
Autonomy support	23.16	.994	.975	.032
Warmth	25.45	.994	.974	.032
Cognitive stimulation	16.90	.995	.978	.029
Model with three dimensions of parenting and covariates	30.59	.995	.975	.032
Parenting predicting high school achievement				
Models with one dimension of parenting and covariates				
Autonomy support	37.56	.986	.937	.046
Warmth	43.44	.983	.929	.047
Cognitive stimulation	38.50	.985	.933	.047
Model with three dimensions of parenting and covariates	43.70	.991	.952	.043
Mediation models				
Model predicting elementary achievement				
Model without vocabulary and temperament 54 months	115.10	.975	.941	.039
Model with vocabulary and temperament at 54 months	145.70	.977	.937	.036
Model predicting high school achievement				
Model without vocabulary and temperament 54 months	123.16	.968	.925	.041
Model with vocabulary and temperament at 54 months	153.80	.973	.924	.037

Note. All models included maternal education, ethnicity, income-to-needs ratio, child gender, difficult temperament at 6 months, and Bayley Mental Development Index score at 15 months as covariates.

balizations. The standardized scores from each time point were averaged to create an index of mothers' cognitive stimulation, with higher numbers reflecting heightened cognitive stimulation on the part of mothers. The assessments of cognitive stimulation at the four different time points were nontrivially correlated (rs = .22 to .38, ps < .001).

Child executive functions. The Day-Night Stroop task, delay of gratification task, and Continuous Performance Test (CPT) were used to assess executive functions when children were 54 months. Four measures of executive functions were drawn from these tasks. The Day-Night Stroop task is primarily a measure of inhibition (Gerstadt, Hong, & Diamond, 1994). Children were shown a picture of a moon and stars or a picture of a sun. They were instructed to say "day" when they saw the moon and stars and "night" when they saw the sun. There were two practice trials followed by 16 test trials with half being day and half night. The

Table 5
SEM Results for Early (6 to 36 Months) Parenting Predicting Children's Later (54 Months) Executive Functions

	B	*SE*	β
Covariates			
Maternal education (years)	0.06	0.02	.18***
Ethnicity (European-American = −1, all others = 1)	−0.11	0.04	−.11**
Income-to-needs ratio	0.03	0.01	.09*
Child gender (boys = −1, girls = 1)	0.20	0.03	.23***
Child difficult temperament at 6 months	0.01	0.08	.01
Bayley Mental Development Index at 15 months	0.01	0.00	.20***
Parenting at 6 to 36 months			
Autonomy support			
Model with covariates only	0.24	0.05	.20***
Model with other dimensions of parenting and covariates	0.18	0.06	.16**
Warmth			
Model with covariates only	0.22	0.05	.19***
Model with other dimensions of parenting and covariates	0.07	0.06	.07
Cognitive stimulation			
Model with covariates only	0.20	0.05	.17***
Model with other dimensions of parenting and covariates	0.14	0.06	.12*

* $p < .05$. ** $p < .01$. *** $p < .001$.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 6
SEM Results for Early (6 to 36 Months) Parenting Predicting Children's Elementary and High School Achievement

	Elementary school			High school		
	B	*SE*	β	B	*SE*	β
Covariates						
Maternal education (years)	1.18	0.20	.21***	1.17	0.17	.28***
Ethnicity (European-American = −1, all others = 1)	−0.90	0.50	−.05	−1.41	0.42	−.11***
Income-to-needs ratio	0.50	0.16	.10**	0.31	0.14	.09*
Child gender (boys = −1, girls = 1)	−0.78	0.39	−.06*	−1.06	0.33	−.10**
Child difficult temperament at 6 months	−1.56	0.97	−.05	−0.86	0.83	−.03
Bayley Mental Development Index at 15 months	0.22	0.03	.22***	0.15	0.03	.20***
Parenting practices at 6 to 36 months						
Autonomy support						
Model with covariates only	2.42	0.61	.13***	3.31	0.52	.23***
Model with other dimensions of parenting and covariates	1.79	0.68	.09**	3.03	0.58	.21***
Warmth						
Model with covariates only	2.35	0.59	.13***	2.08	0.50	.15***
Model with other dimensions of parenting and covariates	1.07	0.72	.06	0.33	0.61	.02
Cognitive stimulation						
Model with covariates only	1.78	0.61	.09**	1.43	0.52	.10**
Model with other dimensions of parenting and covariates	1.07	0.67	.06	0.88	0.58	.06

* $p < .05$. ** $p < .01$. *** $p < .001$.

percent of the 16 test items correctly answered was calculated, with higher scores reflecting stronger executive functions ($\alpha = .79$).

Using Mischel, Shoda, and Rodriguez's (1989) well-validated paradigm for assessing children's delay of gratification, children were brought to a testing room where they chose their preferred snack (i.e., animal crackers, M&Ms, or pretzels). A trained research assistant then set out two plates, one with a small pile of the treat and one with a big pile. Children were given a bell and told that if they rang it before the assistant returned, they would get to eat the smaller pile of food. Alternatively, if they waited until the assistant returned (i.e., 7 min), they would get to eat the larger pile. The length of time children waited before ringing the bell (or 7 min if the child did not ring the bell) was used to index executive functions, with higher numbers indicating better inhibition skills.

In the CPT task, children viewed pictures of familiar items (e.g., a flower or butterfly) on a two-inch computer screen and were told to press a key only when they saw the target picture, which was a chair. There were 10 items per block, and 22 blocks of items, with each item presented for 500 ms with a 1,500 ms fixation cross between items. The CPT required approximately 7 min, 20 s to complete. Two measures of executive functions were gathered from this task: (a) inhibition, which was operationalized as the number of incorrect button presses, or "commission errors" made and (b) sustained attention—that is, the number of omission errors, or target items missed. Some children were not able to complete all

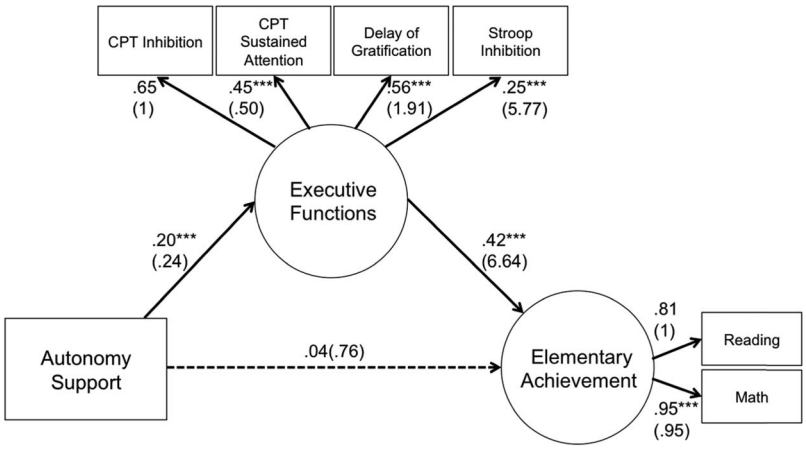


Figure 1. Mediational model predicting elementary school achievement. Coefficients outside parentheses are standardized; coefficients in parentheses are unstandardized. Covariates included maternal education, ethnicity, income-to-needs ratio, child gender, difficult temperament at 6 months, and Bayley Mental Development Index score at 15 months. *** $p < .001$.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

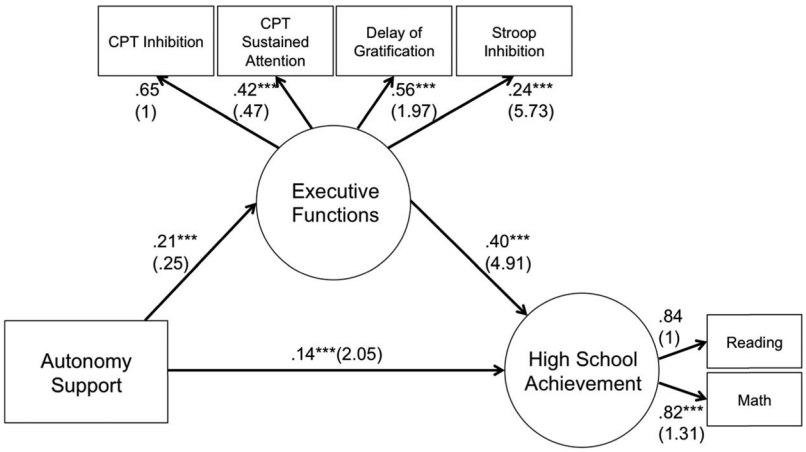


Figure 2. Mediational model predicting high school achievement. Coefficients outside parentheses are standardized; coefficients in parentheses are unstandardized. Covariates included maternal education, ethnicity, income-to-needs ratio, child gender, difficult temperament at 6 months, and Bayley Mental Development Index score at 15 months. *** $p < .001$.

220 items; all children who completed at least 110 items were assigned scores that were scaled to 220 items. Because these two sets of scores were highly skewed, natural log transformations were used (see NICHD Early Child Care Research Network, 2003, 2005). Each was then reverse-scored so that higher numbers reflect stronger executive functions.

In line with prior approaches that have used multiple executive functions measures (Blair et al., 2011; Carlson et al., 2004; Cuevas et al., 2013; Willoughby et al., 2011), the four measures were combined into a single latent construct, with the standardized loadings ranging from .24 to .64. Pairwise correlations between the two CPT measures and the delay of gratification measure were moderate (rs = .27 to .33, ps < .05), but the Day-Night Stroop scores correlated weakly with the other measures (rs = .07 to .22, ps < .05). Dropping the Day-Night Stroop scores from the construct did not notably change the results of the central analyses.

Child achievement. Children's achievement was assessed using subtests from the Woodcock-Johnson Psycho-Educational Battery (Woodcock & Johnson, 1990). *Elementary school achievement* was assessed at the 1st, 3rd, and 5th grades. Math achievement was indexed with scores on the Applied Problems subtest (i.e., math word problems), and the Calculation subtest (available only at 3rd and 5th grade), which includes basic math operations (e.g., addition and division). Reading achievement was indexed with scores on the Letter-Word subtest, which assesses children's ability to decode letters and words, as well as the Passage Comprehension subtest (available only at 3rd and 5th grade), and the Word Attack subtest (available only at 3rd and 5th grade), which requires children to read nonwords aloud using their phonological skills. *High school achievement* was assessed when children were 15 years, with the Applied Problems subtest for math and the Passage Comprehension for reading. The raw scores from each subtest were transformed into *W* scores, which are a specialized version of the Rasch ability scale centered on 500 (i.e., the average achievement level for 10 years). For both math and reading, the achievement scores were substantially associated over time during the elementary school years (rs = .50 to .86, ps < .001); thus, the average over the three grades was taken, with higher numbers reflecting higher achievement in each area. Latent constructs of elementary and high school achievement were created using the math and reading achievement test scores as indicators.

Child temperament. Ratings of children's temperament at 6 months made with an adapted version of the Early Infant Temperament Questionnaire Revised (Carey & McDevitt, 1978) were used as a covariate. Mothers rated how often (1 = *almost never* to 6 = *almost always*) children displayed behaviors reflecting high levels of activity and energy, withdrawal from (vs. approach to) new stimuli and people, adaptability (i.e., how easily children's reactions to stimuli can be modified when desired by the caregiver, and negative emotions (e.g., "My baby lies still [little squirming] when held in my arms between feedings" and "My baby objects [cries, frets] if someone other than myself gives care"). Following Pluess and Belsky (2010), the mean of the 39 items (reverse-scoring when necessary), was used as an index of difficult temperament, with higher values representing heightened difficulty (α = .81).

Children's temperament was assessed at 54 months with mothers' reports on a shortened version of the Children's Behavior Questionnaire (CBQ; Rothbart, Ahadi, & Hershey, 1994). Mothers rated (1 = *extremely untrue* to 7 = *extremely true*) items regarding children's behavior in the past 6 months. In line with procedures used by Honomichl and Donnellan (2011), who replicated previous factor analyses of longer versions of the CBQ (Rothbart, Ahadi, Hershey, & Fisher, 2001) using the NICHD SECCYD data, three scales were created: (a) Negative affectivity was comprised of the 30 items from the fear, sadness, and anger/frustration subscales (e.g., "Cries sadly when favorite toy gets lost"); (b) surgency/extraversion was comprised of the 28 items from the shyness (reverse-scored), activity level, and approach/anticipation subscales (e.g., "Seems to be at ease with almost any person"); (c) effortful control was comprised of the 18 items from the attention focus and inhibitory control subscales (e.g., "Can wait before entering a new activity").

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Child general cognitive skills. Standardized scores from the Bayley Mental Development Index (MDI; Bayley, 1991) administered in the home when children were 15 months were used to assess children's early general cognitive skills. The MDI assesses several dimensions of infants' cognitive skills including memory and learning, verbal skills, and the ability to form categories. Split-half reliability coefficients reported for the standardization sample of 2- to 30-month-olds exceeded .80.

The *W* score from the Woodcock-Johnson Picture Vocabulary (Woodcock & Johnson, 1990) subtest administered in the lab at 54 months was used as a proxy for children's general cognitive abilities just before formal school entry. This subtest requires children to recognize or name pictures of familiar and unfamiliar objects. Vocabulary knowledge is considered to reflect crystallized intelligence; it is also strongly predictive of general cognitive skills (Marchman & Fernald, 2008). As a consequence, vocabulary is widely used as a covariate in studies seeking to isolate executive functions from aspects of general cognitive ability including verbal skills and intelligence (e.g., Bernier, Carlson, Deschênes, & Matte-Gagné, 2012; Blair, Granger, & Peters Razza, 2005; Blair et al., 2011; Blair & Razza, 2007; Brock et al., 2009; Miller, Müller, Giesbrecht, Carpendale, & Kerns, 2013; Nesbitt, Baker-Ward, & Willoughby, 2013).

Demographics. Mothers' provision of demographic information allowed for their educational attainment (i.e., years of education) at 1 month and average family income-to-needs ratio across Phase 1 of the study, as well as children's gender and ethnicity, to be used as covariates.

Results

Two sets of analyses were conducted. In the first, we evaluated whether mothers' early (i.e., 6 to 36 months) autonomy support (vs. control) predicts children's subsequent executive functions (i.e., 54 months) and achievement (i.e., elementary and high school) when taking into account mothers' early warmth (vs. hostility) and cognitive stimulation as well as the covariates. The second set tested whether children's executive functions mediated the effect of mothers' early autonomy support on children's achievement in elementary and high school, with attention to the confounding role of children's temperament and general cognitive skills. The analyses were conducted with structural equation modeling (SEM) using version 21 of AMOS (Arbuckle, 2011), which uses full information maximum likelihood estimation (FIML) in the presence of missing data; FIML provides more reliable standard errors to handle missing data under a wider range of conditions than does either listwise or pairwise deletion or mean imputation (Arbuckle, 1996; Wothke, 2000). Observed (i.e., manifest) variables were used for each of the dimensions of parenting as well as the covariates; as described earlier (see Method), latent constructs were used for executive functions and achievement (see Figures 1 and 2). As shown in Table 4, all the models fit well.

The Predictive Significance of Mothers' Autonomy-Supportive Parenting

Children's executive functions. Three separate initial models were used to test the effects of each dimension of mothers' parenting on children's executive functions. In each, only one dimension of parenting was included as a predictor of children's executive functions. Each model took into account the covariates assessed before or at the time of parenting (i.e., temperament at 6 months, general cognitive skills at 15 months, maternal educational attainment, income-to-needs ratio, and child gender and ethnicity), which were allowed to covary with the included parenting dimension. Covariates were allowed to correlate with one another only if a significant correlation was evident in preliminary analyses; this resulted in all covariates being intercorrelated with the exception of children's gender, which was correlated only with general cognitive skills at 15 months. The covariates were also included in the models as predictors of children's executive functions. As shown in Table 5, when considered independently, mothers' early autonomy support, warmth, and cognitive stimulation all predicted children's subsequent executive functions, such that the more mothers were autonomy supportive (vs. controlling), warm (vs. hostile), or cognitive stimulating early in children's lives the better children's executive functions before entering kindergarten over and above the covariates.

Given that the three dimensions of parenting were moderately to strongly correlated (rs = .34 to .58, ps < .001), we next evaluated whether the effect of autonomy-supportive parenting was unique or due to its overlap with warm and cognitive stimulating parenting. To this end, we tested a model in which all three dimensions of early parenting simultaneously predicted children's executive functions at 54 months. The three dimensions were allowed to covary with one another as well as with the covariates assessed before or at the time of parenting, which were also included as predictors of children's executive functions as in the earlier models. Mothers' early autonomy support and cognitive stimulation both predicted enhanced executive functions at 54 months, but mothers' warmth did not do so (see Table 5).

Children's achievement. Models identical to those for children's executive functioning were used to examine the role of the three dimensions of parenting in children's achievement, with separate models for children's elementary and high school achievement. Paralleling the results for children's executive functions, as shown in Table 6, the more autonomy supportive, warm, and cognitively stimulating mothers were early in children's lives, the better children's achievement in elementary and high school, over and above the covariates. Notably, the effects of mothers' autonomy support on children's achievement during elementary and high school held up when the two other dimensions of parenting were included in the models (see Table 6). However, neither warmth nor cognitive stimulation was predictive of children's achievement with the other dimensions of parenting in the model.

Supplementary analyses. Further analyses were conducted to test the contribution of each dimension of parenting at each time point (i.e., 6, 15, 24, and 36 months) included in the composites of early parenting to children's executive functions and achievement. In the models examining autonomy-supportive parenting without the other dimensions of parenting, autonomy support always positively predicted children's executive functions and achievement, with this association being significant 83% of the time (i.e., in 10 out of 12 analyses). When the other dimensions of parenting were included, autonomy-supportive parenting positively predicted children's executive functioning and achievement, with the exception of

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

one nonsignificant, negative association. The association was significant 75% of the time (i.e., 9 out of 12). There was not a consistent tendency for autonomy-supportive parenting to be significant at some time points, but not others (see Part A of the online Supplementary Materials).

The Mediating Role of Children's Executive Functions

Our next set of analyses tested whether children's executive functions accounted for the positive associations between early autonomy-supportive (vs. controlling) parenting and children's later achievement. To examine this possibility, mediation analyses were conducted following Baron and Kenny's (1986) guidelines (see also Shrout & Bolger, 2002). We already demonstrated evidence of the total effect in finding that early autonomy-supportive parenting predicts children's enhanced achievement during elementary and high school adjusting for the covariates (see Table 6). In addition, we also established partial evidence for the indirect effect: Mothers' early autonomy support predicted more advanced executive functions among children before kindergarten (see Table 5). In the context of SEM, we examined the indirect effect as a whole. As shown in Figures 1 and 2, we added executive functions to the model predicting children's achievement from mothers' autonomy support, such that children's executive functions were predicted by mothers' earlier autonomy support with children's executive functions also predicting their later achievement. In these models, the covariates were correlated with one another and mothers' autonomy support as in the earlier models (see above); in addition, the covariates were included as predictors of children's executive functions and achievement.

The mediation models for both elementary and high school achievement indicated that the better children's executive functions at 54 months, the better their achievement during elementary and high school, taking into account mothers' autonomy support as well as the covariates (see Figures 1 and 2). The direct effect of mothers' early autonomy support on children's achievement during elementary school was reduced to nonsignificance ($\beta = .04$, $t = 1.41$, *ns*) with children's executive functions in the model accounting for 69% of the total effect. The Sobel test indicated that the indirect effect of autonomy support on elementary-school achievement via executive functions was significant, $Z = 3.70$, $p < .001$. A similar pattern was evident for children's achievement in high school, but mediation was only partial (see Table 6): Children's executive functions accounted for 39% of the effect of mothers' autonomy support on children's high school achievement; however, the direct effect remained significant ($\beta = .14$, $t = 3.62$, $p < .001$) with children's execution functions in the model. The Sobel test revealed a significant indirect effect of autonomy support on high school achievement through executive functions, $Z = 3.57$, $p < .001$.

Supplemental analyses. We conducted two sets of supplemental analyses. First, to verify that the indirect effects in the mediation models did not vary for the four indicators (i.e., CPT inhibition, CPT sustained attention, Stroop, and Delay of Gratification) of the latent executive functions construct, we tested additional models using each executive function assessment as an observed mediator. When predicting both elementary and high school achievement, there were significant indirect effects through all the indicators of executive functions, $Zs > 2.10$, $p < .05$, with the exception of the Stroop task ($Zs < 1.18$, *ns*; see Part B of the online Supplementary Material).

Second, we evaluated the possibility that the mediating role of executive functions was due to other attributes of children that covary with their executive functions. To this end, we added the three scales of children's temperament (i.e., negative affectivity, surgency/extraversion, and effortful control) and the Woodcock-Johnson Picture Vocabulary scores at 54 months to the existing models as mediators (see Part C of the online Supplementary Material). The errors of the three dimensions of temperament and the vocabulary scores were allowed to covary with one another, executive functions, and the covariates. When accounting for the three dimensions of temperament and the vocabulary scores, the links between children's executive functions and achievement were reduced but remained significant ($\beta = .39$ for elementary school achievement and $\beta = .32$ for high school achievement, $ts > 4.34$, $ps < .001$). The indirect path from autonomy support to children's achievement in elementary and high school via children's executive functions also remained significant as evidenced by Sobel tests, $Zs > 3.19$, $ps < .01$. The indirect pathways via executive functions accounted for 60% of the total effect for children's achievement in elementary and 28% of the total effect for children's achievement in high school.

Discussion

There is much evidence that parents' support of children's autonomy predicts heightened achievement among children over time (for a review, see Pomerantz et al., 2005). However, the issue of why such an association reliably occurs has received limited empirical attention. The current research provides support for the idea that autonomy-supportive parenting may enhance children's achievement by promoting the development of children's executive functions—that is, core cognitive skills that allow children to manage their attention and behavior. Mothers' autonomy support (vs. control) over the first 3 years of children's lives predicted children's achievement not only in elementary school, but also in high school, over and above children's early general cognitive skills and temperament as well as a number of demographic factors (e.g., mothers' educational attainment). Notably, the association between early autonomy-supportive parenting and children's achievement during elementary and high school was accounted for in part by enhanced executive functions among children before kindergarten entry. The predictive significance of mothers' autonomy support was not entirely attributable to mothers' early warmth or cognitive stimulation, pointing to the unique role of mothers' autonomy support.

Given the robust evidence from correlational research in line with the idea that early executive functions play an important role in children's development in a variety of areas (e.g., Blair & Razza, 2007; Moffitt et al., 2011), a key question is how the environment shapes these skills. To this end, there has been much attention to parenting, with prior correlational research suggesting that autonomy support (vs. control) may promote children's executive functions (e.g., Bernier et al., 2010; Hammond et al., 2012; Matte-Gagné & Bernier, 2011). Similarly, in the current research, autonomy-supportive parenting predicted children's executive functions over time taking into account children's early general cognitive skills and temperament as well as several demographic

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

factors (i.e., child gender, ethnicity, income-to-needs, and maternal education). Extending prior research, we also controlled for other dimensions of parenting (i.e., warmth and cognitive stimulation) associated with autonomy-supportive parenting (e.g., Moorman & Pomerantz, 2010; Razza et al., 2010). A key improvement over prior research is that all the dimensions of parenting were assessed during the *same* interaction such that the parenting dimensions and contexts of assessment were not confounded. Our examination of mothers' cognitive stimulation was of particular import as it has not received attention in prior research on autonomy-supportive parenting, but may have consequences for children's executive functions as it is focused on developing these and other cognitive skills. Notably, in the current research, the effects of mothers' autonomy support were unique in that they were not due to mothers' warmth or cognitive stimulation, although the latter also had a unique effect.

The positive association between early autonomy-supportive parenting and children's subsequent executive functions is important not only in and of itself, but because it may be through children's executive functions that such parenting benefits children's achievement as they navigate the school system. Consistent with prior research (e.g., Grolnick & Ryan, 1989; Grolnick et al., 1991), the more autonomy supportive mothers were, the higher children subsequently scored on standardized achievement tests in the current research. Notably, the predictive value of early autonomy-supportive parenting was evident for children's achievement in elementary school as well as high school. As was the case for children's executive functions, mothers' autonomy support predicted children's achievement over time after accounting for mothers' warmth and cognitive stimulation in addition to other important covariates. In line with our perspective that parenting needs to be ongoing over time to provide the necessary support for the development of children's executive functions thereby fostering their achievement, our index of early parenting combined parenting across four time points (i.e., 6, 15, 24, and 36 months) over the first 3 years of children's lives. Although the four observations were only modestly correlated with one another, this approach is useful in that it reduces error (Rushton et al., 1983). Moreover, further analyses indicated that autonomy-supportive parenting at the different time points generally predicted children's executive functions and achievement similarly (see Part A of the online Supplementary Material). However, to make conclusions about differences in the role of autonomy-supportive parenting at different points over the first 3 years of children's lives, further research would be needed to ensure that the coding of autonomy support at the different points was equivalent given that parents' practices and the contexts in which they use them may vary with children's age (i.e., allowing children to choose toys before they are mobile vs. allowing them to explore their environment once they are mobile vs. allowing them to take the lead on solving problems once more cognitive tasks are introduced).

In line with extant research (e.g., Bernier et al., 2010; Joussemet et al., 2005), the effect sizes for the links between autonomy-supportive parenting and children's executive functions and achievement were nontrivial, but in the small range. For executive functions, the effects of autonomy support as well as other forms of parenting were close in size to mothers' educational attainment as well as children's early general cognitive skills (i.e., the Bayley Mental Development Index at 15 months), suggesting that all these factors—as well as others—may jointly contribute to children's executive functions. A similar picture emerged when predicting achievement, but the effects of autonomy-supportive parenting were sometimes smaller than those of mothers' educational attainment and children's early general cognitive skills. Thus, although autonomy-supportive parenting was a unique predictor of children's executive functions and achievement in that its effects were not due to a variety of potential confounds, it appears to be only one of several contributors to children's executive functions and achievement.

The unique contribution of the current research is in showing that the association between mothers' autonomy support and children's subsequent achievement was at least in part accounted for by children's earlier executive functions. This finding held even when testing more complex models accounting for the potentially confounding role of children's general cognitive skills (i.e., vocabulary) and temperament assessed concurrently to executive functions. For children's elementary school achievement, their executive functions before kindergarten reduced the total effect to nonsignificance. For children's high school achievement, the total effect was also reduced, but remained significant. However, the total effect was larger for high school (vs. elementary school) achievement suggesting that, despite the longer time lag, parents' autonomy support is more important for children's achievement during this phase of development for other reasons than the benefits it appears to confer on children's executive functions. For example, the transition to high school can often be challenging for children (for a review, see Benner, 2011) and the autonomous foundation established by early autonomy supportive parenting—and likely maintained over time—may allow children to navigate the difficulties successfully by keeping them interested and engaged.

The current findings add to several studies providing evidence that children's executive functions serve as a mechanism by which children's home environment may contribute to their achievement (e.g., Dilworth-Bart, 2012; Razza et al., 2010). For example, an earlier analysis of the NICHD SECCYD data demonstrated that children's sustained attention and inhibition skills (assessed via only the CPT) at 54 months partially mediated the association between a composite of several measures of the early home environment and children's achievement in kindergarten (NICHD Early Child Care Research Network, 2003). The current research extends such research in two major ways. First, it focuses specifically on mothers' autonomy support rather than the home environment (e.g., learning materials and the physical environment) or parenting in general (e.g., sensitivity that includes responsiveness, autonomy support, and warmth). As such, it is suggestive of the unique role that autonomy-supportive parenting plays in setting the foundation for children's achievement via their executive functions. Second, prior research has not examined children's achievement beyond kindergarten, with children's executive functions and achievement often being assessed contemporaneously. Thus, it was unclear if the executive functions established by the home environment foreshadowed children's achievement over time. The current research indicates the predictive value of autonomy-supportive parenting is sustained as children move into elementary and even high school.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Limitations and Future Directions

The current research has several limitations that should be considered in interpreting the findings. For one, because the parenting data were collected through observations in structured tasks, mothers in the study may not have demonstrated the full range of their parenting, particularly in terms of warmth (vs. hostility). Indeed, warmth was positively skewed so that the means were near, but not at, ceiling with less variance than either autonomy support or cognitive stimulation. Hence, the finding that mothers' early warmth did not predict children's subsequent executive functions or achievement over and above the other dimensions of parenting may simply reflect that there were not large enough differences among mothers in terms of their warmth dipping below a meaningful threshold. To address this issue, future research should examine parents' warmth either in structured tasks eliciting dampened warmth (e.g., a situation in which children and parents are easily frustrated) or via methods that assess parents' warmth in their day-to-day interactions with children.

A second limitation concerns the measures used to assess children's executive functions. The current analyses made use of the measures available just before children entering kindergarten in the SECCYD given that executive functions at this time appear to be important to later achievement (e.g., Best et al., 2011; Blair & Razza, 2007; McClelland et al., 2006). Three (i.e., the Continuous Performance Test, Day-Night Stroop, and delay of gratification task) of the four measures used focus heavily on inhibition skills as opposed to the other components of executive functions (i.e., working memory and cognitive flexibility). Prior research examined the predictive value of mothers' autonomy-support for different types of executive functions (e.g., delay of gratification tasks vs. those tapping inhibition, working memory, and cognitive flexibility; Bernier et al., 2010; Matte-Gagné & Bernier, 2011), but did not demonstrate whether mothers' autonomy support mattered significantly more for one type versus another. Thus, although we would expect a similar pattern of findings for different types of executive functions, it will be useful for future research on autonomy-supportive parenting to examine its effects on diverse types.

A third limitation is that it was not possible to account for children's early executive functions when parenting was observed. Thus, it is plausible that mothers' provision of autonomy support was in some part a reaction to children's executive functions; there is some evidence to suggest that when children have poor executive functions, mothers may respond with dampened autonomy support (e.g., Eisenberg et al., 2010). Indeed, such a process may underlie the link we documented between children's executive functions before entering kindergarten and their subsequent achievement: Executive functions at this phase may elicit or maintain autonomy-supportive parenting during the elementary and high school years, which may enhance achievement either via executive functions or other mechanisms (e.g., autonomous motivation). Importantly, however, Bernier and colleagues (Bernier et al., 2010; Matte-Gagné & Bernier, 2011) found that autonomy-supportive parenting predicted children's executive functions when accounting not only for children's general cognitive skills, but also their prior executive functions.

Fourth, despite the range of controls included in our models as well as the prospective, longitudinal design, the research is ultimately correlational leaving open the possibility of additional confounds. In this context, particular care must be taken in considering two key covariates. The indexes we used of children's temperament and general cognitive skills may not be maximally reliable. For one, only single assessments were used for each index at the time points of interest. The assessments before or at the time of parenting were made quite early in children's lives (i.e., temperament was assessed at 6 months and general cognitive skills were assessed at 15 months). This was important in terms of identifying attributes of children that might shape parenting. However, it is unclear how valid such assessments are at such a young age. The later (i.e., 54 months) assessments of temperament and general cognitive skills that were included as alternative mediators were similarly limited in that they were manifest (as opposed to latent) variables. The Woodcock-Johnson vocabulary assessment—the proxy of general cognitive skills in the current study—has received extensive psychometric attention, making it particularly reliable and valid (McGrew, Werder, & Woodcock, 1991), but represents only one component of children's general cognitive skills. Given these issues, it is possible that, despite our many controls, the associations between autonomy-supportive parenting and children's executive functions and achievement simply reflect shared genes as suggested by Scarr (1992; see also Scarr & McCartney, 1983). That said, Roisman and Fraley (2012) demonstrated that only a small portion of the link between early parenting and children's achievement is attributable to shared genes. A final limitation is that although the NICHD SECCYD sample includes families who vary widely in terms of their socioeconomic status, it consists primarily of middle- to upper-middle class families in which children are not at risk academically. Future research is needed to ascertain whether the patterns observed here would be evident among lower socioeconomic status families.

Conclusions

The current research is one of only a few studies to address the issue of what underlies the apparent benefits of autonomy-supportive parenting for children's achievement. As such, it is the first to provide evidence to suggest that the association between such parenting and children's achievement over time is due in part to children's executive functions: Mothers' early autonomy support predicted children's executive functions before kindergarten, which foreshadowed enhanced achievement among children in both elementary and high school. A particularly notable aspect of the current research is that the predictive significance of autonomy-supportive parenting was evident over and above not only children's attributes in the earliest years of their lives as well as potential demographic influences, but also other dimensions of parenting that co-occur with autonomy supportive parenting.

References

Arbuckle, J. (1996). Full information estimation in the presence of incomplete data. In G. A. Marcoulides & R. E. Schumacker (Eds.), *Advanced structural equation modeling: Issues and techniques* (pp. 243–277). Mahwah, NJ: Erlbaum.

Arbuckle, J. L. (2011). *IBM SPSS Amos 20* [computer software]. Chicago, IL: Amos Development Corporation.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173–1182. http://dx.doi.org/10.1037/0022-3514.51.6.1173

Bayley, N. (1991). *Bayley Scales of Infant Development: Standardization version* (2nd ed.). New York, NY: Psychological Corporation.

Belsky, J., Pasco Fearon, R. M., & Bell, B. (2007). Parenting, attention and externalizing problems: Testing mediation longitudinally, repeatedly and reciprocally. *Journal of Child Psychology and Psychiatry, 48,* 1233–1242. http://dx.doi.org/10.1111/j.1469-7610.2007.01807.x

Benner, A. D. (2011). The transition to high school: Current knowledge, future directions. *Educational Psychology Review, 23,* 299–328. http://dx.doi.org/10.1007/s10648-011-9152-0

Bernier, A., Carlson, S. M., Deschênes, M., & Matte-Gagné, C. (2012). Social factors in the development of early executive functioning: A closer look at the caregiving environment. *Developmental Science, 15,* 12–24. http://dx.doi.org/10.1111/j.1467-7687.2011.01093.x

Bernier, A., Carlson, S. M., & Whipple, N. (2010). From external regulation to self-regulation: Early parenting precursors of young children's executive functioning. *Child Development, 81,* 326–339. http://dx.doi.org/10.1111/j.1467-8624.2009.01397.x

Best, J. R., Miller, P. H., & Naglieri, J. A. (2011). Relations between executive function and academic achievement from ages 5 to 17 in a large, representative national sample. *Learning and Individual Differences, 21,* 327–336. http://dx.doi.org/10.1016/j.lindif.2011.01.007

Blair, C. (2002). School readiness. Integrating cognition and emotion in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist, 57,* 111–127. http://dx.doi.org/10.1037/0003-066X.57.2.111

Blair, C., Granger, D., & Peters Razza, R. (2005). Cortisol reactivity is positively related to executive function in preschool children attending head start. *Child Development, 76,* 554–567. http://dx.doi.org/10.1111/j.1467-8624.2005.00863.x

Blair, C., Granger, D. A., Willoughby, M., Mills-Koonce, R., Cox, M., Greenberg, M. T., . . . The FLP Investigators. (2011). Salivary cortisol mediates effects of poverty and parenting on executive functions in early childhood. *Child Development, 82,* 1970–1984. http://dx.doi.org/10.1111/j.1467-8624.2011.01643.x

Blair, C., & Razza, R. P. (2007). Relating effortful control, executive function, and false belief understanding to emerging math and literacy ability in kindergarten. *Child Development, 78,* 647–663. http://dx.doi.org/10.1111/j.1467-8624.2007.01019.x

Blair, C., & Ursache, A. (2011). A bidirectional model of executive functions and self-regulation. In K. D. Vohs & R. F. Baumeister (Eds.), *Handbook of self-regulation: Research, theory, and applications* (2nd ed., pp. 300–320). New York, NY: Guilford Press.

Brock, L. L., Rimm-Kaufman, S. E., Nathanson, L., & Grimm, K. J. (2009). The contributions of "hot" and "cool" executive function to children's academic achievement, learning-related behaviors, and engagement in kindergarten. *Early Childhood Research Quarterly, 24,* 337–349. http://dx.doi.org/10.1016/j.ecresq.2009.06.001

Calkins, S. D., Hungerford, A., & Dedmon, S. E. (2004). Mothers' interactions with temperamentally frustrated infants. *Infant Mental Health Journal, 25,* 219–239. http://dx.doi.org/10.1002/imhj.20002

Carey, W. B., & McDevitt, S. C. (1978). Revision of the infant temperament questionnaire. *Pediatrics, 61,* 735–739.

Carlson, S. M., Mandell, D. J., & Williams, L. (2004). Executive function and theory of mind: Stability and prediction from ages 2 to 3. *Developmental Psychology, 40,* 1105–1122. http://dx.doi.org/10.1037/0012-1649.40.6.1105

Clark, C. A. C., Sheffield, T. D., Chevalier, N., Nelson, J. M., Wiebe, S. A., & Espy, K. A. (2013). Charting early trajectories of executive control with the shape school. *Developmental Psychology, 49,* 1481–1493. http://dx.doi.org/10.1037/a0030578

Clark, C. A. C., Sheffield, T. D., Wiebe, S. A., & Espy, K. A. (2013). Longitudinal associations between executive control and developing mathematical competence in preschool boys and girls. *Child Development, 84,* 662–677. http://dx.doi.org/10.1111/j.1467-8624.2012.01854.x

Clark, K. E., & Ladd, G. W. (2000). Connectedness and autonomy support in parent-child relationships: Links to children's socioemotional orientation and peer relationships. *Developmental Psychology, 36,* 485–498. http://dx.doi.org/10.1037/0012-1649.36.4.485

Cuevas, K., Deater-Deckard, K., Kim-Spoon, J., Wang, Z., Morasch, K. C., & Bell, M. A. (2013). A longitudinal intergenerational analysis of executive functions during early childhood. [Advance online publication]. *British Journal of Developmental Psychology*.

d'Ailly, H. (2003). Children's autonomy and perceived control in learning: A model of motivation and achievement in Taiwan. *Journal of Educational Psychology, 95,* 84–96. http://dx.doi.org/10.1037/0022-0663.95.1.84

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum. http://dx.doi.org/10.1007/978-1-4899-2271-7

Diamond, A. (2006). The early development of executive functions. In E. Bialystok & F. Craik (Eds.), *Lifespan cognition: Mechanisms of change* (pp. 70–95). Oxford, England: Oxford University Press. http://dx.doi.org/10.1093/acprof:oso/9780195169539.003.0006

Dilworth-Bart, J. E. (2012). Does executive function mediate SES and home quality associations with academic readiness? *Early Childhood Research Quarterly, 27,* 416–425. http://dx.doi.org/10.1016/j.ecresq.2012.02.002

Eisenberg, N., Vidmar, M., Spinrad, T. L., Eggum, N. D., Edwards, A., Gaertner, B., & Kupfer, A. (2010). Mothers' teaching strategies and children's effortful control: A longitudinal study. *Developmental Psychology, 46,* 1294–1308. http://dx.doi.org/10.1037/a0020236

Fitzpatrick, C., McKinnon, R. D., Blair, C. B., & Willoughby, M. T. (2014). Do preschool executive function skills explain the school readiness gap between advantaged and disadvantaged children? *Learning and Instruction, 30,* 25–31. http://dx.doi.org/10.1016/j.learninstruc.2013.11.003

Frodi, A., Bridges, L., & Grolnick, W. (1985). Correlates of mastery-related behavior: A short-term longitudinal study of infants in their second year. *Child Development, 56,* 1291–1298. http://dx.doi.org/10.2307/1130244

Garon, N., Bryson, S. E., & Smith, I. M. (2008). Executive function in preschoolers: A review using an integrative framework. *Psychological Bulletin, 134,* 31–60. http://dx.doi.org/10.1037/0033-2909.134.1.31

Gerstadt, C. L., Hong, Y. J., & Diamond, A. (1994). The relationship between cognition and action: Performance of children 3 1/2–7 years old on a Stroop-like day-night test. *Cognition, 53,* 129–153. http://dx.doi.org/10.1016/0010-0277(94)90068-X

Grolnick, W. S., Deci, E. L., & Ryan, R. M. (1997). Internalization within the family: The self-determination theory perspective. In J. E. Grusec & L. Kuczynski (Eds.), *Parenting and children's internalization of values: A handbook of contemporary theory* (pp. 135–161). Hoboken, NJ: Wiley.

Grolnick, W., Frodi, A., & Bridges, L. (1984). Maternal control style and the mastery motivation of one-year-olds. *Infant Mental Health Journal, 5,* 72–82. http://dx.doi.org/10.1002/1097-0355(198422)5:2<72::AID-IMHJ2280050203>3.0.CO;2-O

Grolnick, W. S., & Pomerantz, E. M. (2009). Issues and challenges in studying parental control: Toward a new conceptualization. *Child Development Perspectives, 3,* 165–170. http://dx.doi.org/10.1111/j.1750-8606.2009.00099.x

Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology, 81,* 143–154. http://dx.doi.org/10.1037/0022-0663.81.2.143

Grolnick, W. S., Ryan, R. M., & Deci, E. L. (1991). Inner resources for school achievement: Motivational mediators of children's perceptions of

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

their parents. *Journal of Educational Psychology, 83,* 508–517. http://dx.doi.org/10.1037/0022-0663.83.4.508

Hammond, S. I., Müller, U., Carpendale, J. I. M., Bibok, M. B., & Liebermann-Finestone, D. P. (2012). The effects of parental scaffolding on preschoolers' executive function. *Developmental Psychology, 48,* 271–281. http://dx.doi.org/10.1037/a0025519

Hess, R. D., & McDevitt, T. M. (1984). Some cognitive consequences of maternal intervention techniques: A longitudinal study. *Child Development, 55,* 2017–2030. http://dx.doi.org/10.2307/1129776

Hindman, A. H., & Morrison, F. J. (2012). Differential contributions of three parenting dimensions to preschool literacy and social skills in a middle-income sample. *Merrill-Palmer Quarterly, 58,* 191–223. http://dx.doi.org/10.1353/mpq.2012.0012

Honomichl, R. D., & Donnellan, M. B. (2012). Dimensions of temperament in preschoolers predict risk taking and externalizing behaviors in adolescents. *Social Psychological and Personality Science, 3,* 14–22. http://dx.doi.org/10.1177/1948550611407344

Hughes, C. (2011). Changes and challenges in 20 years of research into the development of executive functions. *Infant and Child Development, 20,* 251–271. http://dx.doi.org/10.1002/icd.736

Joussemet, M., Koestner, R., Lekes, N., & Landry, R. (2005). A longitudinal study of the relationship of maternal autonomy support to children's adjustment and achievement in school. *Journal of Personality, 73,* 1215–1236. http://dx.doi.org/10.1111/j.1467-6494.2005.00347.x

Kochanska, G., Aksan, N., Prisco, T. R., & Adams, E. E. (2008). Mother-child and father-child mutually responsive orientation in the first 2 years and children's outcomes at preschool age: Mechanisms of influence. *Child Development, 79,* 30–44. http://dx.doi.org/10.1111/j.1467-8624.2007.01109.x

Landry, S. H., Miller-Loncar, C. L., Smith, K. E., & Swank, P. R. (2002). The role of early parenting in children's development of executive processes. *Developmental Neuropsychology, 21,* 15–41. http://dx.doi.org/10.1207/S15326942DN2101_2

Marchman, V. A., & Fernald, A. (2008). Speed of word recognition and vocabulary knowledge in infancy predict cognitive and language outcomes in later childhood. *Developmental Science, 11,* F9–F16. http://dx.doi.org/10.1111/j.1467-7687.2008.00671.x

Matte-Gagné, C., & Bernier, A. (2011). Prospective relations between maternal autonomy support and child executive functioning: Investigating the mediating role of child language ability. *Journal of Experimental Child Psychology, 110,* 611–625. http://dx.doi.org/10.1016/j.jecp.2011.06.006

McClelland, M. M., Acock, A. C., & Morrison, F. J. (2006). The impact of kindergarten learning-related skills on academic trajectories at the end of elementary school. *Early Childhood Research Quarterly, 21,* 471–490. http://dx.doi.org/10.1016/j.ecresq.2006.09.003

McClelland, M. M., & Cameron, C. E. (2011). Self-regulation and academic achievement in elementary school children. *New Directions for Child and Adolescent Development, 2011,* 29–44. http://dx.doi.org/10.1002/cd.302

McClelland, M. M., Cameron, C. E., Connor, C. M., Farris, C. L., Jewkes, A. M., & Morrison, F. J. (2007). Links between behavioral regulation and preschoolers' literacy, vocabulary, and math skills. *Developmental Psychology, 43,* 947–959. http://dx.doi.org/10.1037/0012-1649.43.4.947

McGrew, K. S., Werder, J. K., & Woodcock, R. (1991). *WJ-R technical manual*. Allen, TX: DLM.

Miller, M. R., Müller, U., Giesbrecht, G. F., Carpendale, J. I., & Kerns, K. A. (2013). The contribution of executive function and social understanding to preschoolers' letter and math skills. *Cognitive Development, 28,* 331–349. http://dx.doi.org/10.1016/j.cogdev.2012.10.005

Mischel, W., Shoda, Y., & Rodriguez, M. I. (1989). Delay of gratification in children. *Science, 244,* 933–938. http://dx.doi.org/10.1126/science.2658056

Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., & Harrington, H., . . . Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences of the United States of America, 108,* 2693–2698. doi:10.1073/pnas.1010076108

Moorman, E. A., & Pomerantz, E. M. (2010). Ability mindsets influence the quality of mothers' involvement in children's learning: An experimental investigation. *Developmental Psychology, 46,* 1354–1362. http://dx.doi.org/10.1037/a0020376

Nesbitt, K. T., Baker-Ward, L., & Willoughby, M. T. (2013). Executive function mediates socio-economic and racial differences in early academic achievement. *Early Childhood Research Quarterly, 28,* 774–783. http://dx.doi.org/10.1016/j.ecresq.2013.07.005

Neuenschwander, R., Röthlisberger, M., Cimeli, P., & Roebers, C. M. (2012). How do different aspects of self-regulation predict successful adaptation to school? *Journal of Experimental Child Psychology, 113,* 353–371. http://dx.doi.org/10.1016/j.jecp.2012.07.004

Nevo, E., & Breznitz, Z. (2011). Assessment of working memory components at 6 years of age as predictors of reading achievements a year later. *Journal of Experimental Child Psychology, 109,* 73–90. http://dx.doi.org/10.1016/j.jecp.2010.09.010

Ng, F. F.-Y., Kenney-Benson, G. A., & Pomerantz, E. M. (2004). Children's achievement moderates the effects of mothers' use of control and autonomy support. *Child Development, 75,* 764–780. http://dx.doi.org/10.1111/j.1467-8624.2004.00705.x

NICHD Early Child Care Research Network. (1999). Child care and mother-child interaction in the first three years of life. *Developmental Psychology, 35,* 1399–1413. http://dx.doi.org/10.1037/0012-1649.35.6.1399

NICHD Early Child Care Research Network. (2003). Do children's attention processes mediate the link between family predictors and school readiness? *Developmental Psychology, 39,* 581–593. http://dx.doi.org/10.1037/0012-1649.39.3.581

NICHD Early Child Care Research Network. (2005). Predicting individual differences in attention, memory, and planning in first graders from experiences at home, child care, and school. *Developmental Psychology, 41,* 99–114. http://dx.doi.org/10.1037/0012-1649.41.1.99

Noël, M.-P. (2009). Counting on working memory when learning to count and to add: A preschool study. *Developmental Psychology, 45,* 1630–1643. http://dx.doi.org/10.1037/a0016224

Nolen-Hoeksema, S., Wolfson, A., Mumme, D., & Guskin, K. (1995). Helplessness in children of depressed and nondepressed mothers. *Developmental Psychology, 31,* 377–387. http://dx.doi.org/10.1037/0012-1649.31.3.377

Olson, S. L., Bates, J. E., Sandy, J. M., & Schilling, E. M. (2002). Early developmental precursors of impulsive and inattentive behavior: From infancy to middle childhood. *Journal of Child Psychology and Psychiatry, 43,* 435–447. http://dx.doi.org/10.1111/1469-7610.00035

Pianta, R. C., Smith, N., & Reeve, R. E. (1991). Observing mother and child behavior in a problem-solving situation at school entry: Relations with classroom adjustment. *School Psychology Quarterly, 6,* 1–15. http://dx.doi.org/10.1037/h0088238

Pluess, M., & Belsky, J. (2010). Differential susceptibility to parenting and quality child care. *Developmental Psychology, 46,* 379–390. http://dx.doi.org/10.1037/a0015203

Pomerantz, E. M., Grolnick, W. S., & Price, C. E. (2005). The role of parents in how children approach achievement: A dynamic process perspective. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 229–278). New York, NY: Guilford Press Publications.

Razza, R. A., Martin, A., & Brooks-Gunn, J. (2010). Associations among family environment, sustained attention, and school readiness for low-income children. *Developmental Psychology, 46,* 1528–1542. http://dx.doi.org/10.1037/a0020389

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Razza, R. A., & Raymond, K. (2013). Associations among maternal behavior, delay of gratification, and school readiness across the early childhood years. *Social Development, 22,* 180–196. http://dx.doi.org/10.1111/j.1467-9507.2012.00665.x

Roisman, G. I., & Fraley, R. C. (2012). A behavior-genetic study of the legacy of early caregiving experiences: Academic skills, social competence, and externalizing behavior in kindergarten. *Child Development, 83,* 728–742.

Rothbart, M. K., Ahadi, S. A., & Hershey, K. L. (1994). Temperament and social behavior in childhood. *Merrill-Palmer Quarterly, 40,* 21–39.

Rothbart, M. K., Ahadi, S. A., Hershey, K. L., & Fisher, P. (2001). Investigations of temperament at three to seven years: The Children's Behavior Questionnaire. *Child Development, 72,* 1394–1408. http://dx.doi.org/10.1111/1467-8624.00355

Rushton, J. P., Brainerd, C. J., & Pressley, M. (1983). Behavioral development and construct validity: The principle of aggregation. *Psychological Bulletin, 94,* 18–38. http://dx.doi.org/10.1037/0033-2909.94.1.18

Scarr, S. (1992). Developmental theories for the 1990s: Development and individual differences. *Child Development, 63,* 1–19. http://dx.doi.org/10.2307/1130897

Scarr, S., & McCartney, K. (1983). How people make their own environments: A theory of genotype greater than environment effects. *Child Development, 54,* 424–435.

Sektnan, M., McClelland, M. M., Acock, A., & Morrison, F. J. (2010). Relations between early family risk, children's behavioral regulation, and academic achievement. *Early Childhood Research Quarterly, 25,* 464–479. http://dx.doi.org/10.1016/j.ecresq.2010.02.005

Shonkoff, J. P., & Phillips, D. A. (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academy Press.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods, 7,* 422–445. http://dx.doi.org/10.1037/1082-989X.7.4.422

Steinberg, L., Elmen, J. D., & Mounts, N. S. (1989). Authoritative parenting, psychosocial maturity, and academic success among adolescents. *Child Development, 60,* 1424–1436. http://dx.doi.org/10.2307/1130932

Vallotton, C., & Ayoub, C. (2011). Use your words: The role of language in the development of toddlers' self-regulation. *Early Childhood Research Quarterly, 26,* 169–181. http://dx.doi.org/10.1016/j.ecresq.2010.09.002

Wang, Q., Pomerantz, E. M., & Chen, H. (2007). The role of parents' control in early adolescents' psychological functioning: A longitudinal investigation in the United States and China. *Child Development, 78,* 1592–1610. http://dx.doi.org/10.1111/j.1467-8624.2007.01085.x

Wiebe, S. A., Sheffield, T. D., & Espy, K. A. (2012). Separating the fish from the sharks: A longitudinal study of preschool response inhibition. *Child Development, 83,* 1245–1261. http://dx.doi.org/10.1111/j.1467-8624.2012.01765.x

Willoughby, M. T., Blair, C. B., Wirth, R. J., & Greenberg, M. (2011). The measurement of executive function at age 5: Psychometric properties and relationship to academic achievement. [Advance online publication]. *Psychological Assessment*.

Woodcock, R. W., & Johnson, M. B. (1990). *Woodcock-Johnson Psycho-Educational Battery-Revised*. Itasca, IL: Riverside.

Wothke, W. (2000). Longitudinal and multigroup modeling with missing data. In T. D. Little, K. U. Schnabel, & J. Baumert (Eds.), *Modeling longitudinal and multilevel data: Practical issues, applied approaches, and specific examples* (pp. 219–240, 269–281). Mahwah, NJ: Erlbaum Publishers.

Zhou, Q., Eisenberg, N., Wang, Y., & Reiser, M. (2004). Chinese children's effortful control and dispositional anger/frustration: Relations to parenting styles and children's social functioning. *Developmental Psychology, 40,* 352–366. http://dx.doi.org/10.1037/0012-1649.40.3.352

Received February 22, 2014
Revision received November 4, 2014
Accepted November 13, 2014 ■

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Correction to Kizilcec, Bailenson, and Gomez (2015)

In the article "The Instructor's Face in Video Instruction: Evidence From Two Large-Scale Field Studies" by René F. Kizilcec, Jeremy N. Bailenson, and Charles J. Gomez (*Journal of Educational Psychology*, Advanced online publication. March 23, 2015. http://dx.doi.org/10.1037/edu0000013), "value" was inadvertently included after "*p*" in the first column of both Tables 2 and 3.

http://dx.doi.org/10.1037/edu0000046

Educ Inf Technol (2017) 22:1231–1247
DOI 10.1007/s10639-016-9487-8

Ubiquitous mobile educational data management by teachers, students and parents: Does technology change school-family communication and parental involvement?

Ina Blau[1] · **Mira Hameiri**[2]

Published online: 12 April 2016
© Springer Science+Business Media New York 2016

Abstract Digital educational data management has become an integral part of school practices. Accessing school database by teachers, students, and parents from mobile devices promotes data-driven educational interactions based on real-time information. This paper analyses mobile access of educational database in a large sample of 429 schools during an entire academic year. Using learning analytics approach, the study compares students, their mothers' and fathers' mobile logins onto the database between schools with frequent, occasional, and no mobile (i.e., computer only) teacher access. In addition, this paper explores gender differences in parental involvement through mobile monitoring of their children' function in school. The results supported both study hypotheses. (1) Mobile accessing of the database by teachers promoted mobile accessing of the database by their students, mothers, and fathers. It seems that ubiquitous mobile data management is a modeling process in which students and parents learn from teachers. (2) Compared to fathers, significantly more mothers used the mobile school database. Moreover, among parents-uses, mothers accessed educational data of their children significantly more frequently than fathers. The results suggest that mothers are still more actively involved than fathers in mobile monitoring of how their children function in school. The results are discussed in terms of *School Community of Innovation* model and *technological determinism* approach.

✉ Ina Blau
inabl@openu.ac.il; http://www.openu.ac.il/Personal_sites/ina–blau/

Mira Hameiri
hameirie@gmail.com

[1] Department of Education and Psychology, The Open University of Israel, 1 University Road, P.O.B. 808, 43107 Ra'anana, Israel

[2] Department of Advanced Studies, Oranim Academic College of Education, 36006 Tiv'on, Israel

Keywords Ubiquitous mobile educational database · Teachers, students, and parents · Gender differences in mobile parental involvement · Distributed leadership and accountability · School Community of Innovation model · Technological determinism

1 Introduction

A fundamental change is taking place in schools around the globe as they respond to rapid advances in new technologies (Zhao 2012). Technological tools are coupled with the requirements for accountability, data-driven decision-making, and instant communication between educational institutions and their communities (Taylor 2010). Schools generate a massive amount of data, effective use of which can promote pedagogical goals and change patterns of educational management (Blau and Presser 2013). Some researchers (e.g., Perelman 2014) argue that the use of educational database is a reflection of the "data-obsessed" discourse based on the perception of schools as service providers, students as consumers, and education process as a service offered to clients. However, the generation and processing of data through digital technologies - 'Big Data' and data mining and analytics - is an integral element of contemporary society in general and education systems in particular (Selwyn 2015). Focus on data-driven decision-making and on interactions among school staff as well as between teachers and students is common for schools that focus on making improvement (Taylor 2010). Student academic achievement is positively related to continuous monitoring of achievement and instruction, since monitoring ensures that specific educational goals remain the driving force behind a school's actions (Marzano and Waters 2009).

Effective tools for managing school data are highly important for data-driven pedagogical decisions (Taylor 2010). One of the well-known examples of educational databases is the National Pupil Database established in 2002 by the UK government (Williamson 2015). Digital educational databases manage student information and learning content as well as support pedagogical communication within teaching staff and between teachers, students, and their parents. School databases are both a tool for student data management (e.g., storing and monitoring student function data, assessments, state test results, and custom reports) and a platform for building courses, sharing learning content, communicating and collaborating with students and parents (Blau and Hameiri 2012). Such 'learning analytics' platforms enable "real-time" policy by tracking and predicting students' performance through their digital data traces. These processes are essential for digital education governance, since they enable "to know, govern, and manage education" (Williamson 2015). Surprisingly, research on school databases holds a relatively peripheral position in the study of Information and Communications Technologies (ICT) in education (Perelman 2014). Moreover, while the literature advocates that school databases enhance administrative efficiency and effectiveness (Marzano and Waters 2009; Selwood and Visscher 2007), it appears as if the number of studies that examine the realization of such potential of educational management is rather scarce (Harris et al. 2013; Jamerson 2013).

This paper focuses on mobile school data management that has a potential for changing information flow and establish ubiquitous interactions between educational institutions and their communities. Previous studies regarding school databases focused

exclusively on their usage from computers (Blau and Hameiri 2010, 2012; Perelman 2014; Taylor 2010; Turner 2010). Mobile communication among schools staff and between teachers and students was previously explored in the context of SMS exchanges (Caspi and Blau 2011b; Ho et al. 2013). The very high level of smartphone use in the society raises the importance of instant 24/7 accessing student data, updating learning materials, and communication among different stakeholders - not only from computers, but also from mobile devices when computers are unavailable (Blau 2011). Moreover, smartphones, tablets, and notebooks are converging and for some product lines (e.g., larger android tablets, Surface Pro devices, etc.) it is becoming increasingly difficult to distinguish between "mobile device" and "computer". Mobile devices could be a convenient tool for enhancing teacher-families communication (Ho et al. 2013), since they provide ubiquitous access to up-to-date school data in different levels, and thus enable data-based instead of gut feeling-based pedagogical decisions of school principals, teaching staff, and educational policy-makers (Blau and Presser 2013).

This paper analyses the data of all Israeli schools that have adopted on different levels a school database called MASHOV ("feedback" and the acronym of Immediacy, Transparency, and Supervision in Hebrew), which, in addition to online data management, has recently opened up the possibility of ubiquitous mobile data access and pedagogical communication by teaching staff, students, and families. Using learning analytics approach, the study compares mobile logins of students, their mothers, and fathers onto MASHOV school database between schools with frequent, occasional, and no mobile (i.e., only computer) data access by teachers during the first year of implementing the mobile application. In addition, this paper explores gender differences in mobile involvement of parents in function of their children in school.

2 Literature review

This section begins with an introduction of different frameworks relevant to the adoption of educational data management at the organizational and individual level. This is followed by a presentation of possibilities for mobile school data management. To conclude, we discuss gender differences in offline, online, and mobile involvement of parents in function of their children in school.

2.1 Frameworks of adopting schools data management on organizational and individual levels

Analyzing the literature focused on adopting technology in schools on *organizational level*, Avidov-Ungar and Eshet-Alkalai (2011) described two main ways of implementation: *Islands of Innovations* and *Comprehensive Innovation* models. In the Islands of Innovation model, the innovation is implemented only by a small fraction of an educational organization and is usually focused on a particular content area or a particular task (Forkosh-Baruch et al. 2010). In contrast, in the model of Comprehensive Innovation, the technology is adopted on all levels of the organization, and, if implemented effectively, creates a new organizational culture (Blau and Shamir-Inbal 2016). Based on the findings of numerous studies, Avidov-Ungar and Eshet-Alkalai concluded that the assumption of gradual spontaneous spread from Island of

Innovation to the rest of the organization is erroneous. Island of Innovation usually remains isolated from the rest of the organization and even creates among the educational leadership and decision-makers the false illusion of innovative organization.

In the context of adopting an educational database, the Islands of Innovation model is clearly unsuitable - the data pool and e-communication through the school database are valuable only if at least most of the teaching staff enter educational data and communicate via the database on a regular basis (Blau and Hameiri 2012). In a general organizational context, Resource Dependence Theory suggests that technology-related collaboration often exist between partners who are mutually interdependent (for the review see: Davis and Eisenhardt 2011). For example, microprocessors and software of firms like Intel and Microsoft are both needed for a final solution – personal computer. Similarly, in the context of schools, educational data entered by different homeroom teachers, subject teachers, department heads, a school consulter, etc. is complementary for successful data-driven decision-making by each member of the school staff (Blau and Hameiri 2010). Therefore, instead of a gradual spread, the entire teaching staff should be included into the implementation process at the starting point of adopting a school database.

In addition to teaching staff, successful change in schools requires the involvement of all stakeholders. The ultimate goal of each educational change is improving learning and education of students; thus, in order to be substantial, the change should include not only teaching staff, but also involve students and their parents (Fuchs 1995). This claim received empirical support in large-sample comparisons between the adoption of a school database among teaching staff only versus its adoption by teachers *and* families (Blau and Hameiri 2010). The results showed that the adoption of the platform by teachers and families, which can be called *School Community of Innovation* model, leads to a higher level of educational data exchange and more animated e-communication among teaching staff, compared to the Comprehensive Innovation model - exchanging data within school staff only.

On *the level of individual user*s, one of the central frameworks for analyzing the adoption of technology is Rogers (2003) *Diffusion of Innovation Theory*. This framework explains the variety in the rate of adopting new technologies by individual differences of the users in general (Blau and Neuthal 2012a, 2012b) and teachers in particular (Blau and Peled 2012). According to Rogers, the continuum of adopting innovations is normally distributed in the population and ranges in a bell curve from Innovators (2.5 %) and Early Adopters (13.5 %), to Early Majority and Late Majority (34 % each), and finally to Laggards (16 %).

Based on the Diffusion of Innovation Theory, we can expect that within education organizations, the rate of adopting innovative technologies for teaching and e-communication with students in general (Benamotz and Blau 2015; Blau and Caspi 2010; Peled et al. 2015), and for ubiquitous mobile management of students' data in particular would reflect individual differences in adopting innovations among the teachers. In addition to within-school differences, the rate of adopting mobile access to a school database would vary between schools, according to differences in adopting innovation among their school principals and other educational policy-makers. In case of MASHOV database, new mobile educational data management was available to all schools that use the system and without additional costs. Despite this opportunity, during the first phase of integration, we can expect significant differences - between

schools and among teachers within each school - in the adoption of the new ubiquitous mobile data management. In terms of Rogers (2003), teachers and school principals who promote the adoption of the mobile school data management in its first phase can probably be defined as Innovators and Early Adopters, or at least, Early Majority (Blau et al. 2014).

It should be taken into consideration that the rate of adopting technological innovations in general and new ways of educational data management in particular does not necessary change the leadership style. Garrison and Vaughan (2013) argued that transformational changes in higher education institutions required *distributed leadership* that involves all levels of the institution. Distributed leadership refers to the situation in which the leadership functions are stretched over the work of a number of individuals, and tasks are accomplished through interactions, collective actions, and co-performance (Harris 2013; Harris et al. 2013). Equalization effect of digital technologies can enhance inter-personal communication (Blau and Barak 2009, 2012) and promote educational interactions (Blau et al. 2009, 2013; Weiser et al. 2016). For instance, a school database can enhance distributed leadership, if a school principle provides additional school staff with access to the entire school information, in order to share responsibilities and facilitate pedagogical dialogue and decision-making (Blau and Presser 2013). However, if the aim of educational leadership is maintaining the power status quo or even abusing his/her authority (Lumby 2013), a school database can magnify the abuse of power and control and hide behind the principals of efficiency, effectiveness, and accountability the aim to transform schools into "business-like" organizations (Perelman 2014).

2.2 Mobile school data management

Recently MASHOV school database, which is investigated in this paper, has developed secure mobile applications: (1) *teacher mobile application* for organizational e-communication, accessing and updating student data and learning materials and (2) *family mobile application* for accessing student data and for e-communication of students and their parents with teachers. The school database is accessible from every type of mobile device with cellular or Wi-Fi internet connection– smartphones or tablets, devices that operate on Android or iOS.

Users can instantly access the database from their mobile device and view statistics of how a student or a class functions – the data includes formative and summative evaluations, numbers and frequencies of lateness, absences, behavior remarks, as well as lesson topics and homework (Blau and Hameiri 2013). Each user receives access to the data according to his or her position: school principals and vice-principals have access to all the information in their institution; heads of departments can see all the data concerning their departments; homeroom teachers have access to the information regarding the function of their students in different subject-matters; students can access their own information entered by different teachers; parents have access to the data concerning learning and functioning of their children.

The interface of teacher mobile application (Fig. 1 on the left) shows the icons of a teacher's schedule, today's lessons, and current lesson, a list of students and a list of a school staff, student search function, notifications, and organizational email. Figure 1 on the left demonstrates how a teacher actually reports-by-click different lesson events.



Fig. 1 Mobile application of MASHOV database for teachers – interface and class data view

The interfaces of application for students and parents (Fig. 2 on the left) shows icons of grades, behavior and function, student's schedule, current lesson information, search function, notifications, a school email, list of classmates and of a school staff. Figure 2 on the left illustrate how a student or a parent monitor grades in different assessment types (exams, papers, homework) and different subjects.

Note that the use of the school database investigated in this study is essentially different from the one-way involvement of parents in schooling of their children through visibility of formal and static data reported in a previous study (Selwyn et al. 2011). "Accountability" to parents in Selwyn et al.'s study refers to "show-case" of students' learning outcomes and reports regarding the progress of the *entire class*. Instead, the database analyzed in the current study enables a separate access for students, his or her mother, and father to all educational data concerning learning and functioning of *individual student*. In addition, the database supports online and mobile two-way teacher-student and teacher-parent communication in relation to a child's learning and functioning.

The effectiveness of a school database increases as more teachers enter student data on a daily basis and instantly connect with colleagues, students, and their parents (Blau and Hameiri 2010, 2012). Many Israeli classrooms, especially in the secondary



Fig. 2 Mobile application of MASHOV database for students and parents – interface and student data view

education, still do not have internet-connected computers in their classrooms (Dror et al. 2012). Therefore, teachers deal with the educational data twice: they fill forms of the class journal during the lessons and copy this data onto the school database after the lesson, sometimes several days later. On the other hand, almost all teachers have smartphones with mobile internet connection package and many Israeli schools have wireless connection. Ubiquitous mobile data update and communication ensure real-time reporting and enable real-time reaction by a school staff and, when needed, by parents (Ho et al. 2013). For example, homeroom teachers and parents would benefit from being informed and immediately react to in case of a student who arrived to school, but did not show up in the lesson. In addition, students would prefer to be informed as soon as possible about their grades and assessments.

However, the actual use of a database for mobile teacher-families interactions, especially in the initial phase of its adoption, depends not only on teachers, but also on educational policy (Ho et al. 2013). Educational policy-makers and school principals can ignore administrative and pedagogical potential of smartphones, and, in some cases, even prohibit any use of them by teachers and students (Blau and Presser 2013). Alternatively, school principals can perceive smartphones as devices for one-to-one computing, consistent with Bring Your Own Device (BYOD) approach, and embrace their productive use by teachers and students during the lessons for administrative and pedagogical purposes.

2.3 Gender and offline and online/mobile parental involvement

Studies regarding the offline parental involvement found that its impact on a child functioning in educational institutions is important for future academic success (for review see: Yoder and Lopez 2013). Parental involvement refers to involvement of parents in activities that advance education and learning of their children in order to increase their academic and social well-being (Fishel and Ramirez 2005). Previous findings showed that discussing school issues with a child positively correlates with student grades, while checking homework does not correlate or even negatively relates to achievement (Jeynes 2005). In addition to achievement and academic performance, parent involvement in education and learning of their children in school is associated with improved self-regulation, fewer discipline problems, stronger study habits, and more positive attitudes toward the school (Fan and Chen 2001). In addition, findings indicated that showing interest in school issues of 16 years old teenagers correlates with their latter decision to continue post-secondary education (Hango 2007).

However, only long-term parental involvement seems to be effective: showing short-time interest in problematic situations led to a low academic self-efficacy of teenagers (Kaplan Turan 2004). More recent papers use the term "family-school partnership" to emphases the *long-term* and *two-ways communication* between family members and teachers for supporting learning and functioning of children in school (Moorman Kim et al. 2012; Sheridan et al. 2010).

The use of interactive technologies with accessible resources can help in developing *online involvement of parents* in function of their children in school (Lewin and Luckin 2010). School databases enable data-driven educational interactions between teachers, students, and parents. In addition, the information automatically stored into a school database opens the possibility to analyze online parental involvement (Blau and

Hameiri 2012). Moreover, a school database enables to explore gender differences in family roles and compare online involvement of mothers versus fathers.

Studies of offline parental involvement show that mothers are more actively involved in the education of their children (Hango 2007; Jeynes 2005). However, these studies were critiqued (Lamb 2010) for the small and an unrepresentative sample, for using self-report questionnaires as the only method of investigation, for measuring father involvement by such technical parameter as the amount of time spent with a child, for the lack of gender comparisons, and for focusing on parents of young children and ignoring parents of teenagers. Using reliable research methods, Lamb found that, even when both parents held a full time job, father parental involvement (measured as direct interactions with children and the degree of responsibility for them) was significantly lower in comparison with mothers.

Similarly to offline behavior, investigation of online parental involvement revealed (Blau and Hameiri 2012) that compared to fathers, mothers have a higher level of involvement - they log more into the school database and send more messages to teachers. Moreover, mothers adapted the level of online parental involvement to the activity of teachers within the database: they logged significantly more into the database in classes of highly active teachers compared to mothers in classes of teachers less active within the school database.

Unfortunately, previous findings have shown that compared to offline parental involvement (Lamb 2010), online school database does not change the traditional family roles (Blau and Hameiri 2012). However, it is possible that the school database application for smartphones, as relatively new technology, would promote more active involvement of fathers in monitoring function of their children in school. This possibility would be consistent with the argument of *technological determinism* that technologies can change the way that people function and interact. According to this approach, technological tools are "autonomous forces that compel society to change" (Nye 2007, p.27).

In contrast to offline self-report studies, learning analytics approach permits the investigation of *actual* behavior of the participants (Zuckerman et al. 2009), in this case - online or mobile behavior of parents within a school database during long period of time. Giving each parent his or her own username and password for logging onto the database allows the exploration of gender differences in parental involvement, since parents have the same easy access and independent possibility to be informed in real-time concerning the function of their child in school (Blau and Hameiri 2012). Thus, the analysis of parental online or mobile activities via school database can help understanding how parents monitor function of their child in school far beyond the traditional self-report studies. However, surprisingly few studies (e.g., Blau and Hameiri 2012, 2013; Ho et al. 2013; Lewin and Luckin 2010) explore issues related to online or mobile parental involvement and the function of their children in school.

2.4 Research goals and hypotheses

The purpose of this study was to examine different forms of actual (in contrast to self-report) mobile behavior of teachers, students, and their parents during the first year of integrating mobile access and update of school database. Specifically the study explored the impact of teacher activity measured as frequent, occasional, and no mobile teacher access onto MASHOV school database (i.e., accessing educational data and e-communicating exclusively via computers) by students and their parents. In addition,

the study compares parental involvement of mothers versus fathers via mobile devices in function in their child in school.

The research hypotheses were:

(1) Based on the *Island of Innovation*, *Comprehensive Innovation*, and *School Community of Innovation* models of technology integration in educational organizations (Avidov-Ungar and Eshet-Alkalai 2011; Blau and Hameiri 2012) and the framework of implementing essential changes in schools by including *all* stakeholders into this process (Fuchs 1995), we hypothesized that mobile accessing of teachers onto the school database would augment the ubiquitous mobile use of the data by their students and parents. Thus, students and parents' mobile data accessing would be the highest in schools with frequent teachers' mobile logins, medium in schools with occasional mobile logins by teaching staff, and the lowest in schools with no mobile data accessing by teachers (i.e., in schools with all teachers managing educational data and e-communication within the platform exclusively from computers. Please note that mobile applications are independently available for all users; therefore, students or/and parents could embrace mobile data monitoring and communication even if teachers ignore it.)
(2) Similarly to the data regarding gender differences in offline parental involvement (see: Lamb 2010) and online parental involvement in function of their children in school through school database accessed via computers (Blau and Hameiri 2012), we hypothesized that compared to fathers, mothers would show higher level of ubiquitous parental involvement in function of their children in school by more frequent accessing the school database via mobile devices.

3 Method

3.1 Participants

This study analyzes the mobile activities of all 429 Israeli schools that used MASHOV school database (about 13 % of all schools in the country), a prominent Israeli-developed school database that has been in use since 2007 (Perelman 2014). Thus, *the entire population* of users of this database was included in the analysis: 369 of the schools were secondary schools (grades 7–12) and 60 - elementary schools (grades 1–6). The analysis was performed for all data exchange and interactions among teachers, students, and parents in these schools during an entire school year.

Note that Israeli schools required databases that support right-to-left written languages - Hebrew and Arabic. In addition to MASHOV, there are three other school databases that support right-to-left languages and are integrated in many Israeli schools; however until now (2016) none of them provide the possibility of mobile educational data management and communication, except for the database analyzed in this study.

3.2 Instruments and procedure

Using data analytics approach, the automatic data was extracted for the log analysis: the number of mobile application users per school (Table 1) and the number of users'

Table 1 Number of mobile **users per school** - descriptive statistics (n = 429)

	Number of users-teachers	Number of users-students	Number of users-mothers	Number of users-fathers
Mean	3.44	28.68	3.17	2.18
Median	2	2	0	0
SD	4.25	64.11	6.68	4.63
Skewness	2.43	5.32	4.96	6.68
S.E. of Skewness	.12	.12	.12	.12
Min	0	0	0	0
Max	31	730	76	64

mobile logins onto the database per school (Table 2) by teachers, students, their mothers, and fathers during the 2012–2013 school year.

As can be seen from the data presented in Tables 1 and 2, none of the variables is normally distributed – long-tail distribution of all of them is skewed towards left. Therefore, non-parametric statistic was used for the data analysis. Small number of users of the mobile application and the number of their mobile logs during the first year of implementation presented in Tables 1 and 2 are consistent with the prediction of the Diffusion of Innovation Theory: these users are mostly Innovators and Early Adopters of the new ubiquitous way of educational data management and communication.

Spearman's rank correlations are used for the analysis of relationships between the number of users - teachers, students, mothers, and fathers - and the number of their logins onto the mobile application, r_s = .90, .99, .97, .96 consequently, p's < .001. In behavior sciences, very high correlations (> .80) indicate that both variables apparently measure the same phenomenon. Therefore, the following section presents the results only for one of the measures - the number of *mobile logins* onto the database per school (and not the number of *mobile users* of the database per school).

It should be emphasized that despite the focus on mobile behavior of teaching staff and families within the database, in order to explore "the big picture" in the entire population (instead of sample), the **unit of analysis** in this study was the activities of a

Table 2 Number of mobile **logins per school** - descriptive statistics (n = 429)

	Number of teachers' logins	Number of students' logins	Number of mothers' logins	Number of fathers' logins
Mean	98.61	668.15	70.60	40.45
Median	8	9	0	0
SD	208.07	3260.02	236.80	110.87
Skewness	3.31	15.76	9.0	6.92
S.E. of Skewness	.12	.12	.12	.12
Min	0	0	0	0
Max	1589	61,671	3510	1492

school. Since the schools using the database significantly differ on number of teachers and students, in order to perform the analysis we used the *relative* numbers of mobile logins per school instead of the absolute numbers of mobile logins onto the database: (1) the number of teachers' mobile logins divided by the number of teaching staff in each school * 100, (2) the number of students', (3) their mothers', and (4) fathers' mobile logins divided by the number of students in each school * 100. Dividing parents' mobile logins by the number of students instead of the number of parents was used for controlling the cases in which more than one child per family studies in the same school.

For statistical analysis the school were divided into three categories: (1) schools with *frequent* ubiquitous teacher mobile logins (160 schools - 37.3 %), (2) *occasional* teacher mobile logins (161 schools - 37.5 %), and (3) schools *without* mobile logins by teachers (i.e., schools with all teachers managing educational data and communication within MASHOV database exclusively from computers; 108 schools - 25.2 %). No statistically significant differences in representation of elementary schools among these categories were found. Dividing into frequent and occasional mobile data access was made according to the median number of mobile logins only in schools with mobile access of the database by some teachers. Schools that received the median number of logins (50) were attributed to the occasional level of mobile data access.

4 Results

Since the dependent variables were not normally distributed, non-parametric Kruskal-Wallis tests were used for the analysis of variance instead of One-Way ANOVA and Mann-Whitney *U* tests were used for pair comparisons.

4.1 Mobile educational data accessing by students

The Kruskal-Wallis test showed statistically significant effect of teachers' mobile logins on students' mobile logins, kw (2) = 117.49, $p < .001$. The Mann-Whitney *U* tests revealed statistically significant differences in ubiquitous student mobile data accessing between schools with frequent, occasional, and no mobile educational data accessing by teachers (Mean Rank =281.51, 211.39, and 121.86 logins respectively, p's < .001). This finding suggests that the more teachers were active within the database via mobile, the more students accessed their data and communicated with teachers through the system from mobile devices.

4.2 Mobile educational data accessing by parents

The Kruskal-Wallis tests revealed that mobile teachers logins influenced the number of ubiquitous mobile logins by mothers, kw (2) = 96.84, $p < .001$, and fathers, kw (2) = 99.1, $p < .001$. The Mann-Whitney *U* tests showed significant differences in mobile logins by parents in schools with frequent, occasional, and no mobile educational data access by teachers: for mothers Mean Rank =276.32, 206.66, and 136.60 logins respectively, p's < .001, and for fathers Mean Rank =275.01, 209.28, and 134.62 logins respectively, p's < .001. Thus, the more teachers were active within the school

database through mobile, the more parents accessed educational data of their children via mobile devices.

4.3 Gender differences in mobile parental involvement

The Mann-Whitney *U* tests showed that compared to fathers (M = 2.17), significantly more mothers (M = 3.17) used mobile devices for accessing their children' educational data, $Z = -6.43$, $p < .001$. (As was explained in the Method section, since the schools using the database significantly differ on number of teachers and students, the number of participants and their logins are *relative* numbers instead of absolute ones). In addition, in comparison to fathers (M = 40.45), mothers (M = 70.6) logged significantly more onto the school database using ubiquitous mobile devices, $Z = -3.11$, $p < .01$.

5 Discussion

This study explored differences in ubiquitous mobile accessing the school database by students and their parents among schools with frequent, occasional, and no mobile access of educational data by teachers. In addition, this study investigated gender differences in mobile involvement of parents in function of their children in school. The results support both study hypotheses: (1) The number of mobile logins of teachers onto the school database influenced the number of ubiquitous mobile assess by students, their mothers, and fathers; (2) Compared to fathers, significantly more mothers used the mobile application during the period of investigation, and among parents who used the system from mobile devices, mothers login significantly more than fathers onto the database to monitor the function of their children in school.

According to Bandura's social-cognitive approach to learning (Bandura 1977; Rosenthal and Bandura 1978), a significant part of human learning occurs by *modeling*. It seems that adoption of the mobile educational data management is, at least partly, a modeling process. Note that the lack of mobile use of the database by teachers does not prevent its ubiquitous use by students and/or their parents. However, the finding showed that the more teachers access educational data via mobile, the more students and parents use the database from mobile devices. Students watch teachers entering educational data, updating, and accessing it via mobile devices during the lessons; parents watch teachers and a school principal accessing the data of their children through mobile phones during reunions and learn a new way to be informed on the function of their children in school. Mobile data access becomes a part of the "*hidden curriculum*" (see Kently, 2009): by entering and accessing data during the lessons and meetings, teachers implicitly convince students and their parents that they will persist in preparing student data pool and using this data for pedagogical purposes and data-driven decision-making. Thus, we recommend school principals to encourage mobile data entering and usage by teachers during lessons and meetings with students and their parents.

However, by changing the organizational culture and online communication between schools and their communities, it is important to encounter a golden mean between promoting an *accountable autonomy* (Blau and Presser 2013) via the mobile database versus obsessive instant *supervision* of teachers by school principals and

students by teachers/parents. Similarly to other education systems around the world (Selwyn 2015), in recent decades the Israeli education system has gone through considerable changes associated with global values that seek to revolutionize and improve public services (Perelman 2014). The research literature suggests (for review see: Harris, 2011) that high-performing education systems balance support and pressure; they generate professional energy and commitment, while hold educators accountable for performance. Distributed leadership can enhance the commitment of educators to the transforming change (Harris 2013) of ubiquitous school data management and making pedagogical decisions based on real-time information. Instead of maintaining the power status quo (Lumby 2013), a school database may be used to accomplish educational tasks through interactions, collective actions, and co-performance (Caspi and Blau 2011a; Harris et al. 2013), to share responsibilities and facilitate dialogue in pedagogical decision-making (Blau and Presser 2013; Perelman 2014). Future studies should use qualitative methodology for exploring mechanisms of modeling behavior, supervision-autonomy issues, and distributed leadership in the context of mobile and online educational data management.

The results of this study regarding ubiquitous mobile data management are consistent with previous studies that explored integration of school databases accessed via computers (Blau and Hameiri 2010, 2012). It seems that successful adoption of a mobile school database by teachers spreads out and widens data accessing by students and their parents. The results support broadening Island of Innovation and Comprehensive Innovation models of integrating new technologies (Avidov-Ungar and Eshet-Alkalai 2011) into the *School Community of Innovation* approach. In addition to teaching staff, School Community of Innovation model of adopting technologies by educational organizations includes students and their parents (Blau and Hameiri 2012). Note that this extension is not limited to integration of school databases. The School Community of Innovation model would be relevant for diverse technologies adopted by educational organization, for example, for implementing one-to-one computing with tablet PCs (Shamir-Inbal and Blau in press). In future studies we recommend exploring the adoption of other technological tools based on the School Community of Innovation model.

Concerning *gender differences in mobile parental involvement*, the results of ubiquitous mobile parental involvement in this study are consistent with previous findings regarding offline (Lamb 2010) and online parental involvement in function of children in school via computers (Blau and Hameiri 2012). Our results do not support the belief of *technological determinism*, which assumes that adoption of technology can produce social or behavioral changes (Nye 2007). It seems that technology does not change the traditional family roles: mothers are still more actively involved than fathers in ubiquitous mobile monitoring of how their children function in school. School principals and teachers should communicate more with fathers, including through the school database, promote their online and mobile access of educational data and enhance parental involvement of fathers in function of their children in school.

6 Implications and limitations

Based on the results of this study, we recommend school principals and educational policy-makers to address smartphones similarly to computers or tablet PC and embrace

their ubiquitous use in schools as one-to-one technology for pedagogical and administrative purposes. Unfortunately, the pedagogical and administrative potential of mobile devices in educational organizations is usually ignored, and in some cases the use of smartphones by students and teachers during the lessons is explicitly prohibited. Our findings question this educational policy. Encouraging teachers to enter data via mobile devices during lessons and access data in meetings with students or/and with their parents not only can improve data-based pedagogical decision-making, but also serves as modeling that can promote the adoption of the school database's ubiquitous mobile use by families. In many countries there are schools without wireless internet connection. On the other hand, many of teachers, students, and parents use smartphones with package of cellular internet connection that have a range of possibilities similar to computers or tablet PCs, and these mobile devices "stick" to users 24/7. Mobile data entering during the lessons can diminish the workload on teachers by avoiding double-noting (in a class journal during the lessons and on a school database after the lessons). This would free time for more essential pedagogical processes and encourage mobile use of the data by other stakeholders.

This study contributes to both research and practice. The paper demonstrates the success of implementing technology based on the *School Community of Innovation* model, including teachers, students, and their parents. In contrast to self-report studies, this paper adopts learning analytics approach and analyzes actual behavior of teachers, students, and their parents. Different to case-studies with small samples, this paper analyzes all activities conducted by the population of all the database users - 429 schools - during entire academic year. Educational policies based on the findings can promote practice of effective adoption of innovative technologies in schools, as well as establish culture of ubiquitous educational data management and interaction between schools and their communities.

However, this study explores the adoption of the mobile school database during the first year of its integration and is exclusively based on quantitative methodology. Further research may explore the School Community of Innovation model over a longer period of time, in a different school databases, or using other technology. It would be interesting to cross-check quantitative log analysis with interviews of school principals, teachers, students, and parents or/and with observations of school staff using a school database for data-driven decision-making during pedagogical reunions and meetings with students and parents.

References

Avidov-Ungar, O., & Eshet-Alkalai, Y. (2011). The islands of innovation model: opportunities and threats for effective implementation of technological innovation in the education system. *Issues in Informing Science and Information Technology, 8*, 363–376.

Bandura, A. (1977). *Social learning theory*. Englewood. Cliffs, N.J.: Prentice-Hall.

Benamotz, R., & Blau, I. (2015). *Implications of teacher-student relationships via a social network on teaching, learning, and classroom atmosphere* (pp. 3082–3085). Las Vegas, US: In Proceedings of the Society for Information Technology & Teacher Education International Conference.

Blau, I. (2011). Application use, online relationship types, self-disclosure, and internet abuse, among children and youth: implication for education and internet safety programs. *Journal of Educational Computing Research, 45*, 95–116.

Blau, I., & Barak, A. (2009). *Synchronous online discussions: participation in a group audio conferencing and textual chat as affected by communicator's personality characteristics and discussion topics* (pp. 19–24). Lisbon, Portugal: In Proceedings of the International Conference on Computer Supported Education - CSEDU'09.

Blau, I., & Barak, A. (2012). How do personality, synchronous media, and discussion topic affect participation? *Educational Technology & Society, 15*(2), 12–24.

Blau, I., & Caspi, A. (2010). Studying invisibly: media naturalness and learning. In N. Kock (Ed.), *Evolutionary psychology and information systems research: A new approach to studying the effects of modern technologies on human behavior* (pp. 193–216). New-York: Springer.

Blau, I., & Hameiri, M. (2010). Implementing technological change at schools: the impact of online communication with families on teacher interactions through learning management system. *Interdisciplinary Journal of E-Learning and Learning Objects, 6*, 245–257.

Blau, I., & Hameiri, M. (2012). Teachers-families online interactions and gender differences in parental involvement through school data system: do mothers want to know more than fathers about their children? *Computers & Education, 59*, 701–709.

Blau, I., & Hameiri, M. (2013). *Mobile school data management by teachers and families: Innovative practices for changing educational institutions? Paper presented at the international conference of "technology, innovation and social change". Tata Institute of Social Science*. India: Mumbai.

Blau, I., & Neuthal, T. (2012a). Tweeting educational technology: a tale of professional community of practice. *International Journal Cyber-Society and Education - IJCSE, 5*(1), 75–80.

Blau, I., & Neuthal, T. (2012b). Twitter as a platform for an Israeli community of information science professionals. *Issues in Informing Science and Information Technology, 9*, 177–186.

Blau, I., & Peled, Y. (2012). Teachers' openness to change and attitudes towards ICT: comparison of laptop per teacher and laptop per student programs. *Interdisciplinary Journal of E-Learning and Learning Objects, 8*, 73–82.

Blau, I., & Presser, O. (2013). E-leadership of school principals: increasing school effectiveness by a school data management system. *British Journal of Educational Technology, 44*(6), 1000–1011.

Blau, I., & Shamir-Inbal, T. (2016). Digital competences and long-term ICT integration in school culture: the perspective of elementary school leaders. *Education and Information Technologies*, 1–19. doi:10.1007/s10639-015-9456-7.

Blau, I., Mor, N., & Neuthal, T. (2009). Open the windows of communication: promoting interpersonal and group interactions using blogs in higher education. *Interdisciplinary Journal of E-Learning and Learning Objects, 5*, 233–246.

Blau, I., Mor, N., & Neuthal, T. (2013). Interacting for learning: digital portfolios for a learning community in a university course. *Learning, Media and Technology, 38*(3), 241–255.

Blau, I., Peled, Y., & Nusan, A. (2014). Technological, pedagogical and content knowledge in one-to-one classroom: teachers developing "digital wisdom". *Interactive Learning Environments*. doi:10.1080/10494820.2014.978792.

Caspi, A., & Blau, I. (2011a). Collaboration and psychological ownership: how does the tension between the two influence perceived learning? *Social Psychology of Education: An International Journal, 14*, 283–298.

Caspi, A., & Blau, I. (2011b). Media choice for intra-school communication: the role of environment, user, and medium. *Journal of Educational Multimedia and Hypermedia, 20*(4), 337–360.

Davis, J. P., & Eisenhardt, K. M. (2011). Rotating leadership and collaborative innovation recombination processes in symbiotic relationships. *Administrative Science Quarterly, 56*(2), 159–201.

Dror, Y., Gershon, S., & Blau, I. (2012). *Learning with technology*: *A survey of Israeli youth on the role of technology in teaching and learning.* Research report. The College of Management Academic Studies. Rishon Le-Zion, Israel. Retrieved Mar 29, 2016 from http://www.colman.ac.il/research/research_institute/Israel_project_Digital/Documents/Israelis_digital_eng_.pdf

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: a meta-analysis. *Educational Psychology Review, 13*, 1–22.

Fishel, M., & Ramirez, L. (2005). Evidence-based parent involvement interventions with school-aged children. *School Psychology Quarterly, 20*, 371–402.

Forkosh-Baruch, A., Mioduser, D., & Nachmias, R. (2010). *Cross-case analysis of innovative pedagogical practices using technology*, *In Proceedings of the International Conference on Education Technology and Computer - ICETC (pp. 603–607)*. China: Shanghai.

Fuchs, I. (1995). *Change - a way of life in schools*. Tel-Aviv: Cherikover publishers [in Hebrew].

Garrison, D. R., & Vaughan, N. D. (2013). Institutional change and leadership associated with blended learning innovation: two case studies. *The Internet and Higher Education, 18*, 24–28.

Hango, D. (2007). Parental investment in childhood and educational qualifications: can greater parental involvement mediate the effects of socioeconomic disadvantage? *Social Science Research, 36*, 1371–1390.

Harris, A. (2011). System improvement through collective capacity building. *Journal of Educational Administration, 49*(6), 624–636.

Harris, A. (2013). *Distributed leadership matters*. Thousand Oaks, CA: Corwin Press.

Harris, A., Jones, M., & Baba, S. (2013). Distributed leadership and digital collaborative learning: a synergistic relationship? *British Journal of Educational Technology, 44*(6), 926–939.

Ho, L.-H., Hung, C.-L., & Chen, H.-C. (2013). Using theoretical models to examine the acceptance behavior of mobile phone messaging to enhance parent-teacher interactions. *Computers & Education, 61*, 105–114.

Jamerson, J. (2013). E-leadership in higher education: the fifth "age" of educational technology research. *British Journal of Educational Technology, 44*(6), 889–915.

Jeynes, W. H. (2005). Effects of parental involvement and family structure on the academic achievement of adolescents. *Marriage & Family Review, 37*, 99–116.

Kaplan Turan, N. (2004). *Parental involvement, self esteem, and achievement among junior high-school students*. Doctoral Dissertation: Department of Education, University of Haifa, Israel [in Hebrew].

Lamb, M. E. (2010). How do fathers influence children's development? In M. E. Lamb (Ed.), *The role of father in child development* (5th ed.). New Jersey: John Wiley & Sons Inc.

Lewin, C., & Luckin, R. (2010). Technology to support parental engagement in elementary education: lessons learned from the UK. *Computers & Education, 54*, 749–758.

Lumby, J. (2013). Distributed leadership the uses and abuses of power. *Educational Management Administration & Leadership, 41*(5), 581–597.

Marzano, R. J., & Waters, T. (2009). *District leadership that works, striking the right balance*. Bloomington, IN: Solution Tree Press.

Moorman Kim, E., Coutts, M. J., Holmes, S. R., Sheridan, S. M., Ransom, K. A., Sjuts, T. M., & Rispoli, K. M. (2012). *Parent involvement and family-school partnerships*: *Examining the content*, *processes*, *and outcomes of structural versus relationship-based approaches*. Meta-analysis. Nebraska Center for Research on Children, Youth, Families and Schools (CYFS). Retrieved Mar 29, 2016 from http://cyfs.unl.edu/docs/working_papers/CYFS_Working_Paper_2012_6.pdf

Nye, D. (2007). *Technology matters: Questions to live with*. Cambridge MA: MIT Press.

Peled, Y., Blau, I., & Grinberg, R. (2015). Does 1:1 computing in a junior high-school change the pedagogical perspectives of teachers and their educational discourse? *Interdisciplinary Journal of e-Skills and Lifelong Learning-IJELL, 11*, 257–271.

Perelman (2014). What are the relationships between teachers' engagement with management information systems and their sense of accountability? *Interdisciplinary Journal of E-Learning and Learning Objects, 10*, 217–227.

Rogers, E. M. (2003). *Diffusion of innovations* (5 ed.). New York: Free Press.

Rosenthal, T. L., & Bandura, A. (1978). Psychological modeling: Theory and practice. *Handbook of Psychotherapy and Behavior Change: An Empirical Analysis, 2*, 621–658.

Selwood, I., & Visscher, A. (2007). The potential of school information systems for improving school performance. In N. Soguel & P. Jaccard (Eds.), *Governance and performance of education systems*. Berlin: Springer.

Selwyn, N. (2015). Data entry: towards the critical study of digital data and education. *Learning, Media and Technology, 40*(1), 64–82.

Selwyn, N., Banaji, S., Hadjithoma-Garstka, C., & Clark, W. (2011). Providing a platform for parents? Exploring the nature of parental engagement with school learning platforms. *Journal of Computer Assisted Learning, 27*(4), 314–323.

Shamir-Inbal, T. & Blau, I. (in press). Developing digital wisdom by students and teachers: the impact of integrating tablet computers on learning and pedagogy in an elementary school. *Journal of Educational Computing Research*.

Sheridan, S. M., Knoche, L. L., Edwards, C. P., Bovaird, J. A., & Kupzyk, K. A. (2010). Parent engagement and school readiness: effects of the getting ready intervention on preschool children's social-emotional competencies. *Early Education and Development, 21*, 125–156.

Taylor, R. T. (2010). Leadership to improve student achievement: focus the culture of learning. *Journal of Scholarship & Practice, 7*(1), 10–23.

Turner, E. (2010). Technology use in reporting to parents of primary school children. *ACM SIGCAS Computers and Society, 40*(3), 25–37.

Weiser, O., Blau, I., & Eshet-Alkalai, Y. (2016). *The role of pedagogy, media, and students' personality in synchronous learning: Comparing face-to-face and video conferencing participation. In Proceedings of the 10th annual International Technology, Education and Development Conference- INTED2016* (p. 5005). doi: 10.21125/inted.2016.0226. Valencia, Spain.

Williamson, B. (2015). Digital education governance: data visualization, predictive analytics, and 'real-time' policy instruments. *Journal of Education Policy*, (ahead-of-print), 1–19. doi:10.1080/02680939.2015.1035758.

Yoder, J. R., & Lopez, A. (2013). Parent's perceptions of involvement in Children's education: findings from a qualitative study of public housing residents. *Child and Adolescent Social Work Journal, 30*(5), 415–433.

Zhao, Y. (2012). *World class learners: Educating creative and entrepreneurial students*. Thousand Oaks, CA: Corwin.

Zuckerman, O., Blau, I., & Monroy-Hernández, A. (2009). Children's participation patterns in online communities: an analysis of Israeli learners in the scratch online community. *Interdisciplinary Journal of E-Learning and Learning Objects, 5*, 263–274.

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.

Parent and Student Perceptions of Parent Engagement at a Cyber Charter High School

Jered Borup and Mark A. Stevens
George Mason University

Lisa Hasler Waters
Flint Hill School, VA

Abstract

As enrollments in cyber charter schools grow, it becomes increasingly important to understand how parents engage in their students' learning. Researchers have hypothesized that parental engagement is even more critical when online students learn from home, but few researchers have examined parents' engagement behavior—especially parents of adolescent learners. In this case study we addressed this gap using parent and student interviews at a full-time online charter school. Our analysis of 19 interviews with 9 parents and 10 interviews with 10 students identified five primary types of parental engagement within this setting: (1) nurturing relationships and interactions, (2) advising and mentoring, (3) organizing, (4) monitoring and motivating student engagement, and (5) instructing. We also identified obstacles to effective parental engagement, and in this paper we discuss how programs can work with parents to foster more collaborative relationships.

Introduction

K-12 online learning began over 20 years ago and has expanded rapidly during the last decade. The majority of enrollments are from high school students supplementing their face-to-face courses with one or two online courses. These types of supplemental courses are commonly provided by programs traditionally called virtual schools (Barbour, 2013). Students are also increasingly enrolling in cyber schools (International Association for K-12 Online Learning [iNACOL], 2012), or programs that allow students to take all or most of their courses online (Barbour, 2013). These growth trends have occurred

despite attrition rates that are higher than those found in traditional brick-and-mortar schools (Freidhoff, 2015; Miron & Gulosino, 2015; Watson, Murin, Vashaw, Gremin, & Rapp, 2013). Although the solution to narrowing this achievement gap is multifaceted and complex, some researchers have focused on the need to more fully engage parents in the learning process—especially in cyber schools where students spend all or most of their time studying at home (Borup, Graham, & Davies, 2013; Liu, Black, Algina, Cavanaugh, & Dawson, 2010). However, little research exists that has examined parental engagement in cyber schools, and the existing research has focused largely on parental engagement in online elementary school settings (Hasler Waters, Menchaca, & Borup, 2014).

The lack of research on parental engagement with older student populations is especially concerning because the majority of cyber school enrollments have occurred within high school populations (Watson et al., 2013). Although research with younger populations can be insightful, generalizations cannot be made to adolescent students due to differences in student characteristics and course content (McNeal, 2012). The limited research that has examined parental engagement in cyber high schools has also been based largely on parent (Curtis, 2013) and teacher (Borup, 2015) perceptions, and greater insights are likely when these perceptions are examined in conjunction with those of students. In this research we addressed this gap using interview data obtained from students *and* parents at a cyber high school.

Literature Review

Researchers have reported that parental engagement in K-12 online learning is critical to improving course outcomes (Boulton, 2008; Litke, 1998). Klein (2006) also reported that parents found it rewarding to work closely with their students, especially when they witnessed their children making connections between the course content and their daily life. Liu et al. (2010) suggest that parents who support their students in online courses could help students develop perseverance and an internal locus of control, as well as organizational and time management skills. However, research is lacking that helps to better understand the types and amounts of parental involvement necessary to help students succeed in these unique environments. In this section of the article, we will first review the research examining the levels of parental engagement in online environments and the overall impact that their engagement has on learning outcomes. Following that review, we will discuss the frameworks that have been created in an attempt to categorize the various types of parental engagement in online learning environments.

Levels and Impact of Parental Engagement

Researchers have found that levels of parental involvement in online learning vary across students. For instance, 79 parent survey respondents reported spending nearly 1.5 hours per week interacting with their students regarding their learning in a freshman English course at a cyber high school (Borup, Graham, & Davies, 2013). Parent responses varied greatly, resulting in a standard deviation (74.3) close to the mean (86.0). Litke (1998) was the first to document this phenomenon qualitatively. Following the analysis of teacher, student, and parent interviews at a small program that allowed students to take most of the coursework online, Litke identified three types of parents:

1. Absentee parents who provided students with little support or supervision due to demands outside of the home.
2. Supportive parents who increased their engagement following student difficulties.
3. Participatory parents who worked closely with students throughout the course.

Similarly, Hasler Waters et al.'s (2014) review of the literature found that parents of online students traversed along a continuum of engagement—from no engagement to full engagement—based on student needs, school policies, and availability. Because needs vary across students, it is not surprising that the level of parental engagement also varies. However, problems arise when parents' misconceptions about

students' needs or other factors prevent them from providing the needed level of support that students require. For instance, Litke (1998) in part blamed poor course outcomes on parents who underestimated student needs and failed to provide them with adequate support. More recently, parents in Borup et al.'s (2013) research rated their motivational impact on student learning at a cyber high school significantly lower than the impact that their students reported. Parents' underestimating their potential impact helps to explain Boulton's (2008) case study of British high school students enrolled in a two-year online certificate program. Boulton found that parents initially supported students, but their support quickly declined and was a contributing factor in some students' failure in the program. Boulton hypothesized that sustained teacher–parent communication could have helped parents to better understand and fulfill their responsibilities. Although the number of schools that have explicit policies for teacher–parent communication is growing, many schools do not have such requirements, and those that do exist tend be reactionary, requiring parents to communicate with teachers after their student has performed poorly (Cavanaugh et al., 2009).

Although important, communication from teachers is unlikely to overcome all of the obstacles to parental engagement. For instance, Russell (2004) reported that virtual-school parents who were economically disadvantaged and required to work long hours outside of the home could not provide important student supervision at home, placing their students at a disadvantage. Additionally, parents' perceptions of their responsibilities and their self-efficacy in their abilities to impact student learning can determine the types and levels of support that parents provide. As a result, it is important that researchers work to better understand parent perceptions and experiences.

Only two studies have quantitatively examined the relationship between levels of parental engagement and online student performance. First, Black (2009) conducted a regression analysis and found no significant relationship between parents' (n = 452) reported levels of engagement and students' academic achievement in their virtual school courses. However, Black conducted a second regression analysis that included only the survey responses from the parents (n = 164) whose child also completed an accompanying student survey. This analysis found a positive relationship between parents' reported level of student praise and their child's academic achievement but a negative relationship between parents' reported levels of instruction and their child's academic achievement. Similarly, Borup et al. (2013) identified negative correlations between parents' reported levels of interaction with their cyber school student and student learning outcomes. However, these researchers warned against interpreting the negative relationships too simply by concluding that parents do not have a significant impact on student learning. Borup et al. (2013) explained, "If a large portion of parental interaction occurred in reaction to poor student performance, the correlation that results from examining a large group of students could mask the true benefit of parental involvement on individual student learning" (p. 52). Also, Borup et al. measured only the total time that parents spent interacting with students, not the intended purposes of those interactions. It is possible that more refined instruments would help to identify how particular types of parent engagement are correlated to certain learning outcomes with students who have specific learning characteristics. However, the initial obstacle to this type of research is that researchers have yet to identify and clearly define the different types of parental engagement in a cyber school setting.

Types of Parental Engagement

Graham, Henrie, and Gibbons (2014) explained that frameworks "by their very nature attempt to establish a common language and focus for the activities that take place in a scholarly community" (p. 13). These researchers also made the distinction between *explore frameworks*, which attempt to define and categorize variables within a phenomenon, and *explain frameworks*, which seek to identify relationships between variables and establish causal relationships. Parental engagement in cyber schools is a relatively new phenomenon and, as expected, researchers have struggled to establish widely accepted frameworks. In this section we will review initial attempts to identify types of parental engagement within online learning environments.

Guided by Hoover-Dempsey and Sandler's (1995, 2005) framework established in face-to-face settings, Hasler Waters (2012) conducted an in-depth case study examining how five parents engaged in their students' learning at a cyber elementary school. The school required parents to assume a high level of responsibility and act as *learning coach*. Learning coaches are commonly used by cyber schools and typically assume many of the administrative and supervisory roles that are typically performed by teachers in a face-to-face environment (Hasler Waters, Barbour, & Menchaca, 2014). Shoaf (2007) also explained that learning coaches of young students might grade and compile students' work for the online instructor to review. Hasler Waters found that parents acting as learning coaches engaged in encouraging, reinforcing, modeling, and instructing activities similar to those described by Hoover-Dempsey and Sandler (1995, 2005). However, she identified two additional types of parental engagement. First, parents engaged in adapting strategies that helped tailor instructional strategies, environments, schedules, and their own belief systems to better meet student needs. Second, parents leveraged support and materials from a variety of locations in ways that benefited students' learning.

Although Hasler Waters' (2012) framework can be insightful to those attempting to understand parental engagement in cyber high school settings, it should not be generalized. Research conducted in face-to-face settings has found that parental engagement tends to decline as students age, and the effective types of parental engagement in high school settings can differ from those effective in younger grades (Noel, Stark, Redford, & Zuckerberg, 2015). McNeal (2012) added, "What is an appropriate and effective form of parent involvement for younger children may not be effective for children in later adolescence" (p. 88). The same phenomenon is also likely in cyber school settings. This may help to explain why Hasler Waters' classification of parental engagement has differed from those applied in cyber high schools.

Curtis' (2013) dissertation research was the first to identify types of parental engagement at a cyber high school. Curtis conducted 16 interviews with eight parents and categorized parents' primary engagement responsibilities into three categories: monitoring, mentoring, and motivating. Similar to Hasler Waters (2012), Curtis defined motivating as actions that encourage and reinforce student engagement. Monitoring included tasks such as establishing learning schedules, organizing learning materials, and tracking student behavior and performance. Lastly, mentoring consisted of parents demonstrating their love and care for students and guiding them through learning activities.

More recently, Borup, West, Graham, and Davies (2014) used existing online learning research to create the Adolescent Community of Engagement (ACE) framework. The framework was designed to provide a more comprehensive understanding of student support systems by explaining how parents, teachers, and student peers could work in conjunction to improve adolescent student engagement in online learning settings. The ACE framework (see Figure 1) also moved past simply exploring the different types of engagement by establishing "researchable hypotheses on how those types of engagement may improve students' success" (p. 108). As a result, the ACE framework was selected for this research.

The ACE framework hypothesizes that parents have the following overlapping responsibilities:

- *organizing* students' environment and time,
- *instructing* students not only in the course content but in how to learn it effectively, and
- *facilitating student interactions* with the content and others in the course. This third responsibility was made up of three subelements:
    - *nurturing* caring relationships and fulfilling students' basic needs,
    - *volunteering* at school activities, and
    - *monitoring and motivating* student engagement.

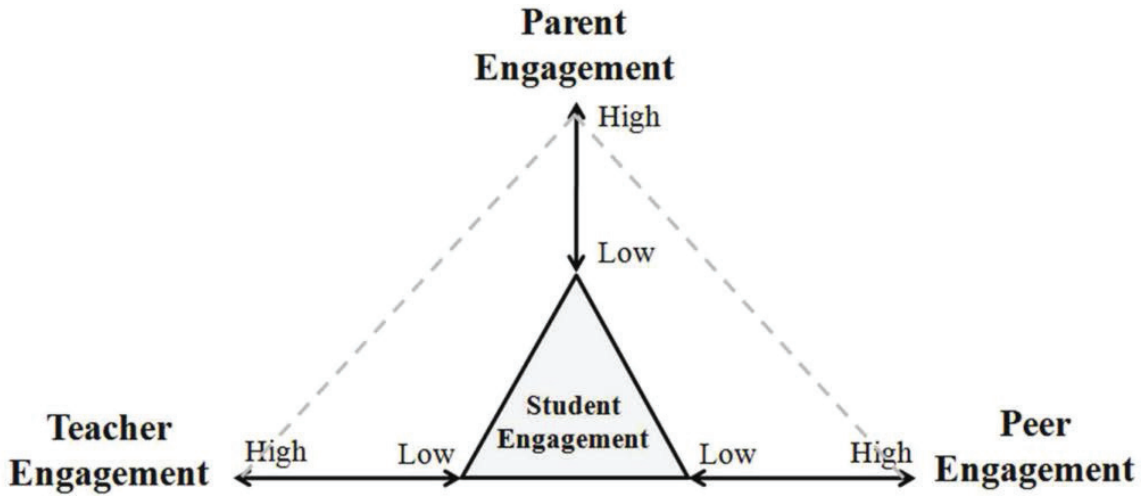


Figure 1. This figure represents the ACE framework. The surface area of the center triangle represents the level of student engagement. The ACE framework's primary hypothesis is that the level of student engagement will increase in conjunction with the levels of teacher, parent, and peer engagement.

The authors claimed that parents and teachers could perform these responsibilities separately but that greater educational outcomes would result if their efforts were coordinated. It should also be noted that the ACE framework was not designed specifically to explain parental engagement within cyber schools, and the authors stated, "Differing learner models will also place varying emphasis on parent engagement. In full-time online programs [cyber schools] students work from home, increasing the need for parental monitoring, organizing, and instructing in comparison to what is required in supplemental programs" (Borup et al., 2014, p. 23).

Borup (2015) used the ACE framework to examine teacher perceptions of parental engagement at a cyber charter high school and found the framework largely consistent with teachers' perceptions. However, Borup also identified *encouraging communication* to be an important element of parent engagement because teachers commonly reported that parents fostered learner–instructor interactions. Additionally, while volunteering was an important way parents fostered student engagement, it appeared to be a subcategory of motivating rather than its own element, as originally explained in the ACE framework. Teachers also expressed some frustrations when working with parents who failed to respond to their communication or who overstepped their responsibilities. For instance, some teachers believed that a small number of parents were doing students' work rather than scaffolding them throughout the learning process. One of the primary limitations of this research was that it relied solely on teacher perceptions. This research was also guided by the ACE framework, but we focused on interview data obtained from both parents and their students.

Methods

We used a descriptive qualitative case study methodology for this research. Stake (2010) explained that qualitative research is best when the purpose of the research is "understanding one thing well" (p. 27). Merriam (1998) also recommended that researchers "see the case as a thing, a single entity, a unit around which there are boundaries" (p. 27). For this case study, we placed boundaries around parent engagement in a cyber high school. Following Wolcott's (1994) recommendation, we resisted the "tendency to increase the scale, rather than the depth" (p. 181). As a result, we examined parental engagement at only a single online charter high school, with the understanding that this approach

prevented us from making comparisons across settings. However, we also had embedded units within our case study so that we could identify themes across multiple parents at the school (Baxter & Jack, 2008).

Context

We selected Mountain Heights Academy (MHA), a cyber charter high school in Utah, as the site for this case study. At the time data was collected, MHA employed 21 teachers and enrolled 338 students in Grades 9–12. The average course pass rate across all courses was 76%, and of all grades earned, 40% were an "A." As a school, MHA outperformed the state average in English, science, and math on the criterion-referenced test required by the state. MHA estimated that 18% of its student body was previously homeschooled, 14% was economically disadvantaged, 11% was enrolled in special education, and 90% was white.

MHA's belief statement, published on its website (http://mountainheightsacademy.org), stated that "students, parents, and teachers are all part of the educational team" (MHA, 2015, para. 2). MHA attempted to foster collaborative relationships with parents at a mandatory face-to-face orientation with teachers and administrators and via a parent organization that parents automatically joined at registration. MHA also held nonmandatory face-to-face activities throughout the year and invited parents to participate with their students.

Data Collection

Participant sampling was based on teacher recommendations. MHA assigned each student to a teacher who acted as a "shepherd." Shepherds regularly communicated with students and their parents to provide general support and act as an anchor adult whom they could contact for assistance. As a result, teachers tended to form close relationships with the students whom they shepherded. We asked five shepherds to use this understanding to help us sample two of their students for interviews for a total of 10 students. Using purposeful sampling, we asked each teacher to consider the average MHA student and provide a name of a student who was more highly engaged and a name of a student who was less engaged than the average student but also responsive to provided support and encouragement.

We invited each sampled student to participate in an hour-long interview. If a student declined, we obtained another teacher recommendation until we successfully sampled 10 students. Of the student participants, six were female and four were male. Students were also sampled across all grades: one freshman, three sophomores, two juniors, and four seniors. In addition, we conducted two interviews with each student's parent who was the most engaged in the student's learning. In all cases the parent was the mother. In one case siblings were sampled based on separate teacher recommendations. As a result we interviewed the siblings' mother three times instead of two. Of the nine mothers, eight did not work outside the home.

Data Analysis

The analysis was guided by elements of constant comparison coding methods as described by Glaser (1965). Parent and student statements were coded into as many different categories as possible while also following what Glaser referred to as the "defining rule for the constant comparative method" (p. 439)—comparing each statement or incident to all previous coded incidents. Codes were grouped based on similarities. This grouping was guided by the ACE framework. However, we were sensitive to themes that were not previously identified within the framework. One researcher took the lead analyzing the student interviews, and another researcher took the lead coding the parent interviews.

Measures were also taken to improve the trustworthiness of our analysis. Prior to analysis we conducted member checks by sending interview transcriptions to participants, who then checked them for

accuracy. Another member of the research team regularly reviewed all of the coding following the coding of every two to three interviews, and any disagreements in the coding were discussed and resolved.

Findings

Analysis of student and parent interviews resulted in the identification of five primary types of parental engagement. Each type of engagement is discussed in this section of the article.

Nurturing Relationships and Interactions

A major theme identified in the analysis was that parents' ability to facilitate communication and nurture close and trusting relationships with their students formed the foundation for all other types of parental engagement (see Table 1). Ashley summarized that before she and her spouse could impact their son's learning he needed to trust them, and their son Eric explained that he trusted his parents because they had responded to his learning needs in the past. As a result, there appeared to be a reciprocal relationship between trusting relationships and parents' impact on their students' learning, because a trusting relationship was both an outcome and a catalyst for parental engagement.

One parent emphasized the need for parents to proactively nurture loving relationships with their students: "There are lots of things that your children can learn in the outside world, but they can only really learn that you love them from you." Parents appeared to nurture loving relationships by listening to their students, understanding their academic and personal needs, and responding in ways that met those needs. Leslie believed that when she responded to her students' academic needs her students told themselves, "Hey, Mom loves me. I know she does because she makes sure that I'm getting my school done." However, five parents reported that engaging in their students' learning caused conflict. The level of conflict ranged from mild irritation to verbal altercations and open defiance. On one end of the spectrum, Alice found that her daughter would get irritated if Alice attempted to "micro-manage her." Laura was on the other end of the spectrum and reported that her son became extremely angry at seemingly benign actions. She explained that if she checked how much time her son spent in his courses he would become angry and say, "How dare you? How dare you check on me?" Similarly, Laura stated that if she reminded her son of upcoming due dates he would say, "It's none of your business, I'll get it in! Why are you bugging me?" Perhaps not surprisingly, Laura expressed discouragement and stated that she no longer wanted to do "battle" with her son.

Parents and students also recognized the importance of nurturing student–teacher relationships and interactions. Alice explained that teachers and parents "are both interested in the same outcome…. We both have to provide the support that we can." Samantha also acknowledged differences in the ways her parents and teachers engaged in her learning:

> It made me really confident and secure knowing that, even though my teachers were there and willing to help, that my parents were there if I needed a different kind of support. It really made me feel that I could do anything and accomplish anything I wanted because of that support system they provided.

However, some students were "shy about talking directly with teachers and getting help," and parents had to help nurture student–teacher relationships and interactions. For instance, Leslie would tell her son, "Dude, you've got to go to the teachers…. Your teacher's your best resource." Ellie, who was in her second year at MHA, provided a student's perspective when she said,

> I didn't really know how to ask for help from my teachers so I did turn to my parents a lot. … My parents were pushing me to go and ask my teacher … I hate being pushed… Eventually I just emailed [my teacher] and asked for help and she was really polite and responded.

Table 1 *Coding Results for Nurturing Relationships and Interactions*

Indicators	Parents (*n*)	Students (*n*)	Examples
Nurturing parent–teacher communication	9	5	"I know they get a lot of criticism, so I've tried to say [to the teachers], 'You know, I think it's great that you did this assignment'" (parent)
			"My mom would start quite a bit of conversations with [teachers] whenever she had questions." (student)
Providing for students' basic academic needs	8	3	"Just yesterday she asked me for some small candies or pennies for a lab she was doing." (parent)
			"Most of the time I'll have the stuff to do an assignment." (student)
Nurturing close student relationships	6	7	"Having that nurturing environment is crucial to any success, no matter what you're doing." (parent)
			"I think that your relationship with your parent actually affects your grades." (student)
Nurturing student–parent communication	6	7	"[S]he definitely seems happier at school when I take the time just to connect with her every day." (parent)
			"[My parents] would come to us and say, 'Do you need help? Are you struggling with something?'" (student)
Nurturing student–student communication	4	3	"I know that if that [social] element isn't there, then the education also suffers." (parent)
			"The first year, when I wasn't so social, they would help with that and encourage me to go on field trips." (student)

Parents also had to help their students correctly interpret teacher communications. Sylvia remembered that her daughter became frustrated after misinterpreting a teacher e-mail, and Sylvia had to ask her daughter, "Well, what's really happening here?"

Lastly, parents recognized the importance of collaborative relationships with teachers. One parent stated that teacher communication sent to her let her know "the teacher is paying attention to how [the students] are doing." Parents who initiated contact with teachers were also generally happy at how quickly they received a response. Leslie explained, "I get responses right back. They don't delay at all."

Leslie summarized, "It's amazing the support that they give." Although most parent–teacher communication was positive, some parents shared that there were negative communications. Laura, a parent of an underperforming student, expressed some frustration that teachers did not contact her more frequently using mediums other than e-mail. However, Laura also accepted some of the blame because she "could have done a little more" to initiate contact with teachers. Ruth took exception when a teacher reprimanded her student for requesting an extension on an assignment due date. Inversely, Ashley became frustrated when a teacher did not hold her son to a higher standard. Another parent found collaborating with teachers difficult because she perceived that the teachers wanted to keep her at "arm's length," taking the attitude that, "We'd like you involved if you do what we tell you to do, but we don't want too much." Janice also expressed frustration with a teacher but admitted that establishing a relationship with the teacher may have helped, "I don't know her, never met her, but that could have been helpful."

Advising and Mentoring

Parents engaged in advising and mentoring activities when they assisted students on issues that extended beyond students' current course load (see Table 2). Parents explained that adolescents begin to make decisions "they have to live with" but "don't always see the end from the beginning." As a result, parents advised their students in an attempt to ensure that they made wise decisions that would positively impact their future. One of these long-lasting decisions was to enroll in MHA. As legal guardians, parents could have unilaterally enrolled their students at MHA, but parents understood that students would not "give it all their effort" if they were not part of the decision-making process.

Table 2 *Coding Results for Advising and Mentoring*

Indicators	Parents (*n*)	Students (*n*)	Examples
Assisting with enrollment	9	4	"I was intrigued [with MHA] and it looked like something that could work for us." (parent) "[My mom] put my name in the lottery to get me into the school." (student)
Encouraging students to set long-term goals	3	5	"We've encouraged both boys to take certain classes because of their college preparatory value." (parent) "[My parents] want me to learn as much as I can and be able to…grow up and become the best person that I can." (student)

Parents also advised students on setting goals after MHA, typically to attend college, so that they would "have better opportunities in life." In order to help prepare their students to get accepted into college, some parents encouraged their students to participate in extracurricular activities. For instance, Ashley explained, "Throughout high school we've talked about what kind of things look good on a college application. So we've encouraged him to do service, we've encouraged him to do his Eagle Scout—all those things we knew would help." Furthermore, Ashley advised her son on specific courses to take that would prepare him for college and qualify him for a scholarship. Leslie added that she "was always very involved with her [daughter's] counselors" to ensure that she was providing her daughter

with sound advising that would help her to reach her goal to attend cosmetology school. Lastly, Christine, who had previously homeschooled her students, enrolled her son into MHA because when it came time for him to apply to colleges he would "need a diploma, something credible, something to say he really did it."

Organizing

Transitioning to online learning required students who were previously homeschooled or attended a brick-and-mortar school to change how they learned, and parents assisted students in making this transition by helping them organize their space and time (see Table 3). For instance, Edith stated that students needed "a place where they know where they go [to learn]" or they would be "going all over the house." In fact, Janice found that she had to establish several different work spaces so her daughter could choose the one that she preferred. Providing a working environment that was free from distractions was especially difficult when multiple students were home. Ashley shared, "They get distracted from everything. I have a four year old screaming right now. There's a lot of distraction in this house." Edith explained that it was difficult to provide an organized learning environment because she was not organized herself.

Table 3 *Coding Results for Organizing*

Indicators	Parents (*n*)	Students (*n*)	Examples
Organizing time	9	9	"I do try to help her decide what subjects she wants to do and in what order." (parent) "My parents helped me to organize my time and the amount of assignments they wanted me to do a day." (student)
Organizing space	9	6	"We made a designated spot for each child to work. … Where there would be as few distractions as possible." (parent) "[My parents] always tried to make sure that it was quiet in there so that we could concentrate." (student)

Parents also found that they had to help students organize their time. One way parents would do this was by helping students create a learning schedule at the beginning of the year. This type of support then declined as students became more comfortable with learning online. However, the level of support varied throughout the year based on student characteristics. Anne, who had four students enrolled in MHA at different times, explained, "Each child is an individual, and I am finding with each of the four kids that I have to help some more than others."

Parents commonly supported their students by setting general expectations for the amount of time students should work each day and then creating daily or weekly learning schedules that prioritized specific learning activities. However, parents found that establishing detailed learning schedules was problematic because it was difficult to estimate the amount of time it would take students to complete assignments. Similarly, Sylvia explained that it was good for her to provide her daughter with scheduling "ideas and suggestions, but we're kind of all different and she doesn't operate the same as me."

Furthermore, some students rejected the schedules their parents provided. For instance, Eric admitted, "[My mom] usually makes a list for me that I don't really follow." As a result, parents commonly established general expectations and then provided students with flexibility on the course activities they worked on throughout the day. For instance, Alice established a "five-hour rule" that required her daughter to work "at least five hours every day for a 25-hour week" but allowed her to "decide what subjects she wants to do and in what order." This resulted in a somewhat inconsistent learning schedule for some students. For instance, Alice explained, "Some days [my daughter] will work on one subject almost all day for one day and then just do the others throughout the week. But other weeks she just does a little bit more evenly every day." Sylvia also provided her daughter with opportunities to plan her learning schedule but still maintained final approval over the schedules that she created.

It was possible for students to lose the freedom to set their own learning schedule if it negatively impacted their academic performance. Some parents also intervened when students spent so much time on their schoolwork that it negatively impacted other aspects of their lives. Samantha remembered that her parents had to "get involved a few times when it was 1 a.m. and [she] was still on the computer doing homework."

Sometimes parents proved ineffective at encouraging their students to maintain an adequate learning schedule. In the most extreme example, Laura explained that at times her son refused to do schoolwork and would leave the home without permission because she "physically can't restrain [him]." Some students also reported that occasionally parents actually distracted them from following a consistent learning schedule. For instance, Eric explained that at times he would be working on an assignment, and his mother would ask him to stop to help with his six brothers. Similarly, Amy stated that her parents would commonly interrupt her studies to have her help on the family farm:

> Sometimes it would have been in the middle of a quiz or an essay where I would have my "[thinking] cap" on, but I would lose that when I went to help and have to come back and be a little lost. I got really frustrated.

Although Amy talked to her parents about this issue, it continued to happen and she "had to get along with it." Ellie also found that at times when she was working her mother would take her away from her schoolwork to go with her on errands or to "to go get ice cream." Eric added that his mother's personal computer was not working, so they were "switching back and forth" on the computer that MHA provided Eric specifically for his education.

Monitoring and Motivating

Once students were enrolled in MHA and had an organized learning space and schedule, parents monitored and motivated students' behavior and performance (see Table 4). Although the level of monitoring and motivating that students needed could vary based on student characteristics, Anne explained that "even the independent [students] … need to feel that support from their parents." Parents commonly asked their students about their behavior and monitored their grades in the learning management system (LMS) or in weekly progress reports sent by teachers. Students also typically worked in locations where their parents could observe their behavior. This appeared helpful in keeping students on task. Eric explained, "It helps me keep on track, knowing that my mom is always in the kitchen." Parents' familiarity with students' personality and tendencies also helped them to monitor students' online behavior. For instance, Angie explained that her father would know that she was not doing schoolwork, because she would get a "little half-smile [on her face]."

Table 4 *Coding Results for Monitoring and Motivating*

Indicators	Parents (*n*)	Students (*n*)	Examples
Monitoring behavior	9	9	"I am fairly aware [of their behavior] because I walk in and out of the kitchen but they can find all kinds of ways to get around that." (parent)
			"If [my parents] catch me messing around watching YouTube videos and stuff, they will be like, 'Why aren't you doing school?'" (student)
Monitoring performance	9	9	"I used to look at his grades and assignments every day or every other day or I'd ask him, 'What do you have left in English?'" (parent)
			"My mom looks at my grades to make sure everything is okay." (student)
Modeling and volunteering	8	8	"When parents are involved…students see that it's important to the parents and so it's more important to them." (parent)
			"My dad works anywhere from 12 to 14 hours days. … It motivates me to get up in the morning to do my stuff." (student)
Encouraging engagement	7	9	"Sometimes if I see that she's lagging, I'll go over and make a little joke, 'Are you not getting enough attention?'" (parent)
			"[My mom] gives me moral support at times when I feel like school is crap and I don't want to take it anymore." (student)
Incentivizing engagement or performance	7	9	"As long as you can keep a B grade average, you don't have to pay your car insurance." (parent)
			"[My mom] will say, 'Why don't you go do this much math or science or whatever and then we can go do something fun.'" (student)
Establishing high expectations	7	4	"They know…if you have a college degree, you have better opportunities in life." (parent)
			"If I don't get straight 'A's I'm going to disappoint my parents." (student)
Praising performance and effort	6	5	"I am praising her for her hard work, it helps her." (parent)
			"[My mom] will say 'Oh, you got a 93 [percent] in Chemistry. Good job!'" (student)

Even when parents closely monitored their students at home, it could be difficult to know what students were actually doing on their computers, and some parents found it helpful to check students' analytic data within the LMS. Edith explained that by using this data "[she] knew how long [her student] was on the computer for what class so [she knew] if she's working or actually doing something else, [such as] chatting with other friends." Laura added that while she could use her parent login to "see how many hours and minutes were spent in each subject each day," it could be difficult to interpret the data because "it's a pretty long report," and it was sometimes unclear if students were actually doing "school things" when they were logged into the computer. Ashley found it more beneficial to review her son's browser history and discovered that he was chatting excessively with friends and Googling test questions. In one instance, she had her son e-mail the teacher and say, "I deserve a zero on this because I cheated." Despite some difficulty in monitoring students' online behavior, students' knowledge that parents could verify their online activity helped them to stay on task. Amber remembered being told at orientation that her teachers and parents would be able to monitor students' online behavior, and she believed that this awareness of being monitored "helped [her] a lot" to stay on task. Samantha also found that it "kept [her] focused" and that she "would have been less careful about things" if that data had not been made available to her parents.

Parental monitoring appeared to decrease once students showed the ability to stay on task and be successful online. For instance, Eric remembered that when he started at MHA his mother was a strict disciplinarian, but at the time of the interview she had taken "a much more passive role." One student, Samantha, recommended that parents take a balanced approach to monitoring student learning while also helping their students become more independent: "They should be there and be supportive and know what's going on, but at the same time give their kids their own space."

In addition to monitoring student behavior and performance, students explained that there were several things that parents did to motivate them to engage in learning activities. First, parents set high expectations for academic performance and communicated to students the importance of getting an education. Ellie stated, "[My parents] encourage me a lot to get good grades and try to be the best that I can be as far as school goes." These expectations were regularly communicated to students by parents' reactions to their academic performance. For instance, Angie recalled getting 91% on an assignment and her mother asking her, "Well, that's good but do you think you could redo it, maybe get it higher?" Kurt added that parents are especially good at setting expectations because they have an intimate knowledge of what students "can and can't handle."

Students also recognized their parents' high expectations when parents modeled to students the importance of education by maintaining academic interests/hobbies. Janice summarized that she tried to motivate her students by modeling that "learning is a great thing" and that "it was just part of [their] lives." Parents also modeled the importance of education by volunteering at school functions. However, volunteering appeared to be difficult for many parents due to other demands on their time. Anne stated, "I realize that there are a few opportunities where I could have [volunteered], but we have eight kids, and so I tend to volunteer my time in other areas, if you know what I mean." Similarly, Amy found that even though her mother wanted to attend school functions with her, she was too busy to actually do so. However, Amy added that "it was the thought that counted," and knowing that "[her mother] made the effort" had an effect on Amy similar to the effect her mother would have had if she had actually volunteered.

Parental praise and encouragement also appeared to be effective at motivating students. Christine found that parental praise was especially beneficial in courses that were difficult: "It's helpful to me to have [my mom] be like, 'Oh, good job!' because she knows how hard chemistry is for me." Angie also found that encouragement from her father helped her to finish assignments when she was feeling "worn out." Similarly, Hollie stated that she "would get into these moods" where she would want to give up on

projects, but encouragement from her mom helped her to persist to completion. Her mother, Leslie, confirmed that she "nudged [Hollie] a lot" so that she could meet her goals.

Parents also used rewards and punishments to incentivize student performance or engagement. Kurt remembered working harder after he was verbally reprimanded for his low performance and was told, "Look, if you don't do what you're supposed to do, there're going to be consequences." Parents and students stated that consequences typically were the removal of privileges, such as playing video games, watching television, or borrowing the family car. Parents also incentivized student performance with various rewards, including ice cream, candy, eating out, money, pool trips, sleepovers, parties, concert tickets, and electronics. Samantha explained that her mother created a token economy where she and her siblings would earn tokens that could be exchanged for money when they reached certain benchmarks. However, Samantha's mother, Anne, found that when Samantha became "old enough," she no longer required tokens to engage in learning activities and became a "self-motivated person." Similarly, Alice found that she did not have to incentivize her daughter to engage in learning activities, because she would reward herself by going outside or taking a break to read a book after she finished an assignment. Angie was actually happy that her parents did not incentivize her performance, because it "lessens the meaning of the project," and she "would only have done it just to get a prize." On the other end of the spectrum, Laura found that she was unable to motivate her son despite regular attempts. Ivan confirmed that it was "annoying" that his mother checked his grades daily and encouraged him to improve, but he admitted that "it helps a lot." Hollie explained that parents needed to find the right balance when attempting to motivate their students and that when "you have a good relationship [parents] know when to lay off, and they know when it's okay to push you to do better."

Instructing

Typically, when students had content-related questions, they "just asked [their] teachers because that's what they are there for." However, students turned to parents for tutoring or direct instruction of the course content, if their teachers were not immediately available (see Table 5). Ashley stated, "We were there when she needed help with certain assignments. We were just always here for her." Regardless of the reason, most students said that their parents tutored them on the course content at some point. Parents provided assistance in two ways. First, if parents did not already understand the content, they would learn it together with the student. Ruth provided an example of this more collaborative approach: "We will help him a lot in English, and we are reading together. I haven't read *How to Kill a Mockingbird*, so we are reading that out loud together." Ruth recalled an instance when her son was struggling with a social studies project and "was not understanding any of it." As a result, she thought to herself, "Let's work on this together." Another parent also engaged in shared learning activities by brainstorming a "research paper topic."

Second, when parents already understood the course content, they would provide their students with direct instruction. As a result, parents' ability to help their students was dependent on their understanding of the content, and in general parents were less able to assist their students in their math and science courses than in electives, language arts, and social studies. For instance, Leslie recalled that her son regularly asked her for help in math until she finally told him, "I don't have any clue what you're trying to do. … Contact your teacher." Hollie learned that she could turn to her father for help in English and her mother for help in math. In the social sciences and language arts, parents found that they could provide more assistance by reviewing or proofreading student work before it was submitted. Parents also used their previous knowledge to instruct their students on learning strategies, such as note-taking. It was less common for parents to help students with technology, but it did occur in some cases.

Table 5 *Coding Results for Instructing*

Indicators	Parents (*n*)	Students (*n*)	Examples
Instructing on the content	6	8	"She depended on [her dad] to help her with Math." (parent) "[My dad] is able to help me with some of the [English] concepts I struggle with." (student)
Instructing on learning skills	6	6	"I had to teach him how to take notes." (parent) "[My parents] always say to have a pen and paper by you to take notes to help study for quizzes and tests." (student)
Instructing on technology	2	3	"Actually this happened about twice, our internet goes down and she'll come and tell me about that." (parent) "When it is technology problems, at least on the computer, I usually turn to my teachers, but if it is like something that has to do with my iPod or my Kindle or my camera or something I'll usually go ask my dad." (student)

Although most students were appreciative of their parents' assistance, Ivan became frustrated when his mom would take him "though the steps" and wanted her to "just stop talking and give [him] the answer." Leslie shared one strategy that her son would use to get her to give him the answer: "He'll sit and just act like he has no clue…until you finally get so frustrated and irritated with him that you give him the answer." As a result, Leslie recalled finally saying to her son, "We're here to help. We're not here to do it for you." However, in one case, a student admitted that his parent went beyond providing assistance to actually doing the work for him. Matt explained that on some assignments, such as discussion board activities that he viewed as "pointless," his mother would "do it on her computer while [he was] doing something with more urgency."

Discussion

Litke (1998) grouped the types of support parents provide to students into one of three categories: absentee, supportive, or participatory. However, the data collected from this study indicated that parental engagement was more fluid and that parents traversed a *continuum of support* (Hasler Waters, Menchaca, & Borup, 2014). The parents offered varying degrees of assistance based on what they believed their students needed as well as the expectations they held for their students' academic achievement. By leveraging their intimate awareness of their students' needs, parents were strategic in how they helped their students structure their learning time and space. Consistent with students at this stage of development (Hawk, Keijsers, Hale, & Meeus, 2009; Smetana, Daddis, & Chuang, 2003), some students

pushed back, wanting more freedom to choose when and how they engaged in schoolwork. Some parents recognized the importance of encouraging their students to take ownership of their learning, and when possible gave them a level of control over their learning.

This research also identified types of parental engagement at a cyber charter high school. We discovered that the types of behaviors parents engaged in to support their students involved in this study are most accurately grouped in five categories: (1) nurturing relationships and interactions, (2) advising and mentoring, (3) organizing, (4) monitoring and motivating student engagement, and (5) instructing. We surmise that the categories of parental engagement behaviors found among the group of parents involved in this study are slightly different than those found in the earlier research, because the students involved in this study were high school students, not elementary or middle school students.

First, parents nurtured their own relationships with their students by building trust and supporting students' endeavors. While nurturing students is a natural phenomenon, the data collected from this study highlighted the significant role nurturing played as a driver of other forms of parental engagement. Similarly, parents in another study reported that they found the opportunity to nurture their students to be one of the most rewarding aspects of being their students' learning coach (Hasler Waters, 2012). Students also appeared to value the love and trust they found from their parents. This finding corroborates Borup et al.'s (2013) study in which students reported that they valued their parents' engagement more than parents realized. Similarly, one parent, Laura, reported that her son did not want her involved in his learning. However, her son, Ivan, admitted that his mothers' involvement was "annoying" but effective. In this study, parents also encouraged their students to build relationships with their teachers. For previously homeschooled students this was especially important, since they did not have teachers before attending MHA. This responsibility for students to establish a relationship with their teachers was not originally included in the ACE framework but supports teacher perceptions in the same setting (Borup, 2015).

Second, parents advised and mentored students by helping them make prudent decisions in order to set themselves up for future opportunities. Similarly, Curtis (2013) identified mentoring as a major type of parental engagement at a cyber high school and found that mentoring was an extension of how parents showed their love of their students. As a result, there appears to be a close relationship between parents' nurturing and advising activities. From the outset, parents chose to enroll their students in MHA based on what they believed would be the best learning environment for their students. Ni and Rorrer (2012) explained that the very act of enrolling students in a charter school is an indication that parents are proactively involved in their students' learning. As a result, parents' advising and mentoring activities may be different at non-charter-school programs.

Parents' mentoring and advising activities can also vary based on student characteristics. For instance, Beck and his colleagues (Beck, Egalite, & Maranto, 2014; Beck, Maranto, & Lo, 2013) found that parents of special education students were more likely than parents of general education students to enroll their students in a cyber school to avoid bullying and other social issues at their brick-and-mortar school. Parents of special education students were also more satisfied with their students' cyber school than were parents of general education students. In addition to advising students to enroll in online courses, de la Varre et al. (2014) observed that parents also advised their students to drop out of online programs when students' performance was low, when students were unable to fully engage in extracurricular activities, or when the course content "went against their family's values" (p. 10).

The third responsibility parents assumed was helping their students to organize their learning time and space. This was important in order to help their students stay on track and focused. Lowes and Lin (2015) stated, "As online learning has grown, it has become increasingly clear to many of us working in the field that students not only need to learn a subject online but need to learn how to learn online" (p. 18). Parents in our research also recognized this need and found that students were especially lacking in their ability to manage their time and space. Some parents tried to create multiple learning spaces and

flexible schedules in order to give their students choices. Some found that it was ineffective to set strict schedules, because some course work took longer than others, and students had other priorities to manage. Students also desired more independence, and some would ignore the schedule that parents provided. Household distractions proved challenging for some, and prioritizing family needs over schooling was problematic for some students. This may be especially surprising to students and parents, because one of the primary rationales that students and parents provide for enrolling in online courses is to escape the distractions (Garthwait, 2014; Muller, 2010; Sorensen, 2012).

Fourth, parents set expectations for student performance and then motivate students to meet those expectations. Motivating students required parents to monitor student behavior and performance. Monitoring student behavior is especially important within an online learning environment because the same technology that students use to access the course content can also be used to access limitless distractions (McFarlane, 2011). Some parents admitted that it was challenging to know exactly what their students were doing and relied on data collected from the LMS and communications from the teachers to stay abreast. Parents commonly used praise and words of encouragement to motivate student engagement. However, when students still failed to meet expectations, parents adjusted how they organized their students' learning time or used their intimate awareness of their students to incentivize them with either reinforcements or punishments. In most instances, students were grateful for the level of monitoring and motivating from their parents because they found it helped them stay on track. Yet not all students appreciated the amount of parental oversight they received, as they believed that it undermined their independence. Regardless, parents appeared to be largely successful at motivating students. Similarly, Hasler Waters (2012) observed that parents were constantly adapting their strategies to keep their students motivated, and they frequently leveraged external resources, from downloading online apps to enlisting the support of other family members, to keep their students engaged. It is difficult to overemphasize the importance of parents' monitoring and motivating efforts. Murphy and Rodríguez-Manzanares (2009) summarized that in order to be successful, many online students require the physical presence of someone who is "actively encouraging or pushing them" (p. 11).

Lastly, parents engaged in both direct and indirect instruction to support student learning. Findings from this research supported Liu et al. (2010), who suggested that parental involvement could in fact boost a child's ability to acquire and practice skills necessary to be successful in virtual learning environments—including perseverance, organization, internal locus of control, technology, and time management skills. When needed, students would also request their parents' instructional assistance on assignments. However, some of the data collected indicated that some parents might have done work for the students. Some teachers have complained about the troubling effects that may occur when parents actually do the work for their students or fail to communicate with teachers about the learning challenges their students experience (Borup, 2015; Hasler Waters & Leong, 2014). Parents relied on teachers to provide most of the direct instruction to their students and only intervened when the teacher was unavailable. Most often, parents worked to learn the content alongside their students. The students valued these shared learning experiences, as they helped students to build their confidence and were seen as motivational. Parents also helped their students to develop good study habits, such as taking notes. Where teachers tend to provide this type of guidance in the traditional classroom, parents' physical proximity to students made them especially effective at providing this type of support.

It is imperative that parents receive communication from the school to help them better understand the importance of their responsibilities and strategies to best engage in their students' learning (Boulton, 2008). Knowing that their parents and teachers worked together to support their learning was also reassuring to students. For the most part, parents valued teacher communications, but some parents were not always pleased with the level of teacher support they received. Challenges over sharing the teaching space and fully understanding the split of roles and responsibilities between parents and teachers in this type of environment are not new. Research has pointed to this theme for nearly two decades,

beginning with Litke's (1998) study of parental involvement in a cyber charter school and reoccurring throughout more recent studies (Boulton, 2008; Hasler Waters & Leong, 2014; Hawkins, 2011). The ACE Framework has identified areas of overlap between instructor and parent roles and suggested that students would benefit if these shared responsibilities were better coordinated (Borup et al., 2014). In the next section, we conclude with possible implications for researchers and practitioners who wish to better understand and facilitate effective parental engagement and collaborative relationships with teachers.

Conclusions and Implications

In this case study we conducted 10 interviews with 10 students and 19 interviews with 9 of their parents at MHA, a full-time online charter high school. Our analysis identified five primary types of parental engagement within this setting: (1) nurturing relationships and interactions, (2) advising and mentoring, (3) organizing, (4) monitoring and motivating student engagement, and (5) instructing. Prior to discussing possible implications of this research, we first need to understand its limitations. Although we were able to support parent perceptions with those of students, a major limitation of this research was the exclusive reliance on interview data. Greene, Caracelli, and Graham (1989) explained that the "use of only one method to assess a given phenomenon will inevitably yield biased and limited results" (p. 256). Furthermore, as is true with any case study, this research was highly contextualized, and practitioners and researchers should avoid "the temptation to read too far beyond the case itself in speculating about its meaning or implications" (p. 37). It is likely that research conducted in cyber schools with different learning models or younger students would produce different results.

Implications for Practice

In this research we found four primary obstacles to parental engagement at MHA: (1) time constraints, (2) conflict with their students, (3) ambiguity regarding their responsibilities, and (4) a perception that some forms of engagement were unwelcomed by teachers. Although there is little that schools can do to alleviate parents' external time constraints, they can help parents fulfill their responsibilities more efficiently. For instance, MHA teachers sent regular progress reports to parents individually to assist them in their monitoring responsibilities. Schools could make this process more efficient for parents if they sent them one weekly e-mail that contained student progress across all courses. Parents also found the activity reports provided by the LMS to be helpful, supporting Cavanaugh's (2009) previous suggestion that online programs provide parents with their students' analytic data. However, parents found that these activity reports were long, and to understand them was time consuming. Zhang and Almeroth (2010) advocated for teacher dashboards that would display trends in students' online activity and performance in ways that allow teachers to more quickly recognize and respond to student needs. Similar dashboards would also help parents to more effectively and efficiently fulfill their responsibilities.

Second, student–parent conflict proved to be an obstacle for some parents. Although it is not unusual for there to be conflict in the home when adolescents try to establish their independence from parents (Hawk, Keijsers, Hale, & Meeus, 2009; Smetana et al., 2003), this phenomenon has yet to be fully explored in full-time online settings. It is possible that student–parent conflict is more likely to occur in an online learning environment than in a brick-and-mortar setting because parents have more contact with their students and are required to assume some of the roles that are performed by classroom teachers. As a result, cyber schools should warn parents of possible student–parent conflict—especially when conflict already exists. Steinberg (2001) explained that researchers' understanding of parent–adolescent conflict has evolved over time. Traditionally, parent–adolescent conflict was viewed as inevitable, and parents were told to "expect oppositionalism and defiance from their teenagers and to worry if these factors were not present" (p. 3). However, there is an increasing body of evidence that conflict is not a natural byproduct of effective parenting. Similarly, we found that it was possible for most parents to fulfill their responsibilities with little or no evidence of parent–student conflict. As a result, online programs should

recognize the common triggers for excessive parent–student conflict and work with parents to develop strategies that prevent and resolve conflict when it occurs.

Third, some parents were somewhat unsure of their responsibilities and how to fully support their students' learning. One parent had the following realization at the start of the year: "Wow! [My student] needs much more help here than I ever thought." Parent misconceptions appeared to result in some parents' distracting students from their work and, in at least one case, actually doing the student's work for him. This is not a phenomenon unique to online learning (Cooper, 1989), but parents of online students have more opportunities to interfere with their students' learning than parents of students in a traditional brick-and-mortar environment. To MHA's credit, it worked to educate parents regarding their responsibilities at a face-to-face orientation meeting, but greater success may have been achieved if parents had also received recommendations and strategies throughout the year that focused on common challenges and misconceptions among parents.

Fourth, parental interference may have resulted in teachers wanting to keep parents at "arm's length," as expressed by one parent. Hasler Waters and Leong (2014) also found that online teachers were reluctant to share instructional responsibilities with parents even when it would have benefited the student. As a result, cyber schools may find that they need to better educate parents *and* teachers regarding the potential benefits of parental engagement as well as specific ways that parents should and should not engage in their students' learning.

Implications for Research

As stated earlier, researchers have largely ignored parental engagement at cyber high schools despite a consensus within the educational community that parental engagement can benefit students. Rice (2006) explained that part of the blame for the lack of research in K-12 online learning can be "placed on the doorstep of the research community for a lack of theoretical rational" (p. 440). Although Rice made the statement nearly a decade ago, the same holds true today. This is especially true with parental engagement, a variable that has proved difficult to define in online settings. For instance, Curtis's (2013) and Borup et al.'s (2014) parental engagement frameworks initially appear more different than they actually are because they use different terms to describe similar phenomena. One challenge to developing unified definitions is that researchers often fail to cite each other's research. This is due in part to the fact that K-12 online and blended learning research represents only a small portion of the total research published in the seemingly endless number of journals in the larger field of instructional design and technology. Additionally, much of the research on K-12 online and blended learning is published only as reports, white papers, and dissertations. The latter is an especially rich source of research that deserves more attention. Drysdale, Graham, Spring, and Halverson (2013) argued, "An understanding of trends in dissertation research can show what issues, theories, and methodologies young researchers and their faculty mentors are interested in" (p. 91). Thankfully, there have been recent attempts to highlight and distribute K-12 online and blended learning research, including this and other journals' special issues on the subject. The Michigan Virtual Learning Research Institute (MVLRI) and iNACOL led an effort to create a clearinghouse for all forms of K-12 online and blended learning research (http://k12onlineresearch.org/). Furthermore, in 2014 the *Handbook of Research on K-12 Online and Blended Learning* (Ferdig & Kennedy, 2014) was published, and in 2015 the first issue was published of the *Journal of Online Learning Research,* a journal devoted solely to issues pertaining to K-12 online learning. These and other efforts have the potential to create a stronger research community and result in more coordinated research efforts.

The ACE framework was selected to guide this research and proved helpful in identifying and defining types of parental engagement within this research context. However, our analysis extended beyond the ACE framework's original description of parental engagement. For instance, we expanded the ACE framework's concept of *nurturing* to also include parents' responsibilities to foster student–teacher

and parent–teacher communications. We also added the concept of *advising and mentoring*, which was not originally identified within the ACE framework. Whetten (1989) explained that when establishing a framework, researchers should "err in favor of including too many factors, recognizing that over time their ideas will be refined" (p. 490). Similarly, the authors of the ACE framework stated that the framework was not a comprehensive list of factors that influence student engagement, and they anticipated that qualitative research "could refine and/or expand" (Borup et al., 2014, p. 123) the framework. However, Merriam (1998) explained that case studies should not be viewed as a way of "testing" the hypotheses inherent within the framework.

Additional insights into parental engagement could also be obtained by conducting research in a variety of settings and by analyzing additional types of data, such as actual parent–teacher e-mail communications. Once researchers have identified and defined the various types of parental engagement, they can work to create and validate instruments to quantitatively measure parent engagement. These types of instruments would allow researchers to identify the types of parental engagement that are most strongly correlated with course outcomes. Although this type of research can be difficult—especially when collecting data from minors, it can prove insightful to those wishing to improve learning outcomes and reduce online attrition rates.

References

Barbour, M. K. (2013). The landscape of K-12 online learning: Examining what is known. In M. G. Moore (Ed.), *Handbook of distance education* (3rd ed., pp. 574–593). New York: Routledge.

Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, *13*(4), 544–559. doi:10.2174/1874434600802010058

Beck, D., Egalite, A., & Maranto, R. (2014). Why they choose and how it goes: Comparing special education and general education cyber student perceptions. *Computers & Education*, *76*, 70–79. doi:10.1016/j.compedu.2014.03.011

Beck, D. E., Maranto, R., & Lo, W.-J. (2013). Determinants of student and parent satisfaction at a cyber charter school. *The Journal of Educational Research*. doi:10.1080/00220671.2013.807494

Black, E. W. (2009). *An evaluation of familial involvements' influence on student achievement in K-12 virtual schooling* (Doctoral dissertation). University of Florida, Gainesville, FL. Retrieved from http://search.proquest.com/docview/304883948?accountid=4488

Borup, J. (2015). Teacher perceptions of parental engagement at a cyber school. In D. Slykhuis & G. Marks (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2015* (pp. 1463–1469). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).

Borup, J., Graham, C. R., & Davies, R. S. (2013). The nature of parental interactions in an online charter school. *American Journal of Distance Education*, *27*, 40–55. doi:10.1080/08923647.2013.754271

Borup, J., West, R. E., Graham, C. R., & Davies, R. S. (2014). The Adolescent Community of Engagement: A framework for research on adolescent online learning. *Journal of Technology and Teacher Education*, *22*(1), 107–129.

Boulton, H. (2008). Managing e-Learning: What are the real implications for schools? *The Electronic Journal of E-Learning*, *6*(1), 11–18.

Cavanaugh, C. (2009). *Getting students more learning time online*. *Distance education in support of expanded learning time in K-12 schools*. Washington, DC: Center for American Progress. Retrieved from https://www.americanprogress.org/wp-content/uploads/issues/2009/05/pdf/distancelearning.pdf

Cavanaugh, C., Barbour, M., Brown, R., Diamond, D., Lowes, S., Powell, A., … Van der Molen, J. (2009). *Research committee issues brief: Examining communication and interaction in online teaching*. Vienna, VA: iNACOL. Retrieved from http://www.inacol.org/wp-content/uploads/2015/02/iNACOL-ExamingCommunicationAndInteraction-2009.pdf

Cooper, H. (1989). Synthesis of research on homework. *Educational Leadership*, 85–91.

Curtis, H. (2013). *A mixed methods study investigating parental involvement and student success in high school online education* (Doctoral dissertation). Northwest Nazarene University, Nampa, ID.

de la Varre, C., Irvin, M. J., Jordan, A. W., Hannum, W. H., & Farmer, T. W. (2014). Reasons for student dropout in an online course in a rural K–12 setting. *Distance Education*, *35*(3), 324–344. doi:10.1080/01587919.2015.955259

Drysdale, J. S., Graham, C. R., Spring, K. J., & Halverson, L. R. (2013). An analysis of research trends in dissertations and theses studying blended learning. *The Internet and Higher Education*, *17*, 90–100. doi:10.1016/j.iheduc.2012.11.003

Ferdig, R. E., & Kennedy, K. (Eds.). (2014). *Handbook of research on K-12 online and blended learning*. Pittsburgh, PA: ETC Press. Retrieved from http://press.etc.cmu.edu/files/Handbook-Blended-Learning_Ferdig-Kennedy-etal_web.pdf

Freidhoff, J. R. (2015). *Michigan's K-12 virtual learning effectiveness report 2013-2014*. Lansing, MI: Michigan Virtual Learning Research Institute. Retrieved from http://media.mivu.org/institute/pdf/er_2014.pdf

Garthwait, A. (2014). Pilot program of online learning in three small high schools: Considerations of learning styles. *E-Learning*, *12*(4), 353–365.

Glaser, B. G. (1965). The constant comparative method of qualitative analysis. *Social Problems*, *12*(4), 436–445. Retrieved from http://www.jstor.org/stable/798843

Graham, C. R., Henrie, C. R., & Gibbons, A. S. (2014). Developing models and theory for blended learning research. In A. G. Picciano, C. D. Dziuban, & C. R. Graham (Eds.), *Blended learning: Research perspectives* (Vol. 2, pp. 13–33). New York, NY: Taylor & Francis.

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*(3), 255–274. doi:10.3102/01623737011003255

Hasler Waters, L. (2012). *Exploring the experiences of learning coaches in a cyber charter school: A qualitative case study*. Retrieved from Retrieved from http://search.proquest.com/docview/1347666490?accountid=4488.

Hasler Waters, L., Barbour, M. K., & Menchaca, D. M. P. (2014). The nature of online charter schools: Evolution and emerging concerns. *Educational Technology & Society, 17*(4), 379–389.

Hasler Waters, L., & Leong, P. (2014). Who is teaching? New roles for teachers and parents in cyber charter schools. *Journal of Technology and Teacher Education, 22*(1), 33–56.

Hasler Waters, L., Menchaca, M. P., & Borup, J. (2014). Parental involvement in K-12 online and blended learning. In R. E. Ferdig & K. Kennedy (Eds.), *Handbook of research on K-12 online and blended learning* (pp. 325–346). ETC Press.

Hawk, S. T., Keijsers, L., Hale, W. W., & Meeus, W. (2009). Mind your own business! Longitudinal relations between perceived privacy invasion and adolescent-parent conflict. *Journal of Family Psychology, 23*(4), 511–520. doi:10.1037/a0015426

Hawkins, A. (2011). *"We're definitely on our Own": Interaction and disconnection in a virtual high school* (Doctoral dissertation). Brigham Young University, Provo, UT.

Hoover-Dempsey, K. V., & Sandler, H. M. (1995). Parental involvement in children's education: Why does it make a difference? *Teachers College Record, 97*(2), 311–331.

Hoover-Dempsey, K. V., & Sandler, H. M. (2005). *Final performance report for OERI grant # R305T010673: The social context of parental involvement: A path to enhanced achievement*. Washington, D.C.

International Association for K-12 Online Learning (iNACOL). (2012). *Fast facts about online learning*. Vienna, VA: INACOL. Retrieved from http://www.inacol.org/press/docs/nacol_fast_facts.pdf

Klein, C. (2006). *Virtual charter schools and home schooling*. Youngstown, NY: Cambria Press.

Litke, D. (1998). Virtual schooling at the middle grades: A case study résumé. *The Journal of Distance Education, 13*(2), 33–50.

Liu, F., Black, E., Algina, J., Cavanaugh, C., & Dawson, K. (2010). The validation of one parental involvement measurement in virtual schooling. *Journal of Interactive Online Learning, 9*(2), 105–132.

Lowes, S., & Lin, P. (2015). Learning to learn online: Using locus of control to help students become successful online learners. *Journal of Online Learning Research, 1*(1), 17–48.

McFarlane, D. A. (2011). Are there differences in the organizational structure and pedagogical approach of virtual and brick-and-mortar schools? *Journal of Multidisciplinary Research, 3*(2), 83–98.

McNeal, R. B. (2012). Checking in or checking out? Investigating the parent involvement reactive hypothesis. *Journal of Educational Research, 105*(2), 79–89.

Merriam, S. B. (1998). *Qualitative research and case study applications in education: Revised and expanded from case study research in education*. San Francisco, CA: Jossey-Bass.

Miron, G., & Gulosino, C. (2015). Full-time virtual schools: Enrollment, student characteristics, and performance. In A. Molnar (Ed.), *Virtual schools in the U.S. 2015: Politics, performance, policy, and research evidence.* Boulder, CO: National Education Policy Center Retrieved from http://nepc.colorado.edu/publication/virtual-schools-annual-2015

MHA (Mountain Heights Academy). (2015). Mission statement. Retrieved from http://www.mountainheightsacademy.org/mission-statement/

Muller, E. (2010). *Virtual K-12 public school programs and students with disabilities: Issues and recommendations*. Alexandria, VA. Retrieved from http://projectforum.org/docs/VirtualK-12PublicSchoolProgramsandSwD-IssuesandRecommendations.pdf

Murphy, E., & Rodríguez-Manzanares, M. A. (2009). Teachers' perspectives on motivation in high school distance education. *Journal of Distance Education, 23*(3), 1–24.

Ni, Y., & Rorrer, A. K. (2012). Twice considered: Charter schools and student achievement in Utah. *Economics of Education Review, 31*(5), 835–849. doi:10.1016/j.econedurev.2012.06.003

Noel, A., Stark, P., Redford, J., & Zuckerberg, A. (2013). Parent and family involvement in education, from the National Household Education Surveys Program of 2012 (NCES 2013-028). *Education Statistics, Institute of Education.* Retrieved from http://nces.ed.gov/pubsearch

Rice, K. L. (2006). A comprehensive look at distance education in the K-12 context. *Journal of Research on Technology in Education, 38*(4), 425–449.

Russell, G. (2004). Virtual schools: A critical view. In C. Cavanaugh (Ed.), *Development and management of virtual schools: Issues and trends* (pp. 1–25). Hershey, PA: Information Science Publishing.

Shoaf, L. (2007). Perceived advantages and disadvantages of an online charter school. *American Journal of Distance Education, 21*(4), 185–198. doi:10.1080/08923640701595191

Smetana, J. G., Daddis, C., & Chuang, S. S. (2003). "Clean your room!": A longitudinal investigation of adolescent-parent conflict and conflict resolution in middle-class African American families. *Journal of Adolescent Research, 18*(6), 631–650. doi:10.1177/0743558403254781

Sorensen, C. (2012). Learning online at the K-12 level: A parent/guardian perspective. *International Journal of Instructional Media, 39*(4), 297–308.

Stake, R. E. (2010). *Qualitative research: Studying how things work*. New York, NY: Guilford Press.

Steinberg, L. (2001). We know some things: Parent–adolescent relationships in retrospect and prospect. *Journal of Research on Adolescence, 11*(1), 1–19. doi:10.1111/1532-7795.00001

Watson, J., Murin, A., Vashaw, L., Gemin, B., & Rapp, C. (2013). *Keeping pace with K-12 online & blended learning: An annual review of policy and practice*. Evergreen Education Group. Retrieved from http://kpk12.com/cms/wp-content/uploads/EEG_KP2013-lr.pdf

Whetten, D. A. (1989). What constitutes a theoretical contribution? *The Academy of Management Review*, *14*(4), 490–495. doi:10.2307/258554

Wolcott, H. F. (1994). *Transformative qualitative data: Description, analysis, and interpretation*. Thousand Oaks, CA: Sage Publications.

Zhang, H., & Almeroth, K. (2010). Moodog: Tracking student activity in online course management systems. *Journal of Interactive Learning Research, 21*(3), 407–429.

Copyright of Online Learning is the property of Online Learning Consortium and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Florida International University
FIU Digital Commons

FIU Electronic Theses and Dissertations | University Graduate School

5-11-2017

Teachers as Facilitators or Barriers of Parent Involvement: Experiences of African American Mothers of Children in Special Education Programs

Princess Briggs
Florida International University, princessb828@gmail.com

Follow this and additional works at: http://digitalcommons.fiu.edu/etd

Part of the Bilingual, Multilingual, and Multicultural Education Commons, Communication Commons, Disability and Equity in Education Commons, Special Education and Teaching Commons, Teacher Education and Professional Development Commons, and the Urban Studies and Planning Commons

Recommended Citation
Briggs, Princess, "Teachers as Facilitators or Barriers of Parent Involvement: Experiences of African American Mothers of Children in Special Education Programs" (2017). *FIU Electronic Theses and Dissertations*. 3486.
http://digitalcommons.fiu.edu/etd/3486

This work is brought to you for free and open access by the University Graduate School at FIU Digital Commons. It has been accepted for inclusion in FIU Electronic Theses and Dissertations by an authorized administrator of FIU Digital Commons. For more information, please contact dcc@fiu.edu.

FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

TEACHERS AS FACILITATORS OR BARRIERS OF PARENT INVOLVEMENT: EXPERIENCES OF AFRICAN AMERICAN MOTHERS OF CHILDREN IN SPECIAL EDUCATION PROGRAMS

A dissertation submitted in partial fulfillment of the

requirements for the degree of

DOCTOR OF EDUCATION

in

EXCEPTIONAL STUDENT EDUCATION

by

Princess Briggs

2017

To: Dean Michael R. Heithaus
College of Arts, Sciences and Education

This dissertation, written by Princess Briggs, and entitled Teachers as Facilitators or Barriers of Parent Involvement: Experiences of African American Mothers of Children in Special Education Programs, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

_____
Liana Gonzalez

_____
Tonette Rocco

_____
Joan Wynne

_____
Elizabeth Cramer, Major Professor

Date of Defense: May 11, 2017

The dissertation of Princess Briggs is approved.

_____
Dean Michael R. Heithaus
College of Arts, Sciences and Education

_____
Andrés G. Gil
Vice President for Research and Economic Development
and Dean of the University Graduate School

Florida International University, 2017

© Copyright 2017 by Princess Briggs

All rights reserved.

DEDICATION

I dedicate this dissertation to my brothers, Robert Briggs and Tydire Blanford, both of whom have shown the world that ability lies within disability. This dissertation is also dedicated to my son, Torrance Williams, who carries the torch of compassion for humanity into the next generation, reminding us that it is not differences, but the unwillingness to celebrate our differences that divides us.

ACKNOWLEDGMENTS

I would like to thank the Lord, Jesus Christ for working all things for my good. From the time that I was a small child, the flame of learning and teaching has burned deep within my soul. As I approach the finish line of my dissertation, I believe with all sincerity that every circumstance and happenstance was divinely orchestrated to guide me into my life's ministry of teaching parents, educators, and all people about children with special needs.

I would also like to extend my heartfelt appreciation to my dissertation chairperson, Dr. Elizabeth Cramer. There were many times throughout this journey that she pushed me past my points of comfort to greater levels of professional experiences and accomplishments. She has shown that she is dedicated to my current and future success.

Dr. Joan Wynne has been such an inspiration to me. She has challenged my beliefs and broadened my view of the world and the people in it. She believes in my strengths and provides me with opportunities that deepen me personally and professionally. For that I am truly grateful.

I am thankful for the other members of my committee, Dr. Liana Gonzalez and Dr. Tonette Rocco. Their support and guidance have helped me to organize and accurately articulate my thoughts in this arduous process. Likewise, Dr. Linda Bliss has been an invaluable asset throughout my program. I am appreciative of all the detailed feedback she has provided, as well as the personal support she has given to me.

This journey would not have been as life-changing, enriching, and enjoyable as it has been without the support of the Project E.D.U.C.A.T.E. cohort and other FIU colleagues. Having this support system contributed to my success in the program.

Words cannot express the gratitude I have for my mother who was the inspiration of this dissertation. Many days and nights we discussed her lived experiences as a parent of a child with a disability. She was candid about her past encounters with teachers and school administrators, and eager to hear about current policies and practices. We often exchanged roles of pupil and professor. I am most grateful for her unending belief in me and support of my endeavors.

Finally, I am grateful for my grandmother, godmother, uncle, son, sister-friend, pastor and other family and friends who were with me in this process. During those days that I was barely holding myself together, you all stood beside me and never left me alone. I will never forget.

ABSTRACT OF THE DISSERTATION

TEACHERS AS FACILITATORS OR BARRIERS OF PARENT INVOLVEMENT: EXPERIENCES OF AFRICAN AMERICAN MOTHERS OF CHILDREN IN SPECIAL EDUCATION PROGRAMS

by

Princess Briggs

Florida International University, 2017

Miami, Florida

Professor Elizabeth Cramer, Major Professor

Parents in disenfranchised groups, namely African American parents of children with special needs, are less likely to be involved in their child's education, although involvement is associated with positive educational outcomes. The purpose of this study was to investigate African American parents' perceptions of special education programs, of teacher actions, and of school policies that influence parent involvement of African American parents of children with special needs.

A phenomenological study was conducted with 15 African American mothers of children with special needs. These parents participated in individual face-to-face interviews, which included a discussion of the child's Individualized Education Plan. Audio recordings from the interviews were transcribed and data from the transcriptions were thoroughly analyzed.

The findings were categorized into four overall themes. In theme one, Perceptions of Parent Involvement, it was found that these mothers perceived themselves as being involved in their children's education. In theme two, Facilitators of Parent Involvement,

it was found that parents were more compelled to be involved in their children's education when educators communicated effectively, valued parent input, and exhibited love and positive attitudes towards parents and children. Findings showed that the absence of these traits were Barriers of Parent Involvement, which was theme three. In the last theme, Recommendations to Teachers and School Administrators to Increase Parent Involvement, study participants shared several recommendations to increase parent involvement.

My study concluded that professionals in the field should broaden their definition of parent involvement to include home-based activities of African American parents of children with special needs, such as engaging their children in home learning activities to teach them independence. Moreover, parents felt more compelled to visit the school and engage in other parent involvement activities, like attending school meetings, for example, when they perceived that school personnel valued parents' contributions. These parents' views were similar to insights gathered from African American parents in previous research. However, views that emerged from this current research that are different from previous studies include parents' recommendations that school personnel communicate with parents using the parents' preferred method, and that teachers and school staff exhibit love and positive attitudes towards parents and children.

TABLE OF CONTENTS

CHAPTER PAGE

I. INTRODUCTION 1
- Parent Involvement Defined 4
- Problem 8
- Purpose Statement and Research Questions 11
- Conceptual Framework 12
- Significance of the Study 13
- Definition of Terms 13
- Chapter Summary 15

II. REVIEW OF THE LITERATURE 17
- Definitions and Dimensions of Parent Involvement 18
- The Importance of Parent Involvement 26
- Lack of Parent Involvement in Urban Education 27
- Lack of Parent Involvement in Urban Special Education 28
- Factors that Increase Parent Involvement in Special Education 29
- Chapter Summary 41

III. METHODS 43
- Research Questions 43
- Research Design 44
  - Participants 46
  - Data Collection 50
  - Interviews 51
  - Data Analysis 53
- Identity of the Researcher 55
- Chapter Summary 56

IV. RESULTS 58
- Perceptions of Parent Involvement 59
- Facilitators of Parent Involvement 68
- Barriers to Parent Involvement 96
- Recommendations to Teachers and School Administrators to Increase Parent Involvement 106
- Chapter Summary 109

V. OVERVIEW, RECOMMENDATIONS, CONCLUSION 110
- Broader Perspectives of Parent Involvement 111
- Facilitators and Barriers to Parent Involvement 118
- Parents' Recommendations to Increase Parent Involvement 124
- Limitations 125
- Implications for Current Practice 125

Recommendations for Future Research 127
Chapter Summary 127

REFERENCES 129

APPENDIX 137

VITA 140

CHAPTER I

INTRODUCTION

In 2001, the No Child Left Behind Act, which has been reauthorized and now renamed the Every Student Succeeds Act (ESSA), mandated that states, districts, and schools implement programs, activities, and procedures to involve parents in their child's education. The intent of the law required not only that these programs, activities, and procedures be available to parents, but also that parents be involved at the development and decision-making levels. With respect to children with disabilities, a fundamental tenet of the 2004 reauthorization of the Individuals with Disabilities Education Act (IDEA) is the involvement of parents at multiple levels and in multiple areas of the child's education (IDEA, 2004), including evaluation, educational placement, and educational planning.

The IDEA also stipulates that parents are equal members of their child's Individualized Education Program (IEP; IDEA, 2004). The IEP is a document that is developed annually during the IEP team meeting where members of the team, including the parents, discuss and plan the services that will be provided for the child (Florida Department of Education, 2012). The IEP acts as "the primary vehicle for communicating the school district's commitment to addressing the unique educational needs of a student with a disability" (Beech, 2012, p. 9). Parents are key members of the IEP team. With extensive knowledge of their child's strengths, needs, interests and unique abilities, and having the opportunity to provide suggestions for how the child can be best educated, it is imperative that parents are involved (U.S. Department of Education, n.d.).

Effective parent involvement programs yield a number of positive outcomes. When parents are actively engaged in their child's education, children experience higher grade point averages (Anderson & Minke, 2007), increased reading, writing, and math achievement (Ferrara & Ferrara, 2005; Pena, 2000), greater achievement on standardized tests (Jeynes, 2003) and higher graduation rates (Ferrara & Ferrara, 2005). Research supports lower incidence of grade retentions (Anderson & Minke, 2007; Ferrara & Ferrara, 2005) and dropping out (Anderson & Minke, 2007), and lower rates of special education placement (Anderson & Minke, 2007) when parents are involved. Behaviorally, children of involved parents have greater attendance rates (Ferrara & Ferrara, 2005), and are able to regulate their behavior and display age-appropriate social skills (Bower & Griffin, 2011).

Although the law requires that states, districts, and schools develop programs and policies to include parents as active members of their child's education, and although the law provides specific guidelines with respect to parents of students with special needs, not all children and families experience the theoretical benefits of parent involvement. There is an abundance of literature that reports a lack of parent involvement for some families (Ferrara & Ferrara, 2005; Jeynes, 2003; McDermott & Rothenberg, 2000; Spann, Kohler, & Soenksen, 2003). Parents have shared a number of factors that dissuaded them from being more involved in their child's education. Some parents reported feeling alienated or disconnected from their child's classroom and school (McDermott & Rothenberg, 2000; Pena, 2000), linguistically diverse parents cited language barriers as a deterrent to their involvement (Durand, 2011; Pena, 2000), and parents in some cultural

minority groups, specifically African American parents, reported that feelings of disrespect kept them away from their child's school (Williams, 2007).

With regard to African American parents specifically, there are a number of barriers that impede parent involvement. Many parents indicate that their limited resources hinder their involvement in their child's education (Cousins & Mickelson, 2011; Williams & Sanchez, 2011). For example, as a result of work and day-to-day family obligations, many parents lack the necessary time to dedicate to their children's school matters (Cousins & Mickelson, 2011; Williams & Sanchez, 2011). In addition to limited time, some parents assert that lack of access (e.g., scheduling conflicts), lack of financial resources, and lack of awareness (i.e., unaware of school policies or misinformed about school events) are deterrents in their school involvement activities (Williams & Sanchez, 2011).

African American parents have also identified racial and cultural impediments that have led to their limited involvement. According to Brandon (2007), when interacting with educators, African American parents feel out of place, experience real and perceived discrimination, including overt racism from school staff (Cousins & Mickelson, 2011), and experience a sense of estrangement. Some parents do not feel invited or welcomed in the school, and they feel as though their voices are not being heard (Cousins & Mickelson, 2011). When educators do not respect cultural differences (Kalyanpur, & Harry, 2012) and differences in parenting styles, they alienate African American parents (Cousins & Mickelson, 2011; Thompson, 2003) and weaken the connection between the parents and the school (Brandon, 2007).

African American parents of children with disabilities report similar experiences with regard to parent involvement. However, they also express the belief that school and district policies prevent them from being involved in their children's education (Brandon, Higgins, Pierce, Tandy, & Sileo, 2010; McDermott & Rothenberg, 2000; Williams, 2007). School officials, in regards to African American parents of children with disabilities, are culturally disconnected (Kalyanpur & Harry, 2004).

When considered collectively, laws mandating that schools, districts, and states, in collaboration with parents, develop comprehensive parent involvement programs (i.e., ESSA), legislative action outlining specific requirements to ensure the involvement of parents of children with disabilities at various levels of educational decision-making (i.e., IDEA), and evidence supporting positive outcomes for children whose parents participate in their education, it can be inferred that parent involvement of children with disabilities is essential for positive student outcomes. The importance of parent involvement for positive outcomes of students with disabilities is also supported in the research literature (Spann, Kohler, & Soenksen, 2003), though not as strongly supported as research supporting parent involvement of parents of the dominant culture (White middle class) whose children are educated in general education programs.

Parent Involvement Defined

Scholars agree that parent involvement is a significant factor in the educational development of children. Children benefit from greater academic achievement when teachers and parents work together. However, when asked to provide a definition of the concept of parent involvement, federal law, scholars, teachers, and parents have conceptually different ideas.

Legislation

Section 1118, Parental Involvement, of the Every Student Succeeds Act – Subsection (d), entitled Shared Responsibilities for High Student Academic Achievement, specifies that, as part of the school-level parental involvement policy, each school, in conjunction with parents, must develop a "school-parent compact that outlines how parents, the entire school staff, and students will share the responsibility for improved student academic achievement and the means by which the school and parents will build and develop a partnership to help children achieve the State's high standards" (U.S. Department of Education: Part A, n.d.). More specifically, the law states that this compact must describe "the ways in which each parent will be responsible for supporting their child's learning."

The examples of said responsibilities provided in the verbiage of this law include parent involvement at home by monitoring attendance, homework, and the amount of time children spend watching television. Some examples of in-school parent involvement activities outlined in this law include volunteering in the child's classroom and participating in decisions relating to the child's education. On-going communication between teachers and parents must also be addressed. At minimum, according to the law, the school must hold parent-teacher conferences annually to discuss parent involvement initiatives, provide frequent reports to parents about their child's progress, and to ensure that the parents have reasonable access to staff, be provided opportunities to volunteer and have opportunities to observe classroom activities (U.S. Department of Education: Part A, n.d.).

Research Literature

In the research literature, scholars have traditionally defined parental involvement as "either supporting student academic achievement or participating in school-initiated functions" (Bower & Griffin, 2011, p. 78). The school-centered definition mirrors the definitions created by policymakers. More recent research on parent involvement has included the work of theorists in the field, including Eccles and Harold (in Anderson & Minke, 2007), Epstein (in Cousins & Mickelson, 2011), and Hoover-Dempsey and Sandler (in Williams & Sanchez, 2012). Although these theorists differ in the specific components of their models, they share two notions – that parent involvement is a multi-faceted phenomenon that must be viewed from several perspectives, and that differences in cultural beliefs and attitudes have an effect on the ways parents are involved in their child's education (Anderson & Minke; Cousins & Mickelson; Williams & Sanchez).

Educators

Just as researchers have developed a parent involvement framework (Banerjee et al., 2011; Bower & Griffin, 2011), so have school administrators and teachers. School personnel judge parents as either involved or not involved on the basis of the parent's presence in the school (Anderson & Minke, 2007; Bower & Griffin, 2011). Educators regard parents as being involved in their child's academic development when they observe parents being engaged in in-class activities, such as volunteering, donating supplies, and purchasing snacks. In-school activities, attending school meetings or events, or participating in school groups or on educational boards for example, may also constitute involvement when considered from the perspective of teachers. However, the unidirectional concept (i.e., direct parent to school support) negates the types of

involvement exhibited by non-dominant cultural groups (Durand, 2011; Williams & Sanchez, 2012).

Parents

Parents of the dominant culture in America, that is White European descendants, embrace the traditional definitions of parent involvement as outlined in the legislation and by researchers and educators in the field (Bower & Griffin, 2011). In contrast, parents of non-dominant cultures (e.g., Hispanics and African Americans) place an emphasis on community and family when practicing parent involvement. Specifically, these parents focus on those actions and behaviors that help with keeping the child in school (Anderson & Minke, 2007; Durand, 2011). Some examples of these activities may include nurturing the child, instilling cultural values such as *familismo*, or family cohesiveness and interdependence (also see Durand, 2011), and talking with the child (Bower & Griffin, 2011). Essentially, parents of minority cultures consider themselves to be actively involved in their child's education by making sure that the child arrives at school physically and mentally prepared to learn (Durand, 2011).

African American Parents

African American parents consider in-school and at-home activities as relevant parent involvement efforts (Cousins & Mickelson, 2011; Williams & Sanchez, 2012). In addition to traditional in-school activities, such as attending school meetings and volunteering (Tyson & Hill, 2009), these parents are also actively involved in their child's education outside the school walls (Cousins & Mickelson, 2011; Williams & Sanchez, 2012). African American parents ensure that their children's basic needs are met and they assist with homework activities (Banerjee, Harrell, & Johnson, 2011). In

addition to these activities, African American parents also engage children in family activities and teach their children life lessons, which are considered essential to their children's educational growth (Williams & Sanchez, 2012).

Problem

Research strongly supports the view that parent involvement increases student outcomes (Anderson & Minke, 2007; Bailey, Silvern, Bradham, & Ross, 2004; Banerjee et al., 2011; Jeynes, 2003), and to promote parent involvement for all learners, the law mandates collaborative efforts between schools and parents. There remains, however, a large segment of parents for whom these laws have had little positive influence. Families that are marginalized on the basis of their race, culture, and/or language, and those that are economically disadvantaged experience the lowest rates of parent involvement (Durand, 2011; McDermott & Rothenberg, 2000; Pena, 2000). Of these minority groups, African Americans have the lowest rates of participation (McDermott & Rothenberg; Williams, 2007).

African American parents, primarily, report feeling alienated from their child's school (Williams, 2007; Williams & Sanchez, 2012). These parents perceive that the public education system is designed for the benefit of the majority culture with little regard for its negative impact on others (McDermott & Rothenberg, 2000). African American families of children with disabilities report deeper feelings of disconnectedness. For example, aside from feeling mistreated and ignored at IEP meetings, parents feel that referral and evaluation procedures are not appropriate (Williams, 2007); they feel that school officials are culturally disconnected from minority children (Kalyanpur & Harry, 2004). With a lack of trust and connectedness with the

school, African American parents of children with disabilities are the least likely to be involved with their child's school, as compared to parents of other cultural groups.

Researchers have investigated the relationship between parents and classroom teachers to identify specific teacher characteristics and/or actions that encourage parent involvement in the African American community; unfortunately, only small numbers of African American parents were asked to participate in these studies. For example, Lewis, Kim, and Bey (2011) conducted a qualitative study of an inner-city school located in a northeastern city of the United States. The researchers interviewed classroom teachers and the school principal about their school's practices that promote parent involvement. Parents were not asked to participate in the study. Another study was conducted to investigate the effectiveness of the implementation of strategies outlined in the Epstein Model of parent involvement (Bower & Griffin, 2011). Again, teachers and school administrators participated in the study; no parents were selected to participate in the study.

There are few empirical studies, however, that do include the voices of African American families. Anderson and Minke (2007) conducted a study to investigate parent involvement in an urban district. Approximately half of the parents in their study were African American. Similarly, McDermott and Rothenberg (2000) conducted a study of urban parents' level of school involvement. Three of the six mothers who participated in the study were African American.

Studies investigating parent involvement in the African American community rarely include the voices of African American parents. When adding another dimension, specifically special education, parents' voices are nearly non-existent (Davis, Brown,

Bantz, & Manno, 2005). However, Harry (2008) places Latino and African American parent voices at the forefront in her article about parent-teacher collaboration in the special education setting. Likewise, Williams (2007) included the rich, thick descriptions from the African American participants in her study as they discussed their discontent with their children's special education programs.

Even when considering the cultural norms of non-dominant cultures, parent involvement of African American families is the lowest amongst marginalized cultural groups (Davis et al., 2005). With student academic achievement at the forefront of stakeholders' goals, it would be advantageous for lawmakers, administrators, teachers, and parents to operate from an understanding that the concept of parent involvement varies among different cultural groups (Pena, 2000; Williams & Sanchez, 2012). Because African Americans are less likely to be involved than other racial/ethnic groups (McDermott & Rothenberg, 2000; Williams, 2007), it is critically important for administrators and teachers to recognize the various reasons that these parents are involved and are not involved in their child's education.

As it is currently written, ESSA does not address or recognize cultural differences and how these differences impact the levels and types of involvement parents engage in with respect to their child's education (U.S. Department of Education: Part A, n.d.). Authors of scholarly works also build their concepts of parent involvement from a school-centered definition or description (Anderson & Minke, 2007; Bower & Griffin, 2011). Educators focus their parent involvement efforts and programs on school-level activities and ideas (Durand, 2011). And parents, especially those groups who have not been traditionally disenfranchised, have adopted the school-centered, school-generated

concept of what it means to be involved in their child's education (Bower & Griffin, 2011). Regrettably, these traditional definitions of parent involvement, developed and sustained by those in power in the United States, fail to recognize or support sources of social capital that disenfranchised cultural groups rely on when supporting their children educationally (Diamond, Wang, & Gomez, 2006; Trainor, 2008).

In light of research conducted with minority families of children with special needs, the literature supports the understanding that there are teacher qualities and actions that promote parent involvement (Durand, 2011; Kalyanpur & Harry, 2004), and teacher qualities and actions that discourage parent involvement (McDermott & Rothenberg, 2000; Williams, 2007). Parents in this disenfranchised group have reported that, in addition to limited personal resources and a lack of teachers and school staff who are culturally competent, school policies designed and developed by the dominant culture further marginalizes families whose children are African American and in special education programs (Cousins & Mickelson, 2011; McDermott & Rothenberg, 2000; Williams & Sanchez, 2011). Because the concept of parent involvement is subjective and influenced by culture (Bower & Griffin, 2011), and because special education adds another dimension to what it means to be *involved* (Harry, 2008), the parents in the present study had the opportunity to explain their understanding of this concept.

Purpose Statement and Research Questions

The purpose of my study was to investigate African American parents' perceptions of special education programs, of teacher actions, and of school policies that influence parent involvement of African American parents of children with special needs. The research questions were as follows:

From the point of view of the African American parents of children with disabilities:

1. How do African American parents of children with disabilities perceive their involvement in their child's special education program?
2. How do African American parents of children with disabilities perceive their involvement with their child's classroom teacher?
3. How do African American parents of children with disabilities perceive their involvement in their child's school?

Conceptual Framework

Epstein's Model of Parent Involvement (Epstein, 2009) considers school, family, and community elements and includes six components of school-based and family-based factors: (a) parenting, (b) communication, (c) involvement at school, (d) learning at home, (e) decision-making, and (f) collaborating with the community. In addition to helping children succeed in school, family, school, and community partnerships improve school programming and climate, provide services and supports to families, including parenting skills, and connect the families to others in the school and in the community (Epstein, 2009). When the school, the family, and the community interact effectively, the child is more likely to receive common messages about the importance of attending school and being a member of the community (Epstein, 2009).

The interaction between the parent and the teacher or school is significant in the parent involvement framework. Researchers investigating parent involvement in the African American community reported that parents indicated that the attitudes and actions of teachers and school personnel largely influenced whether they were involved

or not involved, and to what extent they became involved (Anderson & Minke, 2007; McDermott & Rothenberg, 2000; Pena, 2005, Williams & Sanchez, 2012). My dissertation study will use Epstein's parent involvement framework as a foundation to investigate parents' perceptions of the interactions between themselves and their child's teacher, and to what extent this interaction increases or decreases their level of involvement.

Significance of the Study

The study adds to the literature by providing explicit descriptions of parent perceptions of their own educational involvement, teacher practices that promote or inhibit that involvement, and school policies that dictate involvement activities as perceived by African American parents of students with disabilities. As this segment of the population is often missing from literature that provides best practices to promote parent/teacher interactions, the study provides insight for practices that teachers should and should not employ when interacting with African American parents of children with disabilities.

Definition of Terms

The following section provides definitions of terms referred to throughout this study. These include terms and acronyms used universally in the field of special education.

African American:

African American individuals are those of African descent living in the United States, excluding individuals of Caribbean descent.

Culturally and Linguistically Diverse (CLD) Learners:

CLD students are those whose cultural and linguistic background is different from mainstream American culture.

Individualized Education Program (IEP):

"The term 'individualized education program' means a written statement for each handicapped child developed in any meeting by a representative of the local educational agency or an intermediate educational unit who shall be qualified to provide, or supervise the provision of, specially designed instruction to meet the unique needs of handicapped children, the teacher, the parents or guardian" (IDEA-B, 2004).

Parent:

A natural or adoptive parent of a child, a guardian, an individual acting in the place of a natural or adoptive parent (including a grandparent, stepparent, or other relative) with whom the child lives, or an individual who is legally responsible for the child's welfare, (IDEA, 2004).

Parent Involvement:

Adopted from the Epstein Model, any activity that establishes a home environment that supports children as students, communicating with teachers and schools, volunteering at school, helping children learn at home, participating in decision-making at the school, and collaborating with the community (Lewis, Kim, and Bey, 2011).

Special Education:

Special education is instruction that is specially designed to meet the unique needs of a child with a disability. *Specially designed instruction* means adapting the content,

methodology, or delivery of instruction to address the unique needs of the child that result from his or her disability, and to ensure the child's access to the general education curriculum so that he or she can meet the educational standards that apply to all children within the jurisdiction of the school system (Center for Parent Information and Resources, n.d.).

Student with Disabilities:

Child with a disability means a child evaluated as having mental retardation, a hearing impairment (including deafness), a speech or language impairment, a visual impairment (including blindness), a serious emotional disturbance, an orthopedic impairment, autism, traumatic brain injury, other health impairment, a specific learning disability, deaf-blindness, or multiple disabilities, and who, by reason thereof, needs special education and related services (IDEA, 2004).

Chapter Summary

Currently, there is a scant amount of research dedicated to providing a platform from which African American parents of children with disabilities have voiced their experiences with and perceptions of parent involvement (Davis et al., 2005). Because parent involvement is an essential element in the academic growth of students, and because African American parents are the least likely to be involved, lack of parent involvement may be a contributing factor in the achievement gap between African American students and their White counterparts. Additionally, laws and mandates, such as ESSA, have been developed to ensure that schools are engaging parents in various capacities (Epstein, 2005). Unfortunately, not all parents are being supported in their efforts to be involved in their child's education, specifically African American parents of

children with disabilities. This current study has been developed to engage these parents in dialogue about what parent involvement means to them, about their own level of involvement, and about what their child's teacher or school does to enhance or discourage their desire to be involved.

Chapter 2 contains a review of the literature pertaining to parent involvement. It starts with providing various definitions and dimensions of parent involvement. It considers traditional and non-traditional perspectives. The chapter moves on to discuss the importance of parent involvement and how it impacts the child's academic and social-emotional development. Next, the chapter highlights research studies pertaining to the lack of parent involvement in urban education and in urban special education. The chapter ends with a discussion of dissertation studies that were conducted with African American parents of children with special needs.

CHAPTER II

REVIEW OF THE LITERATURE

The review of the literature has been organized in two parts. Part one provides a general overview of research that explores parent involvement. Part two includes specific aspects of various studies that highlight parents' voices as they articulate their understandings of parent involvement.

The first section of part one explores various aspects of parent involvement from several perspectives, that is the perspectives of researchers, teachers and administrators, and parents. It includes a discussion of the various definitions and views from traditional or mainstream societies to culturally and linguistically diverse communities. The next section of the literature review discusses the importance of parent involvement. That is, it looks at the positive outcomes for both the student and the parent. The two sections that follow explore the lack of parent involvement in urban education and, more specifically, in urban special education. These sections discuss the decline of parent involvement amongst Hispanic and African American populations and explore factors that may contribute to these trends. A discussion of the factors that increase parent involvement in special education follows these two sections.

Part two of the literature review outlines specific studies that explore factors that enhance parent involvement. It then follows with a discussion about the limited research dedicated to highlighting parents' voices as they share their experiences with teachers and school administrators, experiences that either increase or decrease their level of involvement.

Definitions and Dimensions of Parent Involvement

One of the principles of the Every Student Succeeds Act (ESSA) requires that school districts receiving federal Title I funding ensure that parents are involved in their child's education in ways that will increase students' academic achievement (Jacobi, Wittreich, & Hogue, 2003). As Epstein (2005) outlines, there are four principles driving this law. First, ESSA requires that multiple entities, including states, districts, and schools, work together to implement parent involvement and partnership policies. Second, parent involvement policies must be linked to school improvement and management; that is, linking curriculum, instruction, and assessment to student achievement. The law also requires that schools and families share information and decision-making for student learning and communicate at the home, school, and community levels. Lastly, ESSA requires that all families, not just those who are already involved or most accessible, be included in parent involvement programs. In essence, the Act mandates that local education agencies (LEA) and schools consult with parents to adopt policies that will build the capacity for parent involvement (Jacobi et al., 2003). The LEA must provide a written document that outlines their intent to help parents understand that they and their child's educators are equal partners in the child's academic achievement (Elias & Schwab, 2004; Jacobi et al., 2003).

Although the federal government seems to have a comprehensive outline for how parent involvement is defined, and explicit requirements for how states and education agencies must support parents in their understanding of parent involvement, there has been little consensus with how researchers, practitioners, and parents define the term (Anderson & Minke, 2007; Feuerstein, 2000; Lewis, Kim, & Bey, 2011). Perhaps the

variation in meaning stems from a vast difference in the cultures of children being educated in American classrooms (Ford, 2012). For example, when defining parent involvement, it must be understood that there are cultural differences in the concept of *parent*. In European American households, parents are typically viewed as a child's biological mother and father; however, in African American and Hispanic American households, parenting is conceptualized differently to include grandparents, aunts, uncles, and partners (Banerjee, Harrell, & Johnson, 2011; Durand, 2011; Lopez, Scribner, & Mahitivanichch, 2001; Williams, Sanchez, & Hunnell, 2011).

Joyce Epstein, a noted researcher and theorist in the field of parent involvement in education, defines parent involvement in terms of six components or types (Bower & Griffin, 2011; Epstein & Van Voorhis, 2010; Lee & Bowen, 2006; Lewis et al., 2011). Type 1, Participating in Parenting, is defined as a supportive home environment; Type 2, Communicating with Teachers and schools, is defined as having effective home-school and school-home communication; Type 3, Volunteering at School, is defined as parents' providing help and support at school; Type 4, Helping Children Learn at Home, is defined as parents helping children with homework and other curriculum-based activities; Type 5, Participating in Decision-Making at School, is defined as parents being involved with decisions through the leadership roles in the school; and Type 6, Collaborating with the Community, is defined as parents' connections with community resources and services (Lewis et al., 2011). In reviewing research that did not explicitly refer to Epstein's six-trait theory, quantitative and qualitative researchers alike used scales, surveys, and open-ended questions that resembled a number of Epstein's six traits (Feuerstein, 2000; Pena, 2000).

Other researchers in the field have recognized that the concept of a parent being involved in his/her child's education cannot be summed up in any number of predetermined traits or characteristics. They have acknowledged that the ever-evolving American family unit and its nuances must be perceived in a way that recognizes and gives credence to non-mainstream cultures and lifestyles as well. To this end, Williams, Sanchez, and Hunnell (2011), in their work with African American parents, use the construct *school-family partnership* instead of parental involvement to define how "people, roles, organizations, and events are interrelated" (p. 689). They explain that the term parental involvement is misleading because it does not acknowledge the interaction between the parents, the school personnel and the school system (Williams et al., 2011), all of which are imperative to student achievement.

In their qualitative research with migrant families from Texas, Lopez and his colleagues (2001) introduced the idea of *home involvement*. Rather than aiming to get parents into the schools to participate in parent involvement activities, the school personnel at one of the schools in their study were proactive in reaching out to the parents and families of their students. *Home involvement* required school staff to visit the homes and communities where their students were being raised. The school staff saw themselves as being committed to the students and families that they serve, rather than being committed to a predetermined set of tasks or roles. Once the teachers and school staff learned about the uniqueness of the families, the educators were able to share valuable information about community resources available to them. As the families began to utilize these community resources to get their basic needs met, they were able to focus more on their children's education rather than on their personal day-to-day challenges.

Parents and families were then more receptive to contributing to the academic success of their children, school, and community (Lopez, Scribner, & Mahitivanichch, 2001).

Just as researchers differ in the definitions and theories that they use to discuss the concept of parent involvement, practitioners and parents view involvement differently as well. Parents of non-mainstream groups "take a more community-centric view that includes keeping their children safe and getting them to school, whereas teachers define involvement primarily as parental presence at school" (Anderson & Minke, 2007, p. 311). That is, parents concern themselves with whatever is necessary to keep their child in school, while teachers are interested in seeing parents present at the school. With these distinct differences in how parent involvement is determined, teachers who are not sensitive to cultural differences and parents who are not aware of teacher expectations may find it difficult to work together to meet the needs of the child (Anderson & Minke; Pena, 2000).

Beyond the differences that exist between parents and practitioners when defining parent involvement, there are also differences in the ways various cultures become involved in their children's education. In the United States, the dominant culture (i.e., European-American) considers that a parent is involved in his/her child's education when the parent participates in school-related activities and is visibly present in the classroom (Anderson & Minke, 2007; Lewis, Kim, & Bey, 2011). The parent's role, according to White middle-class standards, includes activities such as volunteering in the classroom or school, attending school meetings (often held during school hours), sitting on advisory boards, and being involved in school decision-making proceedings. These activities necessitate a pool of resources that may not be accessible to all families (Anderson &

Minke, 2007; Banerjee, Harrell, & Johnson, 2011; Lewis, Kim, & Bey, 2011), specifically parents from Hispanic American, Chinese-American, and African American communities.

A clear distinction of parent involvement expectations is evident between migrant families and school personnel (Lopez, Scribner, & Mahitivanichcha, 2001). Schools define parental involvement in terms of supporting student academic achievement or participation in formal school-initiated functions. However, parents in migrant communities define parent involvement in terms of informal activities such as providing nurturance, instilling cultural values, talking to their children, sending their children to school clean and rested, checking homework, and a variety of other activities. In the Lopez et al. study, when parents did not contribute in ways that teachers and school administrators saw as meaningful, it was assumed that these parents lacked the adequate educational environment for their children. This assumption contributed to deficit thinking by the school personnel.

Teachers and school officials are often uncertain about how to involve parents in meaningful ways; therefore, they are lax in encouraging parents to become involved (Lopez et al., 2001). Class and racial stereotypes hinder school officials from treating migrant parents as partners, decreasing the likelihood for respectful and genuine connections between parents and school personnel. In turn, parents refrain from voicing their opinions or concerns; they become frustrated when schools negate their cultural values and beliefs and when schools create barriers that impede their involvement efforts. Lopez et al. concluded that school personnel often perceive parents' actions (or inactions) as evidence of a lack of resources, knowledge, and skills, which are necessary, in the

school's opinion, to provide a meaningful educational environment for their child. These beliefs further alienate parents and personify the deficit mentality.

Similar sentiments were shared by Latina mothers when asked about their parent involvement practices (Durand, 2011). According to these Hispanic women, family decisions and practices follow the three standards of *familismo, respeto,* and *educacion*. *Familismo*, or reliance on family members, refers to instilling the value of family closeness, cohesion, and interdependence. Intergenerational and extended kin are primary sources of support, where the commitment to the family over individual needs and desires is upheld. *Respeto* is the maintenance of harmonious interpersonal relationships through respect for self and others. And *educacion* interconnects moral, interpersonal, and academic goals. Parents view themselves as responsible for children's social and moral development, while the teacher is seen exclusively as the academic instructor.

In the Chinese-American culture, family relationships are also significant in the educational development of children (Diamond, Wang, & Gomez, 2004). Being involved in their children's education required a reliance on community-based resources (ethnic cultural capital), particularly for working class parents. Members of this community gain child care and monetary support from family members, churches, and other significant community adults. With communal support, or social capital, extended kin and co-ethnic friends compensate for limitations in other forms of capital, such as limited money and time for educational participation.

Chinese American families are less likely to be active in schools than White middle-class families, but involve themselves in their children's education through home-

based activities. Diamond et al. (2004) refer to this type of involvement as "backstage/behind the scene" involvement. For Chinese American communities, "access to these resources depended on immersion in the cultural traditions of the community, making this immersion a form of cultural capital (Diamond et al., 2004). School teachers and administrators' recognition of these non-dominant forms of social capital is necessary in building a stronger connection between the school and the communities.

In the African American community, parent involvement encompasses in-school and at-home activities (Cousins & Mickelson, 2011; Diamond et al., 2004; Howard & Reynolds, 2008). In-school activities, especially for middle-class African American families, include those that are traditionally recognized by school personnel, including attending school events, having planned and impromptu meetings with the teachers, and participating in Parent Teachers Association (PTA) and school governance meetings.

In addition to traditional forms of parent involvement, however, at-home activities are also significant in the African American community (Cousins & Mickelson, 2011; McDermott &Rothenberg, 2000). These activities include motivating children and monitoring their academic success, and creatively supplementing children's education with additional social and academic resources. Parent involvement outside of the school setting also includes providing physical and emotional support, such as providing basic needs, family activities, educational assistance, and conversations centering on life lessons (Williams & Sanchez, 2012).

As a result of limited resources and capital, including money, education, time (Diamond, Wang, & Gomez, 2004), and shared parenting (Cousins & Mickelson, 2011), and because of their own school experiences (McDermott &Rothenberg, 2000), some

parents in the African American community have limited parent involvement experiences. Being able to maneuver between the space (the school) and capital (the school culture) is contingent on the parent's ability to articulate what he/she knows and wants on behalf of the child. According to Howard and Reynolds (2008), when parents are equipped with information and have a developed "knowledge of the 'traditional' capital school operate within" (p. 91), parents are more able to engage in their children's education, thus creating a greater possibility of framing how and when they will become involved.

Kalyanpur and Harry (2012) suggest that building parent-professional relationships requires individuals to develop the awareness that their culture can be different from the culture of another. This process of "awareness", that they have coined *Cultural Reciprocity,* requires that one moves beyond the awareness of cultural differences to self-awareness. This transition, they posit, will help the professional to confront and challenge the contradictions between their cultural values and their professional practices.

As described in the aforementioned research, there are broad ranges of characteristics and attributes that formulate the concept of parent involvement, and several characteristics are common among theorists, researchers, practitioners, and parents. They range from being passive and indirect, like making sure that children eat a good meal and go to bed at a good time during school nights, to being actively involved in the day-to-day operations of the classroom and school through volunteerism and decision-making. Though there may be some differences in opinion about how parent

involvement should be defined, research outlined in the following section will show that there is agreement that parent involvement is beneficial to the achievement of children.

The Importance of Parent Involvement

There are many positive outcomes associated with parent involvement in education. Research conducted by Anderson and Minke (2007) and by Williams et al., (2011) found that when parents were involved, students experienced higher grade point averages, increased achievement in reading, writing and math, fewer grade retentions, and lower rates of placement in special education programs. In addition to these academic outcomes, the presence of parent involvement in schools is associated with increased graduation rates, as Ferrara & Ferrara (2005) found in their study, and lower dropout rates, increased abilities to self-regulate behaviors, and higher levels of social skills (Anderson & Minke, 2007).

Not only do students experience positive outcomes when parents are involved in their education, but schools and parents also benefit. In terms of school advantages, schools that have quality and ongoing parent involvement programs outperform schools that do not have such programs in place (Pena, 2000). These schools are also able to take advantage of available parent resources when parents volunteer and provide support for the school in various ways (Pena, 2000).

Parents also benefit when they are involved in their child's school. For example, parents are able to receive training (Lopez et al., 2001) and learn about community resources (Quezada, 2003). In these settings, parents develop a better attitude, become more active, and some even seek more education for themselves (Pena, 2000).

Ultimately, parents seek higher aspirations for their children and children achieve greater school success.

Lack of Parent Involvement in Urban Education

The presence of parent involvement positively affects student academic achievement across economic, social, and cultural boundaries (Jeynes, 2003; Lee & Bowen, 2006). Researchers working with students and parents in the inner-city and in the suburbs, and those living inside and outside of the United States have indicated that parent involvement increases student academic outcomes (Jeynes, 2003). However, given these facts, there still remains a decline in parent involvement in education. A general explanation for this is the idea that more parents are joining the workforce, modern life is more fast-paced, and the role of family is declining and changing (Jeynes, 2003).

Among racially, ethnically, and linguistically diverse populations, additional factors contribute to the decline or the absence of parent involvement in schools. For example, among Mexican American parents, there is a cultural belief that the education of students is the responsibility of the school, and that intervening in the teacher's duties is wrong (Durand 2010; Pena, 2000). Other factors that negatively impact parent involvement include language barriers and the lack of an adequate Spanish interpreter, friction between parent cliques at the school site and in the neighborhood, parents' limited education and literacy skills, teacher attitudes and behaviors, and cultural and family influences (Pena, 2000).

Similar to the factors that contribute to Mexican American parents limited participation, low-income families living in urban communities are also reluctant to be involved in their child's school. These parents perceive themselves not as partners in their

child's education, but as a person outside of the school system; thus, the education of children is seen as the responsibility of those in the school (McDermott & Rothenberg, 2000). Also affecting parents' willingness to become involved is the parent's level of confidence in his/her own ability to make a difference in the education of the child (Al-Kandari & Al-Qashan, 2010; McDermott & Rothenberg, 2000). Schools in urban communities that failed to make parents feel comfortable and valued contributed to the parents' unwillingness to become involved (Cooper, 2003; McDermott & Rothenberg, 2000).

Lack of Parent Involvement in Urban Special Education

Just as there is a lack of parent involvement in urban classrooms, there is also limited parent involvement in special education classrooms in urban communities. In addition to the factors that contribute to the reluctance of urban parents to become involved in their child's education, several factors specific to the special education setting have a negative impact on parent involvement. To start, problems with finding an appropriate interpreter deters some families from attending parent conferences, such as Individualized Education Plan (IEP) meetings where important educational decisions and future goals for the child are discussed (Pang, 2011). Because school personnel often use jargon that is unfamiliar to parents, and because some parents are unclear about the IEP process in general, some families choose to either not attend the meeting, or to relinquish educational decisions to the teacher and school staff (Pang, 2011; Parette & Petch-Hogan, 2000).

Another barrier that deters families from being fully engaged in their child's education and parent conferences is inconvenient meeting times and locations (Pang,

2011). Many parents work during school hours, and if they miss time from work to attend meetings, their wages will be lost. For some families, this could result in not having enough money to buy food or to pay utility bills. The lack of adequate transportation to and from the meetings is another deterrent for some parents of children with special needs (Pang, 2011; Parette & Petch-Hogan, 2000).

During IEP meetings and other types of parent conferences, conflicts may arise between the school and the family, creating yet another barrier for successful parent involvement. For example, the school's recommendations for the student may not be aligned with the family's desires, expectations, or capacities (Kalyanpur, & Harry, 2012; Pang, 2011; Parette & Petch-Hogan, 2000). Misunderstandings may also develop from misread body language, nonverbal communication (i.e., head nodding), or culturally specific communication cues (Pang, 2011). These conflicts may cause discord and feelings of neglect, embarrassment, and frustration (Kalyanpur, & Harry, 2012; Pang, 2011).

Factors that Increase Parent Involvement in Special Education

In examining the above literature related to parent involvement in education, scholarly journals are replete with articles that declare the importance of parent involvement in a child's education. Supporting those assertions, there have been numerous studies conducted that provide evidence of the importance of parents and caregivers being involved in a child's academic development (e.g., Anderson & Minke, 2007; Humphries, Strickland, & Keenan, 2014; Williams et al., 2011). Researchers and other experts in the field of education have developed theories and paradigms to measure,

classify, and qualify behaviors that parents exhibit with respect to their child's academic performance.

The current review of recent literature will outline several studies that provide research-based suggestions regarding the enhancement of parent-involvement behaviors in schools. The review will also show that there is limited research highlighting the voices of African American parents and their opinion of teacher behaviors that increase parent involvement in special education.

In a quantitative study conducted by Bailey, Silvern, Brabham, and Ross (2004), researchers were interested in determining if an interactive reading homework assignment would increase parent involvement and increase students' reading comprehension. Seven second-grade classes across three different schools in southeastern Alabama with a total of 84 students and their parents participated in this research project. Neither race nor ethnicity was mentioned; however, the majority of the students in the sample population qualified for free or reduced lunch. The experimental groups in one school received an interactive homework assignment, and parents received instruction about the importance of doing homework with their children. The experimental groups in the second school received the interactive homework, but parents did not receive any additional instruction. The last school contained the control groups, where the students did not receive the interactive homework, nor were parents provided any instruction.

The children in the experimental groups where students received the interactive homework and the parents received instruction on the importance of homework outperformed both of the other schools, and the school that was provided the interactive homework only outperformed the control group schools. Parents in both experimental

groups reported that they spent double the amount of time with their children who had the interactive work. There was no significant difference found between groups of parents who received instruction about the importance of homework and the groups that did not receive this instruction.

The results of this experiment indicated that homework assignments that require parent and child interaction increases parent involvement and increases student performance in reading inference skills. According to these researchers (Bailey et al., 2004), parent-child interaction promotes educational interest for both the parent and the child. The research methodology employed in their study was quantitative in nature, which limited any opportunity to gather information from parents, students, or teachers about other aspects of this interactive homework that may have influenced the results. Nonetheless, these investigators provided several suggestions for promoting parent involvement in school. Some include: (a) when assigning homework, incorporate elements that will increase the likelihood of parent-child interaction, (b) consider parent and student interests, and (c) encourage parent homework workshop sessions.

Lewis, Kim, and Bey (2011) conducted qualitative research to investigate teaching practices and strategies that promote parent involvement in the inner-city of a major city in the northeastern United States. They used Epstein's definition of parental involvement to address six components of parent and school interaction. Two teachers from an elementary school were identified by teachers and parents as having successful interactions with their students' parents who are African American. Ms. Hall taught first grade and had 24 years of teaching experience. Mr. Jake taught fourth grade and had four years of teaching experience. Ms. Hall, who is also African American, was born and

educated in the same community as the school. Her family dynamics were similar to those of the students in her class. Mr. Jake, an African American male, was born in a nearby county and attended college in a different state. His does not have any children, but relates to his students by remembering his own upbringing.

Both study participants engaged in one-hour, semi-structured and open-ended interviews three times during the study period. These two teachers were also observed in an effort to gather additional information about their interactions with their students and their students' parents. Five main strategies emerged from the interviews and observations. These included "practicing parent outreach, establishing a relationship with parents, creating a positive classroom climate, teaching to involve parents, and making the community-school connection" (Lewis, Kim, & Bey, 2011. p. 226).

In practicing outreach to parents, both participants used telephone calls to communicate positive information with parents, used progress reports and report cards to inform parents of their child's academic standing, created class newsletters to showcase student work and progress, and visited homes to connect with parents and to show their commitment and interest in their students. In contrast, however, the teachers had different strategies for establishing relationships with parents. For example, Hall encouraged her parents to help their children with their homework in the way that was most comfortable to the parents, or "the old way", as some parents referred to it. She also stayed after school to tutor some of her students. Mr. Jake established relationships by providing opportunities for his parents to experience their child's progress. He invited one father, for example, to stay and listen to his son read. After listening to his son, the father shared that he did not know that his son could read as well as he did.

Both teachers in their study used a child-centered approach to create a positive classroom climate. For example, one teacher shared that it was necessary for her to perform many duties in her classroom (i.e., teacher, doctor, nurse, problem-solver, and lawyer) because these functions were important to the academic success of her students. A further illustration of this child-centered approach is the unique display one of the participants placed in his classroom – a wall labeled *Important African Americans*, where the pictures of his students, their parents, and other family members are displayed.

Another finding from their study is that both participants involved their students' parents in their teaching. In addition to having the parents sign their child's homework, one participant offers training workshops that prepare parents to teach a lesson in their child's classroom. Likewise, the other participant in the study involves his parents in his teaching by assigning roles to the parents and allowing the parents to participate according to what motivates his students.

Connecting the parents to the school was the final strategy that the researchers observed in these two inner-city teachers. One strategy that was used included asking parents to reach out to other parents in the community to relay information and to get permission for various activities. As one of the participants explained, when the school has a good reputation, the parents are more compelled to be involved. He explained that the parents and students know that they are all welcomed at the school, no matter which street in the community they lived on.

Lewis, Kim, and Bey (2011) highlighted strategies that two teachers have used to increase parent-teacher interactions in the African American community However, their study shares a similar limitation as the 2004 study conducted by Bailey and colleagues.

That is, although this qualitative study highlighted the thoughts and emotions of the participants, it was designed to reflect the thoughts and dynamics of the classroom teachers. The voice of African American parents was lacking from the study.

In contrast to the aforementioned studies that did not provide a platform for parents' concerns, the thoughts and concerns of parents are recognized in the qualitative research by Williams, Sanchez, and Hunnell (2011). These researchers assert that the term *parental involvement* is misleading and does not incorporate the role of school personnel and the interaction between the parent and the school as a system. They prefer the term school-family partnerships, derived from four ecological principles, including interdependence, cycling of resources, adaptation, and succession. These principles, according to these researchers, convey the importance of interactions between individuals and their environment. The purpose of their study was to investigate how ecological principles are reflected in the school-parent partnerships of an African American inner-city high school in a large Midwest school district.

Everett (pseudonym) High School's population had 92% students of color, with 86% from low-income families. Fifteen parents of high school students and 10 school personnel were randomly selected for the study. Of these 25 adults, most were African American women between the ages of 24 and 62, and 50% reported a total household income of less than $50,000. The participants participated in a semi-structured interview. The interview consisted of four sections. Participants were asked (a) about their background and demographic information; (b) about their conceptualization, including descriptions and beliefs, of school-family partnerships; (c) to provide specific examples pertaining to their experience with school-family partnerships; and (d) about

characteristics and practices that encourage or hinder school-family partnerships in the African American community.

The four themes that emerged from their study were effective communication, initiation of contact, provide and protect, and contextual conditions. Both parents and school personnel spoke of the importance of an interdependent relationship between the parents and the school. They discussed that the parents and the school personnel maintain effective communication by the school's use of an open-door policy, the parents' commitment to informing the school when there is something happening at home that affects the child's progress in school, and by the parents and school personnel sharing their cell phone numbers and email addresses to communicate effectively. The participants in the study emphasized that both the school and the parents were responsible for the school-family partnership, and responsible for making sure that the partnership was effective for both parties.

Initiation of contact was another theme that emerged from their study. Either the parents or the school personnel initiated the contact. When parents initiated contact, for example, it was for the purpose of obtaining necessary school documents, to discuss issues that were reported by the child, or to discuss the student's academic progress. When discussions about school-initiated contact arose, both parents and school personnel agreed that the primary reason the school contacted the parent was during times that the child was in trouble. However, the school also initiated contact to share information about an upcoming event or to share information about school resources available to the families.

All participants in the study agreed that resources were not always equally available to all students, whether within the school or outside the school in the community or child's home. Parents reported that they would bear the burden of supporting students who needed to eat, needed shelter, or needed clothes to wear, for example. Both parents and school personnel discussed the importance of keeping children safe in school and in the community. They noted that fights occurred at the school as a normal occurrence; therefore, parents and school personnel would walk the halls and report any signs of trouble to the office or to school police.

The last theme, contextual conditions, spoke to the changes that occurred at the school over time, as described and experienced by parents and school personnel. They reported that violence has escalated to be more physically threatening than in the past, and as a result, the school had to change its approach in managing the students. Additionally, the parents and school personnel saw changes in school-parent partnerships as children transitioned from elementary school to high school. Only two parents shared that they were more involved in their children's high school education than they were in elementary school.

Although parents' perspectives were considered in the study, there were still some limitations. First, the parents were selected from a group of parents who are involved in the education of their child. However, parents who do not participate in school-family partnerships at this school were not included in the study. Additionally, there was no specific mention of parents whose children struggle academically or behaviorally.

To explore parent perspectives of parent involvement in a more diverse student population, with parents who do not typically come to the school, Mapp (2003)

conducted a study at Patrick O'Hearn Elementary School, in Boston, Massachusetts, which boasts a 90% parent participation rate in the school's home- or school-based family engagement activities. Of their 220 students, 67% qualify of free of reduced lunch, 25% are children with special needs, and the majority of the students are African American, with 34% being White, 6% being Hispanic, and 5% being Asian.

After receiving a grant to enhance the relationship between schools, parents, and the community, the O'Hearn Family Outreach program was developed. In addition to school staff, the members consisted of 15 volunteer parents and grandparents from diverse backgrounds, including African American, White, and Latino. Parents of children with special needs were also represented in the program. Collectively, the group became interested in learning why some parents had never visited the school. As a result, they began visiting those homes and encouraging the parents to come out to the school by sharing how parents are respected and welcomed in the school. The results of these visits were so positive that the team decided to make home visits to new families a new policy at the school.

A study was conducted at the school to identify factors that lead to successful educational partnerships between O'Hearn Elementary staff and families. The chosen methodology was that of a qualitative case study. Eighteen parents were chosen to be engaged in a one-on-one in-depth interview. Five of these parents had children enrolled in the special education program at the school, nine of the parents were African American, eight were White, and one was Hispanic. The interviews averaged 2-3 hours in length.

Five major themes emerged from the findings. In theme one, "Parents wanted their children to do well in school, and they had a genuine and deep-seated desire to help their children succeed academically" (Mapp, 2003, p. 42). Regardless of their ethnicity, socio-economic level, or family dynamics, all the parents in her study showed a level of concern for their child's success. The second theme was, "Parents understood clearly that their involvement helped their children's educational development" (Mapp, 2003, p. 42). When the parents saw a change in their child's behaviors and feelings about school after the parents' involvement, the parents were more motivated to remain connected to the school. Parents' involvement behaviors were more evident in theme number three, "Parents were involved in their children's education both at home and at school. Many were involved in ways not recognized by school staff with a narrow vision of what constitutes legitimate participation" (Mapp, 2003, p. 43).

Some of the behaviors that parents reported engaging in were not always accepted as parent involvement by school personnel. Themes four and five addressed the parents' personal experiences with school and how those experiences impacted their participation in their child's education. When parents felt welcomed by the staff, honored for their participation in the school, and connected to what their child was learning, the parents were more compelled to participate.

In a qualitative study of mothers of children with disabilities, Sheldon, Angell, Stoner, and Roseland (2010) aimed to investigate the level of trust held by the parents for the school principals. A snowball sampling method was used to recruit the participants. The 16 mothers ranged in age from 18 to 55, most were White, with only one being African American and three being Hispanic. The mothers resided in a range of

geographical areas, including rural, suburban, and urban communities in a Midwest state. All of the participants were engaged in a semi-structured face-to-face interview, with the interviews ranging from 60 to 90 minutes.

The results of the study revealed that these mothers recognized approachability and authentic care as positive personal attributes in a school principal. Some mothers shared that the principal at their child's school was easy to approach and talk to. Some mothers also shared that they had visited with the school's principal several times. These mothers attributed the principals' approachability and authentic care with the care the principals showed to the students. They trusted principals who treated their children with care. However, not all mothers had this same experience. Although they agreed that approachability and authentic care were positive attributes, some mothers did not feel that their school's principal carried that quality.

Professional attributes recognized by the mothers in their study included the accessibility of the principal and the principal's knowledge of the child's special need. The mothers expressed how much they appreciated the time the principals took away from their busy schedules to answer their questions or listen to their concerns. Further deepening the mothers' trust was the principals' willingness to learn about their child's disability. One mother shared that her principal had no knowledge of her child's disability. The mother offered to provide an in-service to the entire staff, including the principal. The principals accepted her offer. This raised her level of trust and appreciation for the principal.

The principals' actions with the system, the schools, and the families were other positive attributes the mothers recognized. For example, when the principal attended IEP

meetings, some of the mothers felt that the principal was making an effort to learn about the child. However, one mother reported that her child's principal attended only one IEP meeting because the mother was threatening the school with due process. Most participants reported that their schools' principals did not attend IEP meetings on a regular basis. However, attending IEP meetings was generally perceived as a positive and trustworthy action. Actions that led to distrust were also shared by the parents. For instance, one parent shared that her son's principals refused to have him evaluated when she requested it; he insisted that her son was just a disruptive child.

As outlined above, research highlighting the voices of African American parents of children with disabilities is limited. However, research projects that investigate parent involvement in the African American community and how it affects student achievement are increasing. For example, there is a growing body of dissertation research related to parent involvement of African American parents of children with disabilities. Thompson (2014) conducted a study of African American parents and their perceptions of their son's special education program. The results of her study indicated that parent involvement obstacles included lack of communication between parents and the IEP team, parents' limited knowledge of special education law, and the school staff's lack of understanding of the cultural needs of diverse students. The obstacles to parent involvement of African American parents indicated in her dissertation study echoes the results of empirical studies conducted by researchers in the field (Williams & Sanchez, 2012).

Just as researchers in the field of special education have investigated teachers' attitudes and perceptions of African American parents (Harry, 2008; Williams, 2007), in

her dissertation research, Stanley (2013) investigated how African American mothers advocated for their children with special needs. Similar to the results of both the Harry (2008) and Williams (2007) studies, Stanley found that African American parents reported fewer instances of advocacy attempts and levels of parent involvement when they perceived that teachers had negative perceptions of the African American parents.

Chapter Summary

In reviewing the literature as outlined in this chapter, parent involvement impacts student achievement. However, as the literature also reveals, parents in urban communities are less likely to be involved in their child's education than are parents of the mainstream culture. Although limited in research, the literature supports that parents of children with special needs in urban communities have the least amount of involvement. This phenomenon is due to a number of factors. One significant factor lies in the reality that the concept of parent involvement differs among school administrators, teachers, and parents (Eccles & Harold, 1993; Epstein, 1987; Hoover-Dempsey & Sandler, 1995). Additionally, parents of non-mainstream cultures face life circumstances that impede their level of involvement (Durand, 2011; Williams & Sanchez, 2012). There are some studies that highlight the voices of parents of children with special needs in urban communities with respect to their thoughts of what increases or decreases their level of involvement. These qualitative studies are few in number, providing an opportunity for additional research in this area.

Chapter 3 outlines the methods used to examine the research questions for this current study. It discusses and provides a premise for the chosen research design, setting, and study participants. Chapter 3 also provides an overview of the data collection

procedures, and outlines how the data will be analyzed. At the close of the chapter, the identity of the researcher will be discussed.

CHAPTER III

METHODS

A phenomenological study design was used to explore parent perceptions of teacher characteristics that influence parent involvement of African American parents of children with special needs. In the first section of this chapter, the research questions are outlined. Next, the research design is discussed, followed by the setting and then the procedures for selecting the study participants. Data collection and data analysis guidelines are discussed towards the end of the chapter.

Research Questions

It is important to understand that much of the existing research that investigates parent involvement premises its definition of involvement on the mainstream culture. However, because the concept of parent involvement is subjective and influenced by cultural norms and expectations (Bower & Griffin, 2011), including the culture of special education (Harry, 2008), parent involvement must be defined with respect to cultural differences, including variations that may exist within cultural groups.

Furthermore, researchers investigating strategies that increase involvement questioned school principals, teachers, and parents (Feuerstein, 2000; Sheldon et al., 2010); however, these studies' participants were rarely inclusive of parents from urban communities (Davis et al., 2005). Cultural differences between urban communities and mainstream communities significantly impact what it means to be *involved* (Durand, 2005; Lewis, Kim, & Bey, 2011); consequently, strategies to increase parent involvement will likely be different. Therefore, not only should the voices of mainstream parents be considered when researching parent involvement, but the voices of parents of children

with special needs from urban communities should also be prominent in the literature, perhaps more-so because this group is impacted the greatest.

The purpose of the present study was to investigate African American parent perceptions of teacher traits, characteristics, or actions that either promote or inhibit their level of involvement in the educational development of their child with special needs. The research questions were as follows:

From the point of view of African American parents of children with disabilities:

1. How do African American parents of children with disabilities perceive their involvement in their child's special education program?
2. How do African American parents of children with disabilities perceive their involvement with their child's classroom teacher?
3. How do African American parents of children with disabilities perceive their involvement in their child's school?

Research Design

The study examined African American parents' descriptions of parent involvement and their perceptions of teacher traits, characteristics, or actions that either promote or inhibit their level of involvement in the educational development of their child with special needs. A phenomenological design was used to select participants, gather and analyze data. This study contributes to the literature by giving a voice to African American parents of children with special needs.

In phenomenological research, the researcher investigates the essence of the phenomenon experienced by the study participants (Patton, 1990). That is, the researcher tries to understand the "relevant events, factors, and moments that make up the

individual's conscious moments" (Paul, Kleinhammer-Tramill, & Fowler, 2009, p. 169). By investigating the relationship between the study participant and his or her experiences, the researcher is able to explore the fundamental nature of that particular lived experience. For this study, the phenomenon of being an African American parent involved in the educational process of a child with special needs will be explored.

I used the semi-structured interview as a primary source of data collection. To gain a clear understanding of how parents perceive involvement, interview questions and probes allowed them to discuss and describe various aspects of involvement that are important to them, which informed the first research question, how do African American parents of children with disabilities perceive their involvement in their child's special education program? The second and third research questions, how do African American parents of children with disabilities perceive their involvement with their child's classroom teacher (question two) and in their child's school (question three), also require that participants be given the opportunity to discuss their experiences with their child's teacher and if they felt the teacher's behavior impacted their desire to be involved in their child's school. By refraining from a rigorous predetermined set of interview questions, participants had the opportunity to deeply explore the concept of involvement, from large themes to small nuances (Creswell et al., 2007).

The Education for All Handicapped Children Act of 1975 assured that all children with a disability have available to them an individualized education program (IEP). "The term 'individualized education program' means a written statement for each handicapped child developed in any meeting by a representative of the local educational agency or an intermediate educational unit who shall be qualified to provide, or supervise the provision

of, specially designed instruction to meet the unique needs of handicapped children, the teacher, the parents or guardian" (IDEA-B, 2004). Therefore, in addition to specifying how the child's unique needs will be met, the IEP must also include information specific to the parents of children with special needs.

I also reviewed the IEP documents of the children of study participants to verify that the students have been formally evaluated and recognized as having a disability. The "parent statement" section of the document will also be reviewed with the study participants to ascertain the degree to which educators recorded parent's concerns during the meeting, and whether the parents felt that those concerns were addressed in the IEP document. Because mainstream culture places significant emphasis on attending IEP meetings as a basic premise for parent involvement in special education (Pang, 2011), the discussion of the IEP document informed the first research question, how do African American parents of children with disabilities perceive their involvement in their child's special education program.

Participants

Data from this study were collected from African American parents of children with an active IEP residing in the southeastern region of Florida. According to the National Center for Educational Statistics (2), this region holds the two largest school districts in Florida, and they are among the top ten largest districts in the country. Together, these two districts serve over 110,000 children in special education programs, of which 29,000 are African American (Florida Department of Education Graduation Rates, n.d.).

For the current study, African American individuals were considered those of African descent living in the United States, excluding Caribbean-born individuals. Parents were defined as biological or step parents, grandparents, aunts, uncles, or non-biologically related persons who were the custodial caregivers of children with special needs. The term "parents" did not include foster parents, non-custodial parents, or persons with whom the child resided temporarily.

A total of twenty candidates were contacted for this study, 18 women and two men. Both male candidates and one female candidate agreed to participate during the initial screening process; however, after several unsuccessful attempts to finalize a meeting time, none were selected for the study. Two female candidates were not selected to participate because they initially self-identified as African American, but later, after thorough questioning, they revealed that they were of Caribbean descent. The remaining fifteen candidates were included in the study (see Table 1). Twelve are the biological mothers of children with special needs, one is a grandmother, one is an adoptive mother, and one is an adoptive aunt. Though it was not the intention of the researcher, the fact that all participants in the study were female is indicative of the mother's leadership role in children's education and educational matters (Cooper, 2009; Sharp & Ispa, 2009).

Specific information regarding the relationship between "mother" and child is not detailed because several of the study participants were not comfortable with having that information shared and paired with their occupation and their child's gender, as they felt that these specifics could possibly breach confidentiality. Ten of the mothers were very eager to participate in the study, seven of whom the researcher had a previous relationship either through church or personal acquaintanceship. Of the other five

mothers who were reluctant to participate initially, all became more relaxed and comfortable as the interviews progressed.

Convenience sampling was used to select the initial participants, followed by a snowball sampling, where selected participants were asked to recruit study candidates who fit the criteria (Onwuegbuzie & Leech, 2007a). Four participants, with whom the researcher had previous affiliations through church, were selected in the initial sampling round. Three participants were recruited by the leader of the church's tutoring program, as she was privy to the educational backgrounds of many of the students who attended the church. Six participants were recruited as a result of snowball sampling (four through current participants and two through personal acquaintances). Two participants, who had no affiliation with anyone from the church, were personal acquaintances of the researcher. See Table 1 for more information about participants.

The disability categories used in this study were those recognized by the state of Florida as qualifying a child for an active IEP, excluding Homebound/Hospitalized and Gifted (Florida Department of Education: ESE Eligibility, n.d.).

Table 1
Participants' Demographic Information

Participant's Pseudonym	Age	Occupation	Marital Status	Child	Childs' Level in School	Disability
#1 Jennifer	54	Lawyer	Married	Judy	High School	Deaf/Hard of Hearing
#2 Tabitha	38	Paralegal	Divorced	Tony	Elementary School	Other Health Impaired (ADHD)
#3 Georgia	57	Business Owner	Separated	Gary	High School	Intellectual Disability
#4 Betty	52	School Bus Driver	Single	Breana	Middle School	Specific Learning

						Disability
#5 Ethel	53	Nurse	Married	Edward	High School	Specific Learning Disability
#6 Sarah	63	Teacher	Divorced	Sabrina	Elementary School	Emotional / Behavioral Disability
#7 Gloria	37	Radiology Technician	Single	Grace	Elementary School	Intellectual Disability
#8 Henrietta	30s	Stay-at-home Mother	Single	Harmony	Elementary School	Autism Spectrum Disorder
#9 Ivory	42	Asst. Principal	Divorced	Isaac	Elementary School	Specific Learning Disability
#10 Rhonda	45	Stay-at-home Mother	Married	Rochelle	Elementary School	Intellectual Disability
#11 Keisha	39	Corrections Officer	Single	Keona	Elementary School	Deaf/Hard of Hearing
#12 Cynthia	35	Social Worker	Single	Cedric	Elementary School	Emotional / Behavioral Disability
#13 Nadia	35	Day Care Worker	Separated	Nelson	Elementary School	Specific Learning Disability and Speech Impaired
#14 Monica	35	Para-Educator	Single	Michael	Elementary School	Emotional / Behavioral Disability
#15 Angel	41	Federal Government Employee	Married	Anthony	Elementary School	Autism Spectrum Disorder

Of the 15 participants selected for the current study, their children were receiving services through seven disability categories including Autism Spectrum Disorder, Deaf or Hard-of-Hearing, Emotional/Behavioral Disability, Intellectual Disability, Other Health Impairment, Specific Learning Disability, and Speech Impairment. At the time of data

collection, all students were enrolled in a Florida public elementary, middle, or high school and had a current IEP.

Data Collection

Data collection procedures and the development of the interview protocol are discussed in this section. As discussed previously, in phenomenological studies, researchers seek to discover the essence of the lived experiences of the study participants (Patton, 1990). Quite often, however, the "researcher knows too much, rather than too little, of the phenomenon under study" (Paul, Kleinhammer-Tramill, & Fowler, 2009, p. 171), and having an extensive knowledge of the topic one is exploring may prejudice the results. Therefore, before any data collection procedures commence, the researcher should engage in the bracketing process (Moustakas, 1994). This requires that the researcher *brackets*, or sets aside any preconceptions, assumptions, or viewpoints so that the participants' experiences can emerge, rather than the experiences of the researcher (Ashworth, 1999; Creswell & Miller, 2000; Moustakas, 1994).

In the current study, the researcher engaged in the bracketing process prior to the parent interviews. Specifically, the researcher wrote a personal statement of her own experiences concerning the phenomenon. That statement highlighted the researcher's past experiences as a classroom teacher of children with special needs in the inner city of Miami-Dade county and the researcher's current position as an education consultant in the special education arena. Personal and familial connections to special education were also highlighted, as the researcher explained that she has an older brother who has learning disabilities and a younger brother who received services in the intellectual disabilities program throughout his high school years.

Through the bracketing process, the researcher also discussed her lived experiences as a child who witnessed her mother's anguish whenever she returned home from her older brother's IEP meetings, and as a granddaughter who helped her grandmother navigate the often confusing process of having her younger brother identified, evaluated, and placed in a special education program. Conversely, the researcher also shared her experiences as a classroom teacher who faced limited participation from her own students' parents, and how that impacted her efforts as a teacher. Recognizing her own positive and negative feelings about parents' experiences with participation in special education, and communicating with the parents using their words and not jargon from the field (Paul et al., 2009), helped the researcher to set aside her own personal and professional feelings and biases and focus on the lived experiences of the study participants.

Interviews

Study participants were engaged in one-on-one, semi-structured interviews which had no predetermined time limitations. The duration of the interviews ranged from 50 minutes to 2½ hours. For families with two parents, the mother assumed the role as the one who would be interviewed. All husbands declined to be interviewed. The interviews were voice recorded using the researcher's cell phone as the primary recorder and another cell phone as the back-up recorder. Participants were given the opportunity to meet in a setting that was comfortable and convenient for them. Seven interviews were conducted in the participants' homes, five were conducted in the researcher's office (non-school-site location), two were conducted at the outside dining area of fast food restaurants, and one was conducted at the participant's place of employment.

Each study participant was asked to provide a copy of their child's most recent IEP and any additional IEPs that they had. The IEPs were used during the screening process to confirm that the child was presently receiving services in a special education program. One participant forgot to bring her child's IEP to the interview and could not be reached after several attempts to contact her. The researcher had previous knowledge of this child's educational status as a student serviced in the special education program.

During the interview, the researcher reviewed the *parent statement* section of the IEP with the participant to gain a deeper understanding of the participant's perceptions of the IEP process and her level of involvement in that process. Specifically, during the interview the parent's comments that were recorded on the IEP document were reviewed with the participant to determine whether or not an accurate portrayal of her involvement in that meeting was recorded on the document.

The interviews were constructed with a combination of more-structured and less-structured questions (Seidman, 2013). More structured questions were used to ascertain the participants' description of parent involvement, teachers' actions that affect their level of involvement, the depth of knowledge of their child's special education program and types of services provided at the school. Open-ended, or less structured, questions were used to generate thoughts and to clarify or move forward to more in-depth conversation (Creswell, 2003). The open-ended structure of the interview allowed participants to use their own words (Seidman, 2013) to describe how they perceived the behaviors of their child's teacher and how these behaviors influenced their level of involvement.

Probing questions were also used to give the participants an opportunity to clarify any information, and for the researcher to gain a deeper understanding of the participant's

thoughts (Rubin & Rubin, 2005). Probes were also used to explore with the participant (Seidman, 2013). That is, if participants provided general or abstract information, probes such as, "can you explain that a little further," or what do you mean by that" helped the participant articulate deeper and more meaningful experiences.

Before the interviews ended, the participants were given the opportunity to provide additional information that they felt was relevant to the discussion. They were able to provide any necessary clarification, and gave their final thoughts about the topic, the interview, and the research process. For the interview protocol, see the Appendix.

Data Analysis

Data analysis procedures are discussed in this section. The purpose of data analysis is to bring meaning, structure, and order to the data (Bogdan & Biklen, 2007). Analyzing data in the form of rich, thick descriptions helps support the research credibility, because it allows as much detail as possible to convey the participants' experiences (Creswell & Miller, 2000). In the content analysis process (Patton, 2002), raw field notes or transcripts of data are read through thoroughly and primary patterns in the data are identified, coded, categorized, classified, and labeled. Next, codes and categories are developed from patterns that emerge from the data. Then the codes are analyzed to determine which codes fit together. This initial process is known as convergence (Patton, 2002). Once the categories, or patterns, have been developed, divergence commences. In this process, categories are built upon, or extended, connected to other categories, or bridged, and new categories are developed if necessary. This process continues until sets of categories have been saturated, when no new categories emerge.

For the current research, the interviews were recorded using the researcher's cell phone as the primary recorder and a second cell phone belonging to the researcher was used as a back-up. Each of the interviews was transcribed verbatim. It was the desire of the researcher to personally transcribe each interview. However, due to time constraints, 11 of the 15 transcriptions were completed by a third party. Once transcribed, the researcher thoroughly reviewed the raw data for accuracy by listening to the recorded session and reading the transcript making corrections when appropriate.

Using the transcriptions, the researcher then followed Patton's (2002) multi-step process to analyze the data, as previously described above. To facilitate the convergence level of content analysis, the researcher used sticky notes to highlight and code data into 18 meaningful patterns, some of which included *Parents Define Parent Involvement, How Schools React to Parent Involvement, Parents' Childhood Experiences with Parent Involvement, Advocating for Their Child, Parent Involvement and Culture, How Parent Involvement Impacts Student Achievement,* and *Parent Involvement Outside of School*. The codes were then analyzed to identify any meaningful categories. There were a total of 65 categories that emerged from the established patterns. For example, the five categories that emerged from *Advocating for Their Child* included *Parent Teaching Child to Self-Advocate, Parent Advocating for Child, Parent Self-Advocating, Child Advocating for His Own Rights,* and *Parent Brought Friend/Family to Advocate on Her Behalf.*

After this convergence phase, the established categories were developed into new categories. This process continued until saturation, where no new categories emerged. The four overall themes that emerged from the data analysis process are *Perceptions of Parent Involvement, Facilitators of Parent Involvement, Barriers of Parent Involvement,*

and *Recommendation to Teachers and School Administrators to Increase Parent Involvement*.

Member check, or the process of involving the study participants in the reviewing and interpretation of the data, was also employed to ensure the validity of this current study (Creswell & Miller, 2000). After the interviews were transcribed, coded, and interpreted for possible themes, the study participants were asked to review the information for the accuracy and intent of their words. No participant reported any discrepancies or misinterpretations. Furthering this current study's validity, the researcher kept a journal documenting the details of each interview, thus establishing an audit trail. Specifically, the dates and times of each interview, the duration of the interviews, the participant being interviewed, the participant's body language and non-verbal communication during the interview, and any details pertinent to the interview process were recorded. Additionally, the researcher's initial thoughts were also recorded immediately after each interview (Brantlinger et al., 2005; Lincoln & Guba, 1985).

Identity of the Researcher

The researcher is an African American female who has had extensive education and experiences with children and parents of children with disabilities. She previously worked in urban communities as a classroom teacher in the special education setting. In addition to her professional involvement with parents and children with special needs, the researcher is the sibling of persons with disabilities, which are her older and younger brothers.

Because of her previous and current affiliations with schools and school personnel, the researcher chose to select participants who were not directly related to any

specific school. Instead, the study participants were selected from faith-based organizations using a snowball sampling procedure. This selection method minimized the likelihood that participants would feel compelled to sway their responses for fear of reprisal from their child's teacher or school administrator, thus maximizing the reliability of the participants' statements.

Chapter Summary

The purpose of this study was to investigate African American parents' perceptions of special education programs, teacher actions, and school policies that influence parent involvement of African American parents of children with special needs. A phenomenological design was used to explore the phenomenon of being an African American parent of a child with special needs who is involved or not involved in that child's education.

The setting for this study was the southeastern region of Florida. More specifically, participants were selected from churches and other faith-based organizations in the African American community. Study participants were African American parents of school-aged children with special needs. Their children all had current IEPs. The participants were engaged in semi-structured interviews where they answered open-ended interview questions. The IEPs were also used in the study to verify that the child did in fact have a disability and to determine the extent to which parent concerns were included and addressed in the child's IEP.

The interviews were transcribed and coded. The codes were analyzed for emerging themes, patterns, and concepts following a constant comparative analysis procedure. Additionally, the parent statement section of the IEPs were reviewed and

coded using the constant comparative analysis as well. Using both the interviews and the narrative parent statement section, IEP documents triangulated the findings to form themes from the codes that emerge from the data. Also, member checking with study participants help to establish the accuracy of their, thus adding to the study's accuracy.

CHAPTER IV

RESULTS

The researcher conducted this study to investigate the phenomenon of being an African American parent of a child in a special education program. It was the intention of the researcher to investigate these parents' perceptions of parent involvement and teacher traits, characteristics, or actions that either promote or inhibit their level of involvement in the educational development of their child with special needs. To answer these questions, study participants engaged in face-to-face interviews, during which time their children's IEP documents were reviewed and discussed. Data were collected, analyzed, and categorized as follows: Perceptions of Parent Involvement, Facilitators of Parent Involvement, Barriers of Parent Involvement, and Recommendations to Teacher and School Administrators to Increase Parent Involvement (see Figure 1). This chapter provides a detailed explanation of the results of the study, which are presented using the rich descriptive words of study participants. The quotes from the participants are presented verbatim to give an authentic voice to the mothers' lived experiences. Pseudonyms are used to protect the privacy of all participants, their children, and anyone with whom they are associated.

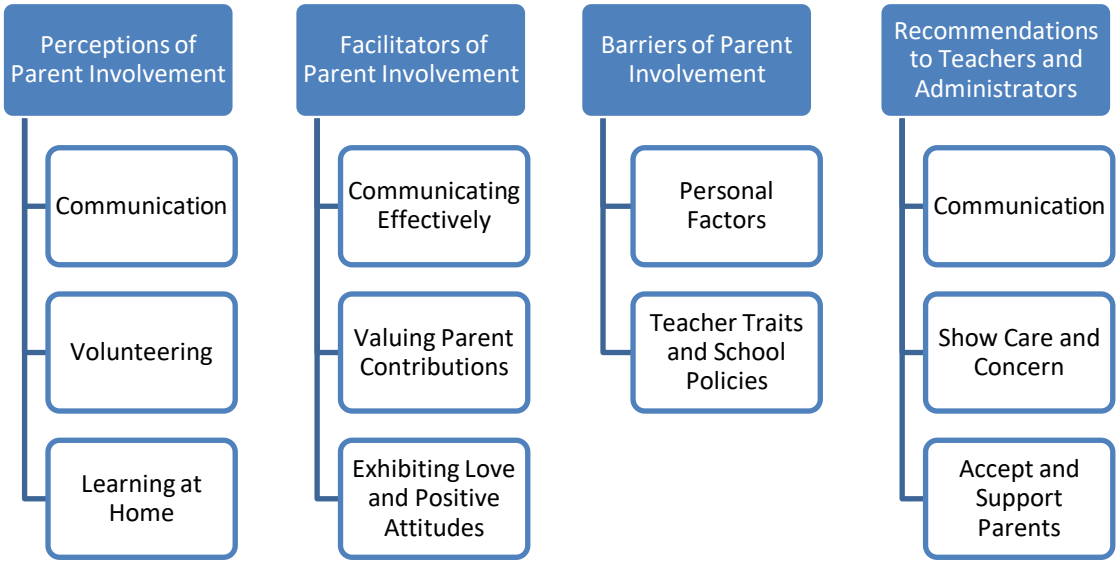


Figure 1. Organizational chart outlining the four major themes and sub-categories

Perceptions of Parent Involvement

When queried about how they would define parent involvement, the participants in this current study provided initial responses that were more traditional in nature (e.g., helping with homework, attending Open House events, attending parent-teacher conferences). However, as the interviews progressed, they revealed family activities and routines that may not be readily recognized as parent involvement (e.g., involving the family in prayer and devotions, toilet-training a pre-teen, teaching other family members about medication dosages in the event of an emergency at home or school, educating oneself about the child's special needs). According to Abdul-Adil and Farmer (2006), parent involvement "consists of any parental attitudes, behaviors, styles, or activities that occur within or outside the school setting to support children's academic and/or behavioral success" (p. 2).

Although there were a myriad of unique examples of parent involvement activities discussed throughout the interviews, they were predominantly exclusive to the individual child based on his or her special educational, medical, psychological, or behavioral need. However, when taken globally, the parents' perceptions of their parent involvement activities were based in three categories: Communication, Volunteering, and Learning at Home.

Communication

Sarah is the adoptive mother of Sabrina, who is in elementary school. Sabrina has emotional and behavioral disabilities. She attends school in a specialized setting equipped to educate and support children who have difficulty regulating their behaviors. Sabrina's siblings attend a traditional school and are not in any special education programs. Sarah explains how ineffective communication with Sabrina's teachers impacts the whole family.

> Actually when her IEP meeting was held, the teacher started telling me about negative behaviors that she was displaying. And I said, "Her point sheet [behavior chart] does not reflect what you're telling me." So, one of the comments was that we don't inform the parent of every behavior a child has. I have her siblings in the house… I know exactly what they do because they bring home a report. [If her point sheet is] not there for me to give them a consequence, then I don't know what she's doing at school. I already have behavior problems from the younger two because they look at it as if I'm giving her too much attention because of her negative behavior so now they're displaying negative behaviors, because they look at it as if I need to get attention I'm going to get it any way I want to get it.

Sarah further explains her frustrations when she receives Sabrina's report card and learns that the child is failing. She shares that this lack of communication on the teachers' behalf does not give her many options to intervene and try to help before Sabrina fails.

> So I said, “If she's doing something inappropriate then I need to know she's doing something inappropriate”. The PE teacher for example gave her, think it was C3D [grades for academics, effort, and conduct]… So it's unfair to give her that grade when I didn't know and I didn't have the opportunity to say, "Okay, let me be able to work on her behavior." Now, whether it improves or whether it changes I don't know, but give me the opportunity as a parent to be able to do that.
>
> So, I'm saying okay, during a meeting you want to tell me about her inappropriate behaviors but it did not reflect it on her daily report. I need to know if she's doing something inappropriate because if she did something inappropriate and she comes home and she sees her sisters or brother getting the consequence, she's not getting the consequence, she feels she's getting away with it.

Another participant explained how she was able to communicate her concerns and desires for her children only after she sought assistance and educated herself. Monica is the mother of 10-year-old Michael. Michael also has emotional and behavioral disabilities (EBD), and is currently receiving services in the self-contained setting at his elementary school. Monica explained that she has an older child who had also received services in the EBD program before he graduated from high school. However, when her older child was placed in the special education program, Monica was not aware of the many district policies and procedures. Due to her lack of knowledge, she was not able to advocate for her child, nor was she able to support him in making the most appropriate decisions for his future.

> That was my oldest child, he was born in 1997, he's 19 now. He got into the whole system with this IEP stuff when he was in like the first grade. No, I didn't have all the knowledge. Yes, I was tricked into the different programs. Umm… everything wasn't given to me. Like all of my options wasn't laid out on the table for me. And being a young adult, they just felt like, “Ok he being bad, he's doing this.” We just gon’ put him in self-contained. All of my options wasn't given to me. So me not knowing all of my options and I stick my son in this class and I’m saying like something ain't right. So of course I'm like, “Ok I got to do something.

After seeking information via The Yellow Pages, the Internet, and from acquaintances who were knowledgeable about special education programs, Monica

armed herself with information about the EBD program, various placement options, and schools that could adequately service her children. With this wealth of information, Monica was in a greater position to appropriately communicate her concerns with Michael's teachers, the ESE specialist, and the school administrators.

> My second experience was a breeze because it was no way in the world I was going to send my child to a self-contained class because they thought that he was umm EBD or whatever. …I knew that he didn't have a learning disability. And I read a lot so I'm looking for signs. I'm just paying attention to it all. I knew off the top of my head he was EBD. And umm they did, they was like… well 'cause his teacher was a guy and he would challenge the guy. The guy came [and] he said, 'You just need to sign papers so he can just be in self-contained because that's where he needs to be.' I said, 'That is not where he needs to be. We're going to design this IEP and you're going to do your part and I'm going to do my part and whomever will do their part and he's going to stay here and receive all the services he needs.'

Monica later shared that she felt more positive about herself and her ability to provide for her children. She said that she can share the information she learned with other parents who may be going through the same difficulties with their children.

In the above discussions, the importance of communication is highlighted. One parent, Sarah is a special education teacher. Although she was knowledgeable about special education and general school related policies and procedures, she experienced difficulties with communicating effectively with her daughter's teachers to provide the appropriate services. The other parent, Monica was not well-versed in her and her son's rights and responsibilities. Once she educated herself, she was then able to advocate for herself and for Michael, and make sure that he receives the appropriate services. She wants to teach other parents to do the same.

Volunteering

With a similar desire to help parents whose children are in special education programs, Nadia is another study participant with the desire to help other parents through volunteering. Nadia, the mother of eight-year-old Nelson, spends much of her time at work in a child care center and in her community, where she interacts with other parents of school-age children. Nadia feels that some parents do not prioritize education with their children. She feels that less important topics, such as sports and social media, consume the attention of young parents. However, she would like to educate parents on the importance of being involved with their children's education, as it will have a great impact on their futures.

> But then it goes to show you, when it comes back to that education, your 3-year-old doing the twerk but can she do some ABCs and 123s? Like they on Facebook talking about this Running Man Challenge. What about the Education Challenge with our kids? But it goes to show you, you go on Facebook Running Man Challenge, police officers they doing all this. But put something on there about the bible challenge, put something on there about education challenge what you gonna get? Zip. Know why? `Cause some people is not educated. There's not a main concern for them. But as you go back to it, the foundation of a parent, if you not involved with your kids and you not showing support to your kids' education, what you leave them to? Cause like now it's not… [shaking head]. …I want to be able to speak at his school. You know? Like speak to parents at his school. You know, go to like even like the PTA, we can start there….

Nadia feels passionate about sharing information with parents as early in a child's life as possible. As a worker in a child care center, she already sees the educational disparities in children as young as two years old. She feels that parents need to understand the importance of teaching their children basic skills at home.

Angel, the mother of eight-year-old Anthony, is equally as passionate about volunteering in her son's school. Since entering her new career with the federal

government, however, her schedule is more rigid and does not allow her the flexibility to volunteer as much as she did previously. She feels that being present in her son's school has a positive impact on his education, because it shows the teachers and administrators that she cares: "Let them see that we care about our children just as they care about their children". And because they know that she cares, she feels that they will provide him with a better education.

In the discussion, Angel reminisced on her own childhood and explained why her mother volunteered at her younger brother's school.

> But I think she did that [volunteer] because he, my brother, went to Orange School. Predominantly, at that time, it's not, it's kinda half and half now, predominantly White at that time. And I think she just felt, "Okay, I got a boy, I got a Black boy. They need to see my face. So, I don't wanna be that parent like..." She would say to me, "I don't wanna be that parent to come out to your school, and this is the first time that they're seeing me when you done cut up..."

Angel's mother was compelled to volunteer at her son's school because she felt that it was important for the teachers and school administrators to recognize her prior to any encounters due to a negative report or some other trouble. She felt that the teachers needed to know her character and that she raised her children to be well-mannered. Likewise, Angel expressed her desires to volunteer in Anthony's school so that the teachers and administrators could identify her as being a caring and dedicated mother. Because Anthony does not use words to communicate, she fears that if he is ever mistreated or if something does not go well in school, she would have no way of knowing: "I'm depending on somebody else to tell me, 'Oh he had a good day.' I'm looking, is there a scratch on him, the clothes he came in are the clothes he came home with? It was nerve-wracking. It's still nerve-wracking". It was important to Angel that she

developed a trusting relationship with Anthony's teachers so that they, too, would have his best interests at heart. Therefore, volunteering in the classroom or in the school would help the teachers understand how devoted she is to her son and that they should be just as devoted.

Like most of the mothers in this study, neither Nadia nor Angel was actively volunteering in her child's school at the time of the interview. However, both mothers were visibly desirous of spending time in their child's classroom or school. These mothers shared the same sentiment as the majority of study participants, who felt that volunteering was not only an avenue for being involved in their children's education, but viewed volunteering as a necessity for children's educational development.

Learning at Home

Gloria is another participant in this current study. She shares similar sentiments about the importance of teaching children basic skills at home. Gloria is a single mother of 11-year-old Grace, a child with Down syndrome in the Intellectual Disabilities program at her school. Gloria works extended hours as a hospital radiologist and has limited time with her daughter. However, Grace's well-being takes priority for her and for the rest of her family. Gloria shares that, although Grace's education is important to her, she is more concerned with her daughter's ability to care for herself and to become a self-sufficient adult.

> They were using the goals that benefit her in her classroom. They weren't concerned with our home. Their goals were scholastic I should say. It wasn't holistic. It was scholastic. So I'm like, ok if you need my daughter to do A, B, and C in order for her to be effective in your classroom and that's what you're basing your goals on, I'm not going to tell you to throw them all out. Because you're with her every day. And I want her to be able to, you know, thrive in your setting. I'm not concerned, I got my setting. My setting is wonderful, you know, she's great in

> mine. And I want her to be great in yours as well. So I don't dispute goals at all. Because this is what you... even if you look at those goals, there's goals about her pottying independently. And I'm like, "Child please my baby run her water, set the temperature, pulls out her panty liner, her panties, her bra. What are you talking about? Independent toileting?" (waves her hand dismissively)

Although Gloria's focus for Grace was not academic in nature, the skills she taught her at home are required for a life of independence, which is what Gloria desires for her daughter's future. She shared that in the past, she used to dispute some of the goals that the teachers set for Grace; however, she has since decided to allow the school to develop the goals that they feel are appropriate and she would continue to provide her daughter with the skills that she feels are necessary for her holistic growth and development.

Gloria is among several other parents in this study who have decided to relinquish the development of the IEP goals and services to the school and provide home learning activities according to what they feel is most beneficial to the child. Nadia is the mother of eight-year-old Nelson. Nelson has learning and speech disabilities. He also has difficulty remaining focused for an extended time period. In an effort to help Nelson improve his focus and attention span, she explained that she allows her other children to play while Nelson is completing his homework:

> **Nadia**: It's just me and his brothers and sisters. You know that's his support team. We know his focus span is short. So when it's time for homework, I make sure everybody playing. And you sitting to the table. I say, "Nelson you gotta focus. No matter what distractions you see going on you gotta still do that homework".
>
> ***Researcher**: And why do you do that? Why do you have that?*
>
> **Nadia:** Because he's in class, you're going to have distractions everywhere. So for him to stay focused, that's the only way he's going to stay focused. You got to learn how to tune things out and get your work done.

***Researcher**: Is that working for him?*

Nadia: Mmmhmm. He gets frustrated a little bit, but that's normal. He gets frustrated but it works. If Nelson wants to play, he gone get that work done.

Nadia also shared her method for helping her children understand that their job is to attend school and earn good grades. In turn, they will earn monetary incentives to purchase things they want. Her method also helps Nelson with his writing skills:

> [N]ow I have a point system. So Nelson clean up if he do a book report and he don't like to write. He's lazy when it come to writing. So Nelson do a book report and he write a paragraph about what he read. Nelson gets 10 points. At the end of the 2 weeks, because momma don't get paid every week, I add up the points and what it total up to a dollar per 10 points. So at the end of 2 weeks there go $10. So they gone work towards that. You know why? Because they want them $10. Cause they want to go to the store, they want the ice cream truck come down the street.

By helping Nelson learn to self-regulate his focus and attention in settings that are noisy and distracting, and by helping all of her children to understand that they must work to earn the things that they want, Nadia has gained control over what her children learn. Like Gloria, Nadia's desire is for her children to learn life skills that will help them become successful adults.

Perceptions of parent involvement is the first of four themes that emerged from the study data. When asked directly about how they defined or viewed parent involvement, these mothers provided responses that were typical of mainstream society (Epstein, 2002), including attending school events, helping with homework, and communicating with the classroom teacher. However, throughout the interviews, they indirectly provided examples of their individual styles of participation. These mainly centered on communication, volunteering, and learning at home.

Facilitators of Parent Involvement

The second theme that emerged from the data highlights areas that the mothers felt facilitated their involvement. That is, they engaged in rich conversation about how teacher, school administrator, and staff actions compel parents to engage in their child's education. Their statements were categorized as follows: Communicating Effectively, Valuing Parent Contributions, and Exhibiting Love and Positive Attitudes.

Communicating Effectively

According to Boyd and Correa (2005), "an important component to developing a positive relationship between parents and professionals involves effective interpersonal communication and emotional support (p. 3). In Epstein's explanation, effective communication is defined as school-to-home and home-to-school communications to increase understanding and cooperation (Epstein, 2002). However, ineffective communication systems often result in weak connections between African American parents and their child's school (Brandon, 2007).

In this current study, Communicating Effectively was the largest category that emerged from the research data. The majority of study participants referred to communication directly and all participants made at least a general reference to its importance. The abundance of data from this category was organized into three subcategories: Communication Methods, Proactive Communication, and Communication Follow-Through.

Communication methods. Study participants preferred various forms of communication methods ranging from conventional to contemporary. More than half of the participants preferred communicating with their child's teacher via phone. In fact,

teachers and other school personnel were referred to favorably by parents who received phone calls regularly, or who shared their cell phone number with their students' parents. For example, Tabitha, who described her son's teacher as caring, explained how she and that teacher communicated:

> So, she was really… she really cared about the kids. You could tell. And it was a total difference. Like he ya know, he was... he performed better. So yeah….Yeah, I had her cell phone, um she had my cell phone to call.... yeah.

Another preferred conventional communication method was sending and receiving written notes. When asked what type of communication method they preferred, participants responded that they prefer written communication almost as often as they responded that they prefer phone calls. Participants suggested that teachers could write notes in their child's daily agenda, on the child's quarterly progress report, or have the child to bring home. Betty shared that she prefers phone calls or notes rather than emails or electronic communication methods because she is not comfortable with using a computer. When asked if she has ever communicated via email, she responded, "I don't know how to get on that [laughs]. I don't really know how.... Really, I'm still learning that. But um.... Yeah [chuckles] …Either note or phone call."

Three participants shared that they either currently communicate or would be comfortable with communicating via email. However, all three of these parents commented that phone calls were preferred methods when communicating with their child's teacher. This is an intriguing detail considering that 10 of the 15 participants have careers that require at least a moderate level of computer literacy skills. Although they may use emails to communicate professionally, these study participants report that they prefer conventional methods of phone calls and hand-written notes.

Two parents shared their thoughts about using more contemporary forms of communication. One parent, Jennifer, reported that she receives much of the general information from the school's website. She learns about field trips, various school-wide activities, and the like at the website. She shared that her daughter's school promotes independence and responsibility in the students. Therefore, much of what is required of the students is detailed publicly on the website.

Tabitha also suggested a more contemporary method of communication. As other study participants also shared, she is not able to attend the district-sponsored meetings for parents of children in special education programs due to her work hours and long commute. Therefore, she suggested that the district makes podcasts or downloadable videos available to parents. Using this method, she explained, parents can then view these meetings at a time that is more convenient for them.

Monica suggested that one-on-one communication through home visits with parents would be beneficial for teachers to gain a better understanding of the family's personal lives and how their lives may impact the child in the classroom.

> Go to these people homes. See how, just do a home visit. Because sometimes that's all it takes. If you go and you actually go to a person house and you can see how they living and you can get a much better picture as to why they holding back. Or why they not coming around or you can talk with the parent and see what is it coming from. Like sometimes you can…you can pick it up like that. You can pick it up. I think home visits are very important.

Monica was the only study participant who suggested home visitation as a method of communication. Most of the participants suggested conventional methods such as phone calls and written notes. Some mentioned using emails, though this was not their preference. Other suggestions involving online methods were also proffered.

Proactive communication. Proactive communication is the second subcategory under the Communicating Effectively theme. Data analysis revealed that when participants referred to proactive communication practices, they described communication that occurred often, was delivered immediately, was positive in nature, and detailed the teacher's specific concerns and possible solutions to those concerns.

Participants explained that when teachers communicate often with parents, it shows that the teachers care for their children. Nadia shared, "You have some teachers from experience, they care about they job. It shows that they care about they students. They'll show favoritism but sometimes we tend to do that sometimes… The way your teacher communicate with you."

Keisha shared memories from her childhood about how she felt cared for, and how the teachers seemed to want the best for the students. She explained why communication is so vital to her:

> Communicate more with the parent. And people…we grew up thinking teachers they care about us. They wanted the best for us and everything. If you know that my child or any child is having a problem, reach out to the parent. You never know what you gon' get on the other end of the phone, you know, when you reach out. And then, like I said, when you got a parent like me that's constantly trying to reach out to you, respond. Even if you say I'm busy. Maybe within the next two weeks ok that's fine, say something you know. Don't be nonchalant about the situation. So I think in general, overall communication is the key.

In addition to communicating often, participants were appreciative of teachers who communicate in a timely manner. Jennifer explained that she and her husband informed their daughter's teacher that they expect immediate notification if her grades or performance start to decline.

> But when we meet with them, we also tell them we expect that she does...we expect for her to do her homework, to pass, to complete all of the assignments.

> And if she's not, we want to know about it. Ya know? If you're having any problems let us know so that we can deal with it. So I'll...ya know, we want to make sure that they know that we're on the same page that they're on.

She explained further, however, that, in her experience, most correspondence between the school and the parent occurs via email. Therefore, for those parents who do not have computer or Internet access, or for those who lack computer literacy, getting an immediate notification of student progress is not likely to occur. She shared, "...we're at an age right now where if you don't have access to a computer to be able to check, then there's nothing coming home…"

Study participants expressed a desire for teachers to communicate positive behaviors in their children. They welcomed phone calls and other forms of communication that were for the sole purpose of delivering positive reports. Betty shared that she rarely receives phone calls from her granddaughter's school that are of a positive nature. When asked if she would like to receive more positive calls, she responded,

> I would! I would. Mmmhhhmmm. Positive feedback instead of the negative feedback all the time, ya know? But her teacher, the um... the last class, the one that helps…the um...the History teacher, that's the...he's the one that always gives a positive [report]. Yeah.

Georgia explained that she received phone calls from the teacher to discuss what her son, Gary, was not doing or to inform her of his negative behaviors. However, she would have liked to receive phone calls that were positive, constructive, and informative of his abilities.

> I would prefer sometimes...uuu... calling. But not only with the bad stuff, and it was mainly he's not doing this, he's not listening... uuuu, ya know… whatever, whatever. I would prefer...I would have preferred that it would be mixed with uuu...ya know… we're working on this... uuummm... he has some good strong points here and ya know, but we need to work on this... and... leave me with something positive.

When communicating with parents, some study participants explained that it was important that teachers provided detailed information about their child's progress and any areas of concern. And if there were areas of deficit, participants wanted the teachers to suggest possible solutions. As a school administrator, Ivory shared her thoughts about what was appropriate professionally, but then, as a parent of a child with a disability, she also had a personal perspective.

> And I feel like as a teacher, we need to always give strengths, like a sandwich-effect. We need to make sure we start out with the strength, and at least get one layer of weakness, don't give 10 layers in the same conversation, but one layer of weakness, and then come back with another strength…

When explaining an interaction she had with her son's teacher, who she described as phenomenal, Ivory shared:

> Excellent teacher. This is when we started seeing everything. This teacher, phenomenal. "He's doing this, this is what's going on. I don't know why he's not understanding." And I said, "Pinpoint, tell me what it is, so I [will] know." She gave me all the results and everything. We had meetings, we had conferences. She was thorough, amazing.

In addition to voicing their opinion about their child's teacher, study participants also shared their views about school administrator being proactive in their communications with parents. Keisha expressed frustrations about school administrators communicating with parents only during the times that the state tests are given. She shared,

> Don't wait til testing time to send all these voice recordings and all this type of stuff. I don't want to hear that then. 'Cause you ain't call me no other time. Now you want everybody here testing. Make sure they get a good night's rest, make sure they eat breakfast. I don't want to hear that because they do that anyway regardless, so I don't need you to remind me of that. But if you saying, "Ok parents, come on let's do a bake sale, parents let's get out and raise money for the school, the kids want to do this or" you know? More interactive stuff, that'll be

> good. As far as the administrators 'cause if I'm understanding the principal is the one that control the school, right? You could have got the parents involved in so many ways. But no. Y'all wait til testing time come to send us all these voice mails.

Monica also explained that she felt frustrated when both the school and the district neglected to notify her that her children will be attending another school due to the change in the school boundaries. She was particularly upset because her child's special education services would be affected by the changes.

> Prior to last day of school, I got a letter in an envelope with my seven year old daughter with a copy of his um IEP goals telling me that on 6/9/2016 they will be withdrawn. And their home school will be ABC Elementary. And I called the region and they was like, "Oh because the district, the boundaries changed." But they have been there forever, like ok, I understand that… Yeah ok fine the boundaries changed but if that was going to be the plan, don't you think in November, October you should have given us the opportunity to apply for the magnet program? If we wanted to keep our children, there? Nobody gave us that opportunity.

With respect to children in special education program specifically, study participants had several comments about teachers being proactive in their communication with parents. In general, these parents wanted to receive reports about their children's progress more often than what is typically provided school-wide. Tabitha stated:

> If they communicate successfully to the parent, if they inform the parents about everything that's going on and not, ya know, wait to be reactive... ya know. They need to be proactive. At least once a quarter like, in the beginning of the quarter, right, or beginning, middle, and maybe end, ya know, if they reach out to the parent, not just the Interims [mid-term progress reports]when you have a special needs child. Not just the Interims, but just say half the time before you get to the Interims.

Monica shared that Michael's teacher would send weekly or daily updates about his IEP reading goals:

> Yes, he has reading goals. And like I can tell like clearly I can tell and every week this lady would send me a email or even every other day. Michael is this and Michael is that and from the last IEP he has improved. Like she sending me stuff like clockwork.

Keisha expressed her desire for the teachers to be more current and specific about her daughter's abilities when they communicate with her at IEP meetings. Rather than rating her abilities based on numbers and scores, Keisha was more interested in reviewing Keona's actual work samples in her class folders.

> …when they together it's just based on this print out and they little laptop they got sitting there in front of them. But why you can't interact with me? Let's go through Keona's work folder. What she's been doing with you these last couple of days. Show me where she started from and where she at now. That's how I would like to see it.

Regarding proactive communication, study participants were vocal about teacher actions that were disconcerting. Many felt that communication from the teacher starts after the child has already failed or has already gotten into some trouble. Tabitha explains her frustrations:

> For instance, like she could send home the work that is... ya know, that she's giving him. She does periodically send home like the failing test scores or like the failing test papers. She send it home and say, ya know, "Go over this with him at home." Ok, but he's failed that. So what about prior to him failing, if you seeing him not doing well, what are we doing before he gets to the point of failing? Hello. That's my concern. That's what I've been saying all along. Why wait until he fail to just do something about it?

When conflicting or incomplete information comes from the school, for example when the report cards contradict what the teacher has reported, parents become confused and discouraged. Keisha explains that the teacher continues to tell her that Keona is doing well, but statements on her report card indicate that she is working below grade level.

> Keona is doing good from what they are saying. But like I say, in her comments it's below grade level. So she's really not doing good to me. You know, I don't know if I should be excited or not but, I don't think she's doing good. Because if she was doing good, it wouldn't say she was below grade level. So I'm just at like this school year almost over I'm relocating. I'm gonna try something different, that's where I'm at right now.

According to study participants, unresponsiveness from the teacher or other school personnel was equally as frustrating as inadequate responses. Georgia explained that she received no feedback or assistance from Gary's school when she wanted him placed in a different setting. When asked if anyone at the school assisted her, she responded, "No, not from that school. That...that you have to do on your own."

Keisha and her mother have been trying to schedule a parent-teacher conference for a few months. Every time they reach out to the school, they are given various reasons why the meeting cannot be scheduled. Keisha is also concerned that racial stigmas will be attached to her if she expresses her anger and frustration. She has considered relocating to a different state to get better educational opportunities for her daughter.

> I reached out to the assistant principal. Ms. X knows me. She knows me very well. With the no correspondence from the ESE teacher or her main teacher. It's always, "Ok we're going to deal with it. Let's set up a parent conference meeting with all of us." Ok I'm waiting… I'm waiting, `cause I'll take off if I gotta call in sick. I'm taking off. I'm waiting… I haven't gotten nowhere. Nowhere.
>
> Like I said, I had my mom try it today. So she said they wasn't available. Whoever she spoke to in the office said the ESE teacher… she said they wasn't umm available. I don't know what to say about this ABC school [Pause, Looking through phone text messages]. Umm… she text me at 1:13, "They wasn't available. They was supposed to be in a meeting or something."
>
> *Researcher: So how do you, how does that make you feel as a parent?*
>
> Agitated. Cause if you go out there and show out, you just a Black parent acting a fool. You done tried all your resources to be professional, but you ain't getting nowhere. So like what can you do? You on they terms really, you on they terms.

Tabitha's frustrations occur when the teachers are not forthcoming without being prompted. She feels that if he does not reach out to the teacher constantly, then she will receive no information about Tony's progress.

> She'll respond when I…when I reach out to her…and say whatever, then she'll respond back. But she's not being proactive. Like…she's not telling me ahead of time. It's almost like she doesn't care. Like she…she just push him to the side, like ya know, it doesn't matter. And then when I say something, then all of a sudden, "Ok, I'll pull all his stuff", ya know.

Communication follow-through. Communication Follow-through is the third subcategory under the Communicating Effectively theme. One study participant shared a comment about a positive experience she had with her granddaughter's tutor. Betty explained that Breana was having some difficulty in her science class. She happened to mention it at church. One of the church's choir members agreed to come to Betty's home and tutor Breana. Betty explained that he came over, tutored Breana, and even stated helping her regularly with her homework. She explained that this is the type of behavior that she expects from the teachers at Breana's school; however, more often than not, they do not follow-through with their promises to help Breana.

> [Indicating that this is what the science teacher said] "Oh, oh, oh, ok. We can go online and I would give you, ya know, I would give you the website she can go to help her, and she can do it at home on her own pace", ya know, and stuff like that. Nothing! I ain't get nothing. He said he was gon' email me, I ain't get nothing from this man.

During an IEP meeting, Ethel was also promised that someone from the school would assist her in securing a tutor for Edward. Not only did the school fail to follow-through with a tutor, but no one from the school ever contacted her to follow up with the recommended IEP services.

> I remember one of them telling me they would get back to me on some people maybe that could possibly help me [find a] tutor, and not getting back to me. Then me getting back with them and people not following through.

Betty also shared that she would like the teacher to follow-up with her after meetings or phone calls to let her know whether or not the strategies, recommendations, or interventions that they discussed were being effective.

> "[I'll have] an idea of what's going on, or what she weak in, or what she struggle in, and how she's doing. "She's doing very well because you doing THIS. Tutoring is really helping her", ya know, let me know, ya know. Especially in the Science class. That's what she struggle in. "Ok, the tutoring is really helping her. I can see a difference in her", something like that. That's what make me get involved even more.

Tabitha also her shared her frustrations with her son's teacher. During Tony's IEP meeting, the teacher agreed that she would report his progress of lack of progress to his mother. The teacher did not communicate that there were any concerns. Tabitha felt that he was finally making progress. She was disappointed when she received his report card and learned that he was failing.

> …and the teacher that he has is not doing that, like she's not cooperating with the plan. She's supposed to, ya know, notify me, inqu-... um, she's supposed to correspond with me with, ya know, [if] his progress is decline whatever. I didn't know anything until, like, his progress reports or something. Like I'm thinking he's doing good 'cause I didn't hear anything, and then all of a sudden, it was like, he had Ds and Fs, ya know [sighs and chuckles].

Study participants shared that they were reaching out to the teacher because they knew that their child needed help. They were willing to get involved, but the teacher's inactions and lack of following through with requests did not support them in their efforts. Keisha had a similar experience with Keona's teacher. This mother explained that she had asked the teacher for a conference to discuss her daughter's poor academic growth. After several days of asking the child if her teacher had given her a response and

the child responding that the teacher had not, Keisha wrote a note in the child's agenda book. The response she received from the teacher was, "I get to work at 7:30." The mom explained that Keona has to be in school by 7:00 to eat breakfast and report to class by the last bell, which rings at 7:25. So the teacher's response that she gets to work at 7:30 did not make sense. She never got an appropriate response to the question of scheduling a conference with the teacher. This is an example of what makes her frustrated when trying to get involved in her daughter's education.

> Yall need to communicate better than what yall do. Yall really getting on my nerves. Cause I'm reaching out to you and you're not responding back to me. Then when you do respond it's not the answer that I want to hear. Because we not solving the problem and we not getting nowhere. So I'mma need yall to do a whole lot better.

The parents in this study clearly articulated their desire to develop a positive relationship with their child's teacher. Through effective communication, the participants expect teachers to provide various avenues of communication, whether traditional or contemporary. They also expect that educators contact them early and often in an effort to prevent future failure. Further, these parents appreciate when teachers and school administrators follow through with suggested plans of action. Communicating in this manner helps these parents feel more connected to their child's teacher and school.

Valuing Parent's Contributions

Capital, or worth, "contributes to a person's symbolic and material wealth, status, and power" (Trainor, 2008, p. 150). Social capital (assets acquired through social networks) and cultural capital (knowledge, skills, and behaviors shared within a cultural group; Wilson, 2015) are two forms of capital that are significant in discussions about parent involvement (Martinez-Cosio, 2010; Trainor, 2008; Wilson, 2015). Because

members of the dominant culture generally determine the importance of one form of capital over another, as well as the hierarchy within the individual forms of capital (Martinez-Cosio, 2010; Wilson, 2015), parents in marginalized groups may be seen as deficient in their abilities, including parent involvement (Trainor, 2008). When parents perceive that teachers and other school personnel do not value their abilities and attributes, those perceptions may lead to feelings of rejection and discontent with the school (Martinez-Cosio, 2010; Trainor, 2008; Wilson, 2015), thus adversely affecting parent involvement.

In this current study, Valuing Parent's Contributions was another significant category that emerged from the research data. Study participants articulated their thoughts about how teachers and other school personnel either recognized or ignored the value they provided to their child's academic development. The data review process revealed two major subcategories: Value of Individual Strengths and Value of Collective Strengths.

Value of individual strengths. Parents in this current study voiced their perceptions of being judged based on what teachers and school personnel assumed they could not do, what they would not do, or what they were not already doing. Specifically, parents felt that it was assumed that they could not engage with the school or the child because of the parent's level of education. Secondly, participants felt that some teachers were reluctant to provide additional resources because they assumed that parents would not use the materials or resources. Furthermore, parents shared that teachers inaccurately assumed that they were not already involved with their child because their type or involvement was not deemed important or recognized at all.

Keisha welcomed opportunities to be involved in her daughter's school. In fact, she shared ideas about assembling parents to fundraise for school supplies, field trips and other necessities. She also shared her desires to be more involved with her daughter's special education program. She has been trying to schedule a parent-teacher conference so that she can gain knowledge and have a better understanding of how to help her child. However, she felt that school personnel continued to overlook her and did not value her desire to be involved based on her level of education or what they assumed that level to be.

> Because they don't feel that we are as educated as them. We might not have all the degrees but that don't mean we not educated you know. Some smarter than others in every race. But you got some of us who are willing to take that time out and learn like what's going on? Teach me, show me what can I do to assist.

She shares that, even without a college degree, parents can still contribute to their child's academic success. Schools should not assume that they have no value because they have no degree.

Isaac's mother, Ivory shared a similar opinion. She maintained that teachers and school personnel should be equal in the way they treat parents, regardless of their perceived level of education or intellect. Furthermore, she said that schools should be clear and up front about the types of involvement they need. According to her, teachers should not make a predetermination of who they will or will not share information with based on what they assume the parent will or will not do. She shares:

> Explain to them, make it visual, what type of involvement you're looking for as a teacher." [The teacher should explain to the parent] "I would like for you to call me. I would like for you to interact. I would like for you to sign his homework, her homework. Let me know that you have the homework. Sign a weekly progress. Give me a brief description of what's going on, so I can make sure that we stay in contact." Give them, maybe, some choices, 'cause maybe parents don't

> like to talk on the phone so, "Could you just put a check that you saw this?" Give them multiple choices of what they can do.

Give everyone the same information and allow the individual parent to determine what he or she will or will not do. However, this choice should not be unfairly taken from the parent before he or she has had the opportunity to know what is required or expected.

Monica, who rated herself as a five (highest level) in parent involvement, shared that she engages with her children in various activities outside of school. However, the school may erroneously view her as being limited in parent involvement based on their concepts of parent involvement. She describes her activities with her children:

> I'm at all meetings. When my children were in Head Start, I was umm the secretary, the treasurer. I'm helping with fundraisers. I'm there volunteering when I could. Umm, my children are active in sports. I'm there at practices, I'm there at every game and I don't drive. …We have family meetings once a week, twice if needed. We cook together, go to church together, start and end each day with prayer.

She commented that, at times, schools develop their opinions based on the child's special education label. In her case she feels that because her son has an emotional and behavioral disorder, the school has judged him as being a trouble maker. Likewise, she feels judged because she is a single mother of eight children.

> Being a young adult and you hear people say, that girl got all them children. But that's ok. That girl got an education and she got a brain. No I didn't have my high school diploma when I had my children. I actually went back to school and all of that. And like I just make it work. …I know for a fact I don't want my children to slip through the cracks and I don't want them to struggle like I had to struggle or anything.

Monica feels that parents should be supported and not judged based on what the school assumes that parent is not doing. Parents may do many things with their children or they

may not; however, all parents should be seen as valuable regardless of their perceived contributions.

Study participants also discussed their thoughts on how race and socioeconomics affect the way parents and children in the African American community are valued by those who are privileged and hold power in society. Ivory offered her opinion that teachers prefer to teach children who are more affluent because those children require less effort and resources from the teacher. She gave a scenario of two children from different races and opposite ends of the socioeconomic continuum. Andrew is a White child whose family is affluent. Johnny is a Black child whose family is not financially secure.

> Okay. Let's say football. Johnny is African-American, Andrew is White-American, Caucasian-American. Johnny and Andrew have the same skills, they can run fast, they can catch the ball wherever, but Johnny is gonna have a problem 'cause he can't afford the uniform, 'cause his grades are lacking, his mom can't bring him to the practices, he didn't eat last night, he didn't have breakfast this morning, he had to watch his little sister and brother, his mom and dad or mom and boyfriend or whomever, just had a fight, and now, he can't deal with it, so he's gonna lash out on the field instead of showing the skills he need.
>
> Andrew on the other hand, he's gonna eat a well-balanced breakfast, he's gonna have a great dinner, he's gonna have a great night sleep. The nanny's gonna bring him if the mom can't come. His parents are together. He can speak to his dad about male situations or a male figure can be in his life. His mother is not as stressed because she has a support team and a support group. If Andrew has a problem, they can afford a counselor, they can afford a therapist, he can go to a mental clinic and get some help.
>
> Johnny will take more work because that means coaches or assistant coaches or whomever is around, they gonna have to pull out of their pocket to help Johnny do what he needs to do. They're gonna have to have a grant writer to write up something just to get money... Let me take Andrew, 'cause Andrew is coming well-prepared. We don't have to do anything to help Andrew. He's coming well prepared. But then Johnny may have been the one to take them to the top, but it's too much work to have Johnny on a team. "Then we just keep Andrew. We'll take Andrew, because... [participant's words ended as she shook her head]

In Ivory's example, the coaches were reluctant to take on the student with less social and financial capital. He would prove to be too much of a responsibility. Ivory felt that this was a typical situation that happens in classrooms every day. Teachers who highly value financial and social capital tend to devalue parents who are perceived as financially and socially bankrupt. In turn, parents who do not feel valued are less likely to engage with their child's school (Trainor, 2008; Williams & Sanchez, 2012).

Conversely, Gloria felt that teachers respected her because she is an African American woman who is perceived as intelligent and financially stable. Because the dominant culture views her as atypical, she feels that it works to her advantage.

> You know what, let me say, me being African American *wows* them. I get that, I get that some of the respect they have for me is based on she's a young Black woman. And I see her come by here in her uniform and she comes and spend time on her way to work. And I've got some of their respect based on that. Brown skin. And it's like, no I have a child and I work very hard for one. And I get their respect sometimes based on that and I see it in them.

A careful review of the study data revealed some positive behaviors from teachers and other school personnel as described by the study participants. These parents felt a sense of worth and self-efficacy when teachers listened and followed their suggestions.

Betty expressed feelings of personal satisfaction when Breana's teacher followed her suggestions about how to engage the child. Based on Betty's recommendations, the teacher made sure to give Breana various activities throughout the class period to prevent boredom and negative behaviors. This would help her to stay focused and finish tasks. The ESE specialist also provided a platform where Betty could participate in making educational decisions for Breana. Betty conveyed that she felt good about herself to be included in her child's education.

When Grace started kindergarten at a traditional public school, Gloria felt very unsure about her daughter's ability to progress in the new setting. She was also uncertain of the teacher's ability to care for Grace in light of her medical condition.

> And then, she was so understanding in that she would let me bring Grace to school and stay in the classroom for an hour [Laughter]. So she gave me those freedoms so that I could, you know, do the separating that I need that was healthy for me. Cause I was still very fragile, emotional. Like, like emotionally those were some of the most unstable times in my life.

To her delight, the classroom teacher allowed Gloria the space and time that she required to reduce her own separation anxieties. Gloria felt that her position as Grace's mother was valued.

Value of collective strengths. According to Yosso (2005) *Familial Capital* refers to cultural knowledge among members of a community and assumes a commitment to the well-being of that community. In addition to including members of one's immediate family, familial capital incorporates members of the extended family, and can also include those in sports, school, and religious settings. Benefits to obtaining and maintaining familial capital are the ability to connect with others, bond around common issues, and lessen one's own burdens (Yosso, 2005). This is what Goss (2015) refers to as *Village Consciousness*. In this current study, participants discussed the impact of their "village" on their parent involvement activities. Their experiences are organized in three sub-categories: The Roles of Village Members; Teachers as Village Members; and Giving Back to the Village.

Roles of village members. Because, as parents reported, they have a substantial responsibility, they often solicit assistance from their immediate and extended family, friends, and associates. Gloria discussed several instances when she relied on the help of

her aunt. This family member was instrumental in providing respite support to Gloria, as she was well aware of Grace's medical needs, including her medications. Additionally, this aunt was comfortable with Grace's disability and supported her strengths and challenges.

> … [M]y Aunt Gina, she's one of my aunts that I entrust with the medical side of things. So she knows about Grace's medicines and stuff like that. So Grace can go to her house and spend days. This one aunt knows the medicines, knows the doses, knows the frequencies, have clothes at her house, has shoes at her house, has everything Grace needs at her house.

Gloria further explained that this same aunt is more than an occasional relief for her. Because Gloria is a single mother and Grace is an only child, providing the type of family structure that Gloria wants for Grace is not possible. Gloria explains that exposing Grace to a family with a mother, father, and children was very important to her. She also wanted Grace to have the experience of growing up with siblings. Gloria's aunt, uncle, and cousins provide that family structure that Gloria desires for her daughter.

> So it was important for me to cultivate that relationship with my aunt and my uncle, their children so that they have that… Grace has that experience. 'Cause I can't give that to her here. So sometimes I pick Tika and Tony [cousins] up and we go to the movies. All on me. Because it's like I'm going to cultivate a relationship with you guys so that when Grace needs you, you're going to cultivate that with her, and they do.

Monica also explained how she and Michael were supported by her mother. When Michael was having a particularly bad day, or when he experienced conflict with his teacher, he would call his grandmother to pick him up from school.

> And it was to a point where he would call my mom every day at one. Cause I'm all the way here. And he'll be like, "Come pick me up I'm sick". So my momma would actually go and pick him up because that's the class where he got in the most trouble at.

Monica shared another incident where she had to solicit the help of her sister and brother-in-law. In this case, Monica's other son had run way from the teacher and out of the building. The school alerted her that he had run away. She immediately called her sister, who worked closer to the school and would get there faster.

> We can't find him. I'm like, "You can't find him?" And they was like ohh all kind of stuff. So I was like, "Oh my God, Jesus Lord." So I called my sister 'cause she works at Miami Children's. So she called my brother-in-law and was like since you close to get there, and I'll meet you there.

Not only do "village" members help with respite care and unforeseen emergencies, they can also be instrumental in providing support to parents with their children's school-related matters. Henrietta relies on members of her immediate family to accompany her to her daughter's IEP meetings. In her particular situation, Henrietta's mother, who is a teacher, attends Harmony's meetings and supports Henrietta with a better understanding of the IEP goals, Harmony's services, and other related factors.

Besides being dependent on immediate and extended family members, study participants also relied on the help of school employees who were not directly connected to the child academically (i.e., child's teacher, principal, therapist, and the like), but were connected to the child through acquaintanceship with the child's family. These "village" members are essential to the parents for various reasons. Some have a deeper understanding of school policy and day-to-day operations, and this can be beneficial in helping to make educational decisions. For example, a friend of Betty suggested that she consider enrolling Breana into a charter school: "She say, 'Well Betty…won't you put her in a charter school? I think she'll get more help there.' And that's when I, ya know, seek the charter school."

Another reason why parents relied on acquaintances who were school board employees is their knowledge of special education programs and policies. Some parents indicated that they needed help navigating the school system to get evaluations and/or services for their children. Some felt frustrated and sought the assistance of those who were special education teachers, specialists, or service providers. Ethel tried to solicit a tutor through the school system. She was told that they could assist, but after waiting and not getting a response, she asked a close family friend who had experience with teaching children with special needs.

> She was a girl that went to school with my husband …And she taught umm kids that had… severe learning [problems] like with autism and umm she used to tell me that umm Edward… kids learn in different ways and that she really thought that he was more of a visual kind of learner. And so when she would tutor him, she would umm the way that she would present things to him was so differently. Like sometimes she would even take him outside and they would do stuff on the sidewalk. I think she was probably like really the most positive influence on him to really help him get to a better understanding of things.

Monica reached out to two different people who were both helpful in educating her on her rights and on the evaluation process. Because they explained to her what the proper procedures were, Monica was better equipped to advocate for her son's needs at the school.

> So and I'll never forget this lady name either, Ms. X, she was the lady that came to my mom's house. And we sat and she said, "No, no, this is not how it go, and they shouldn't do this." And I also got my friend saying, "They didn't offer you this." So we started, I started setting up meetings and going and when they seen that I was on the ball, it was like, "Ok, we gotta step back."

Teachers as village members. Although some participants relied on the help of school employees who were not directly connected to the child academically, some also relied on their child's classroom teacher, special education teacher, school administrator,

therapist, and the like. When explaining the child's teacher and his or her relationship to the child, parents used phrases such as, "member of the family", "part of her team", and "part of the village." Parents who shared these sentiments seemed to trust their child's teacher, and there seemed to be a mutual respect between teacher and parent.

Nelson's mother, Nadia shared that, although teachers are held accountable and have responsibilities to the child, parents must also do their part. She sees herself and the teacher both as part a community.

> You know, so you hold these parents accountable for not coming in for meetings, not being involved, not communicating with the teacher. `Cause the teachers can't do it by themselves and we can't do it by ourselves. It's like a whole community. Like it say, it take a whole tribe to raise a… I'm saying it wrong. It take a whole village to raise a tribe. That's what we have to do.

Monica indicated that she did not agree with her son's school placement. She felt that the school was being unfair to him and they were not considering his behavioral disability in their decision. However, after witnessing Michael's growth and the social connections he was making, she knew that Michael was in the right place. She was happy that they helped her make the right decision.

> Um even in middle school, he ended up going to XYZ Alternative School. I tried to avoid that, but that was the best situation because he met some really important people there that's really important in his life now today. And like all those trials and tribulations it just molded him. You know how it says it takes a village to raise children? It's true.

Giving back to the village. Parents were enthusiastic about their own responsibility and membership to the "village." Some expressed an interest in giving back to their community by educating other parents who may have a child with special needs. They recognize the importance of having the support of those who understand the educational system and how to navigate through it. Their suggestions ranged from small

ideas like joining the PTA and carpooling to district parent meetings to large-scale decisions such as becoming a motivational speaker to educate other parents. Tabitha stated that she shares her experiences with other parents and lets them know that they have to be persistent in order to get the proper services.

Nadia wants to become a motivational speaker to empower other parents. She cannot attend many district meetings due to her work hours, and she knows that other parents experience the same hardship. Therefore, she would like to learn as much as she can and then share that information with the parents who cannot attend the district meetings.

> Now with the job I have now, I don't leave until 5:30. So if they have something [district meeting] at 6, I can't get there. Sometimes it make me mad and upset. …I want to be there because that's involving my child. Not only him, that can give me the knowledge to help other people who have the issue that I'm going through. …I want to be able to speak at his school. You know. Like speak to parents at his school.

Tabitha has a desire for African American parents to come together to support causes that deeply impact her community. She suggested that if many parents come together in protest of unfair policies or decisions that present a hardship to members of the community, then perhaps their collective voices will effect some change.

> If we stood together as a unit and raised our voices, did a petition, bombard theses school boards for equal opportunities, then I think it would bring about change. But you can't even get us to come together for PTA meeting. So how are we gonna voice an opinion to a school board? It has to be in numbers. When it's a problem in other areas, they voice theirs... they go to the school board, to the president... You know what I'm saying?

Valuing the capital that parents contribute to the school, either directly or indirectly, can have a positive impact on the parents' willingness to be involved in their children's education. Here, parents shared how valuing their individual strengths as a

parent and their collective strengths as a community deepens their desire to participate in their child's education. Schools and teachers who want these parents to be involved must value their contributions.

Exhibiting Love and Positive Attitudes

According to the authors of a study investigating the relationship between parent involvement, student behavior, and classroom teacher's emotional support, "Teachers who are emotionally supportive in the classroom can be expected to interact with and engage with parents in qualitatively different ways than teachers who are less emotionally supportive" (McCormick, Cappella, O'Connor, & McClowry, 2013, p. 280). Parents view emotionally supportive teachers as more collaborative and respectful. This viewpoint may draw parents to the classroom more often.

Likewise, McDermott and Rothenberg (2000) found that African American and Hispanic parents ascribed more favorable descriptions to teachers who they perceived as loving towards their children and respectful towards parents. The parents in their study also esteemed teachers who had good communication skills and communicated positively and frequently through notes and phone calls.

In this current study, Exhibiting Love and Positive Attitudes was the third major category that emerged from the research data. Similar to the parents in the two aforementioned studies, the parent participants in this current study shared more favorable thoughts and remarks about teachers who they perceived as loving towards their children or to them. The data review process revealed three major subcategories: Emotional Support Towards Parents, and Emotional Support Towards Children.

Emotional support towards parents. Teachers who displayed emotional support towards parents were described by study participants as loving and understanding. One parent, Gloria, compared her behavior at work to how she expects her daughter's teachers to behave at work.

> Like I get paid to take an x-ray. I do not get paid to get on one knee and say, "Hi sweetheart, how are you? What happened, you got a booboo?' That's not what I get paid to do. My job is to effectively get the x-ray. And so it's my personal convictions that says, "Hi sweetheart. What happened, you got a booboo? Can we take a picture? We take a picture, we can fix your booboo." So it takes an inner conviction from you that says this is my job description, and this is what I'm going to bring of me to it. And if you have a teacher that don't want to bring me to it, your convictions, your character, your love, your understanding, your empathy, your sympathy, I don't think you're ever going to get parent involvement.

Other participants described the supportive and loving ways that teachers communicated with them. Ivory, a school administrator, shared how she creates a positive environment for her students' parents.

> …but what I would do is I would send out letters with the students to let the parent know, "I'm here for you." I would mail the letters as well. I would send home notes. I would ask for cellphones, I would ask for things I could communicate with, people I could communicate with to get them involved.

Tabitha expressed gratitude for the way one of Tony's teachers communicated with her.

> Like that White teacher... I think that she was just special because she cared, like she went all out, out of her way. Like she didn't have to do the things [she did], ya know? But she... she took the time to do it. She didn't have to communicate with me as much as she did either. But she wanted to see him succeed.

Betty referred to the special education specialist as "a lovely lady." She explained that, during a meeting with her, the specialist talked about her family, and she made Betty feel comfortable and positive. She described the conversation as "real nice."

Not only did the study participants discuss the respectful and loving manner in which some teachers communicated with them, they also described the qualities of an emotionally supportive environment. Although she did not provide much detail, Henrietta said that feels welcomed in Harmony's school and classroom. Jennifer shared similar thoughts about her daughter, Judy's school and class. She described the murals of the walls of the school as warm and inviting. She further stated that the school administrators are welcoming. Jennifer did, however, take notice that her daughter's school did not have pennants of any historically Black colleges and universities (HBCUs) on display where all the other colleges were displayed. Nonetheless, she still felt welcomed at her daughter's school.

With respect to the special education program specifically, study participants shared their thoughts about how teachers and other school personnel could be more positive and encouraging in their interactions with parents. Ethel suggested that, in order to make parents feel hopeful, teachers should explain that special education is not punitive, and they should clearly delineate what parents should expect. She also suggested that teachers display positive energy and confidence that the children will progress and succeed academically.

Georgia gave a very emotional explanation of her experiences with her son's teachers and how their insensitivity affected her.

> Don't make the parent feel like, oh...oh...oh you ain't doing this, you ain't doing that, you ain't doing this, you ain't doing that. It's like telling somebody, ok, you don't walk in my shoes, but walk in my shoes.... [W]orking with kids that have special needs, is... it has to come from the heart. Ummm, it has to come from the heart. If it's not coming from the heart, you get frustrated, because things are not... your typical developing kids (unintelligible) frustrated, and ya know, angry, and

> umm... give up. But as a parent, it's not easy, but each day, you learn. Each day you go, ya know... it's not easy…it's not…we get frustrated too.

Emotional support towards children. When teachers are emotionally supportive towards parents, parents feel encouraged to participate in their child's education. Likewise, when teachers and other school personnel are emotionally supportive towards children, parents have positive feelings towards the teacher, which will encourage the parent to become more involved.

One way that teachers or other school personnel display genuine care and love for the students is by communicating positive aspects of the child's development, while not focusing on only negative aspects. Betty described how the school psychologist was more concerned about what Breana is able to do, while the classroom teacher focused only on what Breana was not able to do.

> [Indicating that the school psychologist was speaking to the classroom teacher] "We don't want a... the negative. We want to bring her to the positive, and try to help her. And how can we help her in school, not... not dwell on the problem, ya know the negative." She said, "We know, we know, we got all that. We're here to help. So how can we help her?" And she kept going back to the problem and all that. And she say, "Ok, we're done with you. I'm just gonna talk to the parent right now" [Chuckles]. [She] got upset with her.

A significant attribute of emotional support that study participants discussed was the teacher's willingness to do more than what was required or expected. When teachers went out of their way to assist students, parents regarded that teacher as loving. Tabitha shared the following:

> Ya know, so he… she love him, and she was like, "Oh "Tony, you can do it." She always push them and stuff. So he... it was good like she was veeeery nice. Even after school was over she'd call up the parents and she was like, Oh I'm gonna have a party ya know at the center, so all the parents like she wanted to like say goodbye to the kids or whatever first. So, she was really, she really cared about

> the kids. You could tell. And it was a total difference. Like he, ya know, he was... he performed better. So yeah.

Betty also mentioned that, before Breana was evaluated and placed in special education, the special education teacher took Breana to her class when Breana's classroom teacher had put her in the hallway as a punishment for her hyperactive behavior. Betty appreciated that the special education teacher went out of her way to help her granddaughter, even though she had no obligation to her. Betty described the teacher as a nice and patient.

Henrietta felt that her daughter's school was a good place for her to be. When Harmony got older and it was time for her to transition to another school, there was an IEP meeting to discuss her progress, new goals, and placement for the upcoming school year. During the meeting, Henrietta explained that there was some controversy about which school Harmony would be attending because not all schools have programs for children with autism. She said that the teacher at Harmony's current school was supportive and that she "hope[s] to see my daughter there for this year."

One study participant told of an instance when she felt that school administrators were being emotionally supportive to another child. Jennifer's job obligations require her to visit the courthouse often. On one occasion, she saw one of the school administrators from a school that she was considering for her daughter. She later learned that the administrator was in court in support of a child who had gotten into trouble. The situation did not occur in school; however, the administrator was present in court simply to support a child who was a student in her school. Jennifer was happy to know that the administrators go beyond what is required to support their students. She shared, "…but in

actuality, because she was there, I thought more highly of the school and that's...that made me want to put her [my daughter] there."

There were several comments from the study participants about other school personnel who were emotionally supportive. Parents shared comments such as, the assistant principal is willing to "make it work", she is caring and concerned (Georgia); she is confident in the child's progress in speech because of the speech therapist's positive interaction with the child (Henrietta), and that the paraprofessional was a "sweet lady" (Betty).

When these mothers view teachers and administrators as emotionally supportive, they reported that they feel a sense of collaboration and respectfulness. These are the elements that generate more involvement from these parents. Specifically, they are appreciative of teachers who are emotionally supportive towards them. Likewise, teachers who show emotional support toward the children are seen more favorably by the parents.

Barriers to Parent Involvement

During the course of each of the interviews, the participants were asked to rate their own level of parent involvement, one being completely uninvolved and five being the most involved. Eleven of the 15 mothers rated themselves as either a four or five. However, in addition to the mothers who rated themselves three or below, these mothers all cited areas where they felt their involvement was deficient. Even those with multiple children and full time jobs thought that there was more that they could do. When questioned about the barriers to their involvement, they shared personal factors and teacher traits and school policies that hindered their involvement.

Personal Factors

According to research (Williams & Sanchez, 2011), several barriers have been identified as having a negative impact on parent involvement, including, but not limited to time poverty, lack of access, and lack of resources. Additionally, single parenthood presents circumstances that limit the parent's school engagement (Newman & Chin, 2003). These barriers can lead to frustration and isolation, which diminishes the likelihood of the parent being involved in his or her child's school.

Parents in this current study shared very similar sentiments as they discussed personal barriers to their own involvement or the involvement of African American parents in general. They cited several factors that deter parents from being involved. These include the related factors of socioeconomics, single parenthood, and lack of time.

Socioeconomics. Several of the mothers in this study shared their frustrations with not being able to provide a better educational foundation for their children due to lack of finances. Tabitha, for example, explained that she had a desire to secure tutoring services for her children. She commented that her level of knowledge limited her ability to help her children with the rigorous standards they are now required to learn. She comments:

> We can't afford that. So, you don't invest like that because you don't have the means. It may not be so much that we don't really think that that's important. It's just like I… maybe just the means of it. And so it's frustrating. And you can't really do anything about it because you don't even understand yourself half of the stuff they teach... they're being taught. So you can't help them. And it's like, it makes you feel, you know... um... discouraged or whatever like you feel less.

Some parents also discussed how economics plays a role in the level of resources the school provides. For instance, during their individual interviews, both Ethel and Ivory

made comments about how the lack of resources available to the school negatively impacts the students' education. In Ethel's experience, because she and her husband purchased a home in a high poverty area some years ago, she now sees the educational impact the lack of resources has on her children's school. For Ivory, she recognizes where her son's school is lacking, and tries to provide as much as she can; however, her own limited resources hinder her desires to provide more.

Single parenthood. Some of the study participants cited single parenthood as a hindrance to their parent involvement. Some of the hardships they shared included lack of childcare to attend meetings or school events, the noncustodial parent having limited involvement with the child due to custody issues, and the need of a single parent to work additional hours to compensate for the lack a second income instead of being more involved with the child's education. One parent explained, "…[I] can't tell FPL I had a meeting at school. I have to pay my bills…"

Lack of time. Time is a resource that is not available for some study participants. Two participants whose children attend school in Broward County both stated that they would attend the monthly district-sponsored meetings if they were offered at a different time. Due to working hours, neither of them could attend the meetings. Another obstacle facing parents is receiving meeting notifications with little time to plan or to make arrangements at work. Due to their other obligations, time is a valuable resource for these parents.

Teacher Traits and School Policies

Notwithstanding personal circumstances, parents also expressed a number of hindrances to parent involvement imposed by the teacher and the school. Cousins and

Mickelson (2011) describe parents' feelings of discouragement and isolation when they do not understand the inner-workings of the school. This could be the result of poor communication. They further explain that teachers who do not respect parents' contributions that are different from those of mainstream parents risk alienating families, thus minimizing their involvement.

The current study's participants shared their views about teacher traits and school policies that hinder their involvement. These barriers include inadequate communication and devaluing parents' contributions. Teacher traits and school policies will be discussed together, as the parents often attributed the teacher's actions to the overall culture of the school or school system collectively.

Inadequate Communication

Negative calls and notes. One significant theme that emerged from the data centered on the lack of positive reports from school. Parents felt that they received phone calls from their child's teacher or school administrator only when their child misbehaved or experienced an academic failure. Rarely did the teacher call to share good news about the child's progress or mastery of a goal. Instead, the teachers reach out to the parents after the failure has occurred, taking a reactive approach rather than a proactive one. Tabitha sighed, "It's almost like she doesn't care."

Conflicting information. Parents were bothered by the conflicting information they received from the teacher and from the school. For example, Keisha shared that her daughter's teacher continually expressed to her that Keona was performing well. However, when she received her report card, the child had failing grades. Furthermore, the teacher did not inform Keisha that Keona was in jeopardy of failing the grade.

Monica's similar experiences with Michael's teachers developed into a lack of trust in the teacher and the school.

Unresponsiveness and lack of follow-through. The frustrations that study participants felt were evident as they discussed the teacher's and/or the school's unresponsiveness and lack of follow-through. Parents' experiences included teachers not responding to phone calls and meeting requests, teachers and district personnel not providing information as they promised, and recommendations that made during IEP meetings not being addressed as required. These inactions left many parents feeling defeated ("I just want to pull my daughter out"), confused ("So she had all Bs [on her progress report], and him [History teacher] with a C. I said, "Ohhhhh, ok. She's doing good now. She progressing." Got her report card... F), unsupported ("I depend on the teachers to help. And this particular teacher this year has not been that way"), and frustrated ("I'm reaching out to you and you're not responding back to me. [W]e not solving the problem and we not getting nowhere").

Negative demeanor. There were a number of teacher characteristics that parents felt diminished their desires to be involved in their child's education. Parents perceived teachers as being negative when their facial expressions and body language seemed cold and uninviting. Teachers who presented many problems but failed to provide solutions were also seen as being negative. One parent described a school principal as being cold and untruthful in his interactions with her. Ethel summed up her feelings with:

> I think you know when you get a teacher that seem like they're overwhelmed and they're only focusing on the negative, then it's kind of hard for you to really even, you know, come up out of that whole thing to feel encouraged, or to ask questions…

Devaluing Parents' Contributions

Parents' expertise. There were some study participants who shared that they were limited in their knowledge and understanding of their child's disability. Conversely, there were some parents who researched and studied their child's specific disability to gain a deeper understanding of what he or she needed to be successful. Additionally, parents have naturally had numerous interactions and experiences with their child, which enables them to have a unique vantage point. Be this as it may, some parents still experienced feelings of inadequacy when teachers ignored their suggestions about strategies that work best for their child. For example, during Grace's IEP meeting, the teachers were developing her goals. Gloria was not comfortable with the goals because she felt that they were too low. She tried to explain to the team that Grace had already mastered most of the goals that they were proposing. She suggested other goals that were more appropriate; however, the team disregarded those suggestions with comments that they needed to see Grace perform specific tasks at school, regardless of her ability to do them at home. They did not add any of Gloria's suggested goals to her daughter's IEP.

Parents' abilities. According to study participants, not only did teachers and school personnel disregard their expertise, they also showed indifference towards parents' abilities. For example, Georgia volunteered to attend field trips with her son's class to help with not only her child, but with all the children. She also expressed her willingness to volunteer in her child's classroom to assist the teachers, to share information with them about her son's disability, and to help with the other children in the class. However, her offers were met with silence from the teachers and the school.

Their inaction spurred feelings of inadequacy in this parent, as she felt that they did not view her as knowledgeable or capable.

Not only did this parent feel inadequate, she also felt attacked and blamed for her son's disability. As she explained, the school did not welcome her attempts to be involved, but they always called her when her son was misbehaving. The teachers would question her about why he was acting out, and seemed to blame her for his misbehavior. She tried to explain to them that this was the reason why she wanted to volunteer in his class and share with them some of the characteristics of children with his type of disability. Unfortunately, she was not able to share that information with them. Soon after, she moved her son to another school.

Parents' preferences. One of the chief complaints from the parents in this study was the teachers' nonchalant attitudes about the parents' time. For example, the parents explained that they often received meeting notifications within just a few days of the meeting, not giving them adequate time to prepare. Also, one participant shared feelings of frustration when trying to schedule a meeting with her daughter's teacher. After several attempts to reach the teacher, she responded with, "I'm here from 7:30 – 2:00. After that, I can't help you." The parent's anger was very evident during the interview as she remembered the teacher's attitude and how she was being unjustly treated. She shared that the school administrators were not helpful either, as she attempted to speak with them several times, to no avail.

Another recurring problem that emerged from these parents' lived experiences was the disregard for their communication preference. One parent explained that she preferred receiving phone calls from her child's school because she is not comfortable

with using technology. She has a cell phone, but uses it primarily to make and receive phone calls. She has a computer at home, but she does not use it. When the teacher has important information to share, she explained that he posts the information on his website. Therefore, if her child has a project to complete, or if she needs to study for an upcoming exam, for example, the parent will not be aware. She explained this to the teacher several times. She asked if he could simply print out the information and give it to the child so that she can bring it home. The teacher agreed, but has not done so. However, the child has since missed several assignments.

Lack of Emotional Support from Teachers

Parents in this current study were very forthcoming about their experiences with the lack of emotional support from teachers and school personnel, and the impact it had in them and their children. One parent shared that the teacher's body language could be a deterrent, and this may be something that the teacher has not recognized as a problem with parent-teacher communication. Nadia commented:

> So some teachers will come off strong, and might be intimidating to parents. The parents don't feel comfortable with coming to the teacher. …Your body language, the way you carry yourself, like your posture, your face expressions, it tell…a person exactly how you feeling without you even knowing…. You got some that have a frown on they face already. They probably came to work with a attitude. Something going on home personally.

Ethel shared that negativity from teachers may leave parents feeling discouraged and not wanting to ask questions:

> Umm and umm I think you know when you get a teacher that to me they seem like they're overwhelmed and they're only focusing on the negative? Then it's kind of hard for you to really even, you know, come up out of that whole thing to feel encouraged, or to ask questions and get the kind of the answers you're looking for.

Study participants also shared their feelings about teachers or school personnel who seemed to generally report only negative behaviors or make only negative comments. These comments had a negative impact on the parents in this study. Tabitha made this comment:

> Well yes, if that teacher is constantly...um... nitpicking every bad thing or every negative thing that the child does as if, you know, that child is a nuisance to them, that would deter a parent as well because you're like, "All they see is wrong that they do. She don't care. She just....” Ya know. And it just put a neg... you know, the parent in an uncomfortable situation, ya know?

Betty felt hurt when she learned that her kindergarten-aged granddaughter was sitting in the hallway after being kicked out of class. The security guard shared that the child had been sitting there and just singing church songs all by herself.

> *Betty*: …She really [needed] that one-on-one with that, ya know, to help her stay focused. She don't understand what's going on with her. And, that teacher, she (chuckles) kicks her out, too. And the security, Mr. J, we was close, and he would let me know, Breana sitting out the classroom in a chair, outside the classroom. What is that? That hurted me. So how is that happening? …Because they not, they just kicking her out and how she learning like that? She don't know. He say Breana, she was in church a lot. He say Breana having church outside the classroom. She singing. They didn't bother her. She didn't know. He said she singing outside... He say, “Your granddaughter out there clapping and singing church songs outside of the classroom.”
>
> *Researcher*: And how did that make you feel?
>
> *Betty*: That hurt me.

Henrietta shared her feelings of discontent when she attended an IEP meeting for her daughter. The team was discussing school options because her daughter was at the age where she was transitioning from the pre-kindergarten setting to the full kindergarten setting. Several schools were invited to the meeting. Henrietta shared that a representative from one of the schools immediately made her feel uncomfortable because this person

started by explaining what the school was not going to be able to do, and if her daughter needed any special services the school was not equipped to provide them. Henrietta commented, “Umm, I don't think people realize that if you have a negative, I guess, tone or negative persona you [a parent] don't want to be bothered.

Georgia shared her thoughts about how teachers and school personnel must invest in the emotional development of children and their families. She understands that teaching children with special needs can be challenging. But she wants teachers to understand that raising children with special needs is also demanding. She suggested that teachers and parents commit to accepting and loving the child with his or her disabilities.

> And then somebody will call you and, and, and virtually say, “So did you wash his face this morning?” Or... “Are you sending him out like that, like this”, ya no (chuckles)? And it's like, so you, you feel bad because you feel like you're being attacked and it’s like... Well then it lets me know that that para (pause) doesn't know the extent of the disability. She’s just thrust there to do a job, and she may get aggravated because she has to wipe the nose, ya know, or do some other things, but they might be a part of the disability. Because we, WE have to deal with this 24 hours a day, ok. Uummm (pause), we have to learn to live with it, accept it, deal with it, and still love...our child. And I feel like if you’re on a job, that’s what you need to do. Learn how to deal with it, deal with it, (long pause) and still love the child.

Study participants were very forthcoming about hindrances to their parent involvement. They acknowledged that, although they had the desire to participate more, there were personal barriers impeding their involvement. They also discussed specific teacher traits and actions that deterred them from being more engaged, as well as some school policies that made participation difficult.

Recommendations to Teachers and School Administrators to Increase Parent Involvement

Near the end of each interview, parents were asked to share their thoughts about what teachers, school administrators, and other school personnel needed to know to increase the level of parent involvement of African American parents of children with disabilities (See Table 2). After analyzing their suggestions, the data revealed three significant categories, which include Communication, Showing Care and Concern, and Accepting and Supporting Parents.

Communication

One recurring theme that has persisted throughout the data involves communication. Parents recommended that, in order to get African American parents involved in their child's education, teachers and other school personnel must communicate what they expect of the parent. That is, teachers must be specific about the various types of parent involvement activities that they expect, and then make several suggestions to parents so that parents feel that they have a choice in how to be involved. Moreover, they suggested that teachers communicate with parents on a personal level to gain a deeper understanding of the individual parent's needs. In this manner, teachers will be able to provide specific answers to the parent's specific questions, and become a resource to the family of the child.

Show Care and Concern

Study participants also recommended that teachers and other school personnel show genuine love, care, and concern about their students and the students' parents. They suggested that teachers engage with parents on a personal level and welcome them to the

school and the classroom. They also offered that teachers should take an interest in the whole child beyond academics and see the child's full potential. By moving beyond what is required and getting to know the child and family on a deeper, more personal level, parents feel compelled to become involved. They feel hopeful.

Accept and Support Parents

One of the ways that these parents felt teachers could show care and concern is by accepting parents as they are and supporting their efforts to be involved. Because not every parent experiences the same life circumstance, nor is every parent as informed as others, teachers should be aware of each parent's level of knowledge and support them where they are. Furthermore, participants explained that it is important for teachers to treat all parents in like manner, regardless of the parent's level of involvement. If teachers practice seeing from the parent's perspective, perhaps they would realize that some parents may not be involved for legitimate reasons, supporting their suggestion that parents not be judged, but treated as equally as parents who are more involved. For those parents who make an effort to be involved, teachers should accept and support their actions.

Table 2.
Participants' Responses to What Teachers, Administrators, and Other School Personnel can do to Increase Parent Involvement of African American Parents of Children with Disabilities

Participant	Recommendation
1-Jennifer	• Be proactive
2-Tabitha	• Be proactive in communicating with parents • Don't wait until the child fails • Tell me what to do for my child to be successful
3-Georgia	• Care about the child and the family

	• See the child's potential
4-Betty	• Communicate with the parent • Be specific in letting the parents know what they can do to help
5-Ethel	• Make parents feel hopeful • Tell parents what to expect and provide more insight about child's disability
6-Sarah	• Communicate more • Show care and concern about the child • Be proactive and don't wait until the behavior is out of control
7-Gloria	• Know children on a personal level • Do more than what is required • Show love and concern
8-Henrietta	• Help general society understand disabilities • Be aware of the parent's level of knowledge and support the parent
9-Ivory	• Treat every parent the same, even the ones who are not as involved • Be specific about what type of involvement would be helpful • Provide choices of various types of involvement
10-Rhonda	• Communicate with parents • Be a resource to parents
11-Keisha	• Communicate and provide an answer to the problem being discussed • Cooperate with parents who are trying • Don't judge parents
12-Cynthia	• Engage in personal interactions with parents (greet and welcome them) • Show care and concern • Try to see things from the parent's perspective (Put yourself in their shoes)
13-Nadia	• Better communication
14-Monica	• Show interest in the child as a whole – not just academics • Treat all parents the same, even the ones who do not participate • Communicate one-on-one with the parent and get to know the parent on a deeper level to find out why they are not as involved
15-Angel	• Understand that parents may see parent involvement differently • Reach out to parents and invite them in • Accept various forms of parent involvement • Be specific about what the parent can do to help the child • Support parents in what they say they need

Chapter Summary

Fifteen study participants engaged in one-on-one interviews where they discussed the phenomenon of parent involvement from the perspective of an African American parent of a child with special needs. The voice recorded interviews, which included the IEP reviews, and field notes were transcribed and the transcriptions were coded. Those codes were organized into categories, subcategories, and themes. The four themes that emerged from this rich data include perceptions of parent involvement, facilitators of parent involvement, barriers of parent involvement, and recommendations to teacher and school administrators to increase parent involvement.

CHAPTER V

OVERVIEW, RECOMMENDATIONS, CONCLUSION

Parent involvement is associated with positive educational and behavioral outcomes for school-aged children (Anderson & Minke, 2007; Williams et al., 2011). However, parents in disenfranchised groups, specifically African American parents, are less likely to be involved (Jeynes, 2003; Al-Kandari & Al-Qashan, 2010). There is an abundance of research that theorizes and postulates why African American parents are not involved and provides suggestions for increasing their involvement (Lewis et al., 2011; Williams & Sanchez, 2012; Williams et al., 2011). However, for the vast majority of these studies, teachers, administrators, and other professionals are questioned; a very scant amount of scholarly work includes the voices of the parents themselves. This is even more problematic in the area of special education (Davis, et al., 2005).

The current study was conducted to provide a platform for African American parents of children with special needs to voice their perceptions of their own parent involvement, as well as their perceptions of teacher traits, characteristics, or actions that either promote or inhibit their level of involvement in the educational development of their child. As the 15 mothers who participated in this study shared their personal stories and insight, several themes emerged from the data. This chapter will provide an overview of those themes and make connections between the current research and scholarly work previously conducted in the field. Following the overview, this chapter will discuss the current study's limitations, implications for current practices, and recommendations for future research.

Broader Perspectives of Parent Involvement

Though it is widely accepted in the educational arena that African American parents of children with special needs engage in parent involvement activities at a significantly lower rate than their White, middle class counterparts (Al-Kandari & Al-Qashan, 2010; Durand, 2011; Jeynes, 2003; Kim, 2009; McDermott & Rothenberg, 2000; Williams & Sanchez, 2011), the parents of the current study provide a different point of view. These mothers reported that they are, in fact, involved in their children's education. When viewed from the perspective of these 15 participants, the concept of parent involvement is broader and more nuanced than definitions and illustrations adopted by the mainstream. There were three types of activities that were significant in the parents' explanations of their involvement, which include communication, volunteering, and home learning.

Communication

Previous research with African American parents supports having a positive and effective communication system between the parent and the school (Boyd & Correa, 2005; Brandon, 2007; Williams et al., 2011). In the current study, parents also cited communication as a significant component of their parent involvement activities. First, parents preferred the more traditional communication methods, such as phone calls and written notes. Though they welcomed various types of communication, including emails, websites, and podcasts, most parents in this study preferred the more personable methods. They spoke more favorably of teachers who shared their cell phone numbers with parents and who made and received calls often.

Secondly, parents were quite vocal about their desires for educators to be proactive in communicating with them. That is, these parents would like teachers and school administrators to contact them at the first sign of academic or behavioral problems with their children. Parents shared their frustration with the school's reactive response to problems that, in the parents' opinions, could have been avoided had the school taken a more proactive approach of involving them from the start.

Lastly, parents spoke of their desires for their children's teachers to be more positive. Positive phone calls or notes from the teacher were rare, and positive calls from school administrators were not specific to their child, but more informational in nature (i.e., testing and school-wide activities). Receiving positive communication specific to their child made parents feel that the teachers cared about their child and cared about them as a parent. These actions, they shared, made them want to be more involved in their child's education.

As previously detailed in Chapter 4, the mothers in this study provided several examples of their communication efforts with either their child's teacher or with the school administrators. They requested parent-teacher conferences, they attended IEP meetings, they informed the school of their communication preferences, and some used emails or similar technologies in an effort to acquire or share information pertaining to their child's education. Unfortunately, their efforts went unanswered or were often disregarded. Study participants also shared their preferences and expectations for how teachers and other school staff should reciprocate their communication efforts. Specifically, parents would prefer that teachers use traditional forms of communication, alerting parents in advance of potential difficulties, and sharing student successes. When

teachers, school support staff, or administrators failed to communicate with parents in ways that they expected or preferred (for example, sending emails to parents who do not use the computer, reaching out to the parent after the child has already failed, and contacting the parent solely to convey negative information) parents reported feeling disillusioned and disrespected. These actions, they reported, deter parents from wanting to be involved.

Similarly, researchers investigating the involvement of parents from culturally disenfranchised groups found that when schools fail to communicate with parents in ways that they prefer or that they feel to be more effective for them, parents become less involved (Kim, 2009; Williams et al., 2011). Further, parents stop reaching out to the school when they do not get a response or when they feel that their input is not needed or appreciated. When parents feel that communication with the school is generally negative, they are less likely to initiate or reciprocate dialogue, leading to diminished levels of parent involvement (Williams, et al., 2011).

When asked about their level of parent involvement, or when discussing their involvement activities, these study participants felt that they have a parental responsibility to communicate with their children's teachers. Through consistent and open dialogue, the parents are able to ascertain their child's progress, intervene in academic and/or behavioral concerns, share specific characteristics and needs of their children, and learn about the overall day-to-day happenings at the school.

Volunteering/Involvement at School

Another significant aspect of parent involvement discussed by study participants was volunteering or being present in their child's school. This is particularly interesting

since, of the 15 mothers, two are stay-at-home parents, one is self-employed, and the remaining 12 have full-time jobs away from home. Though the majority of these parents have career obligations that demand much of their time during school hours, they felt that being present in school was important for the academic development of their child. In most instances, these mothers visited their child's school at the invitation of the teacher or other school personnel (i.e., Exceptional Student Education (ESE) specialist) for IEP meetings or for disciplinary reasons. In fact, the participants reported that they rarely missed an IEP meeting. Even if given short notice of only a few days for example, they would make arrangements with coworkers to cover their shifts, take personal time off work, attend the meeting via phone conferencing, or ask another family member to attend the meeting in their stead.

Even though these mothers never or rarely missed an IEP meeting, they reported that very little of what was stated in the IEP parent statement section reflected their actual concerns for their children. With the exception of two mothers (Jennifer and Henrietta), all participants (excluding the mother who did not provide an IEP) shared that they had more input than what was written as their statement. When pressed further, one mother (Gloria) said that she refused to voice her actual concerns because the IEP team members from the school seemed to have already decided what her daughter's goals should be.

In addition to attending required meetings, such as IEP meetings and parent-teacher conferences for behavioral reasons, these mothers also described how they participated in their child's education by volunteering for field trips and volunteering on special school committees. Some of their time spent in school was also dedicated to

specific accomplishments and celebrations such as awards ceremonies and birthday parties.

These mothers were candid about the various ways they participated in their child's education by visiting the school for formal meetings and scheduled events, as well as informal and impromptu visits. However, many of them also shared their desire for being more involved. For example, several of the mothers whose children attend school in Broward County shared their discontent with not being able to attend the district-sponsored SPED meetings due to the inconvenient location. They did not cite transportation as a barrier; rather, they explained that by the time they navigate traffic and travel the far distance to the school location, the meeting would be finished.

Just as some participants shared a desire to participate in district meetings to learn more about their child's disability, some parents spoke of a desire to volunteer in their child's school to be an asset for other African American children and their families. Participating in fundraising activities, helping out in the classrooms, and joining the school's Parent Teacher Association (PTA) were mentioned as possible volunteer options. Similar to the participants in earlier studies (Epstein et al., 2002; Williams and Sanchez, 2012; Williams, Sanchez, and Hunnell, 2011), the participants in this current study shared that volunteering in their child's class or school was important because it showed that they were interested in their child's progress and that they were concerned about other African American children succeeding in school as well. These parents recognized that not all parents could spend time at their child's school to be sure that he or she received a quality education; therefore, they felt that it was necessary for them to do as much as they could to ensure that all the children were succeeding.

As previously stated, it is generally understood that African American parents are less involved in the educational develop of their children than other cultural groups. However, the parents in this current study have shared several examples of their involvement through volunteering and other in-school activities. Furthermore, they described how they overcome obstacles to be present at their children's schools, not only for the benefit of their child, but to be supportive of other African American families of children with special needs. These study participants have a perception that not all of their contributions or efforts are recognized. Therefore, the belief that they are not involved in their children's education is a narrow view of their actual involvement.

Learning at Home

Learning at home was noteworthy in discussions with the study participants about how they define parent involvement. Of the 15 participants, 13 spoke of some form of homework help, including direct and indirect assistance. Some parents sat with their child and provided one-on-one help and supervision. Other parents, specifically those of children in the advanced grades, solicited help from family, friends, and tutors when the academic demands were beyond their understanding. Others spoke of less direct homework involvement – their support included providing homework essentials, such as a quiet environment conducive for learning and study materials.

The range of home learning support that these participants described providing to their children echoes the various types of home learning activities addressed in previous research (Cunha, Rosário, Macedo, Nunes, Fuentes, Pinto, & Suárez, 2015; Van Voorhis, 2003). More importantly, however, by participating in home learning activities at any

level, these parents exhibited that they do, in fact, have a desire to participate in their children's education (Epstein, 2002; Van Voorhis, 2003; Williams & Sanchez, 2011).

Three of the participants (Nadia, Monica, and Gloria) shared their views on learning at home from a more needs-centered perspective. That is, the mothers developed their own home learning activities based on their perspectives of what their children needed. One child, for example, required additional academic support in reading and writing. His mother developed learning activities so that the whole family could be engaged in the learning process. Another parent whose child has cognitive deficits developed in-home learning activities so that her daughter could learn to be self-sufficient with her personal care needs. These mothers did not feel that they were getting the support they needed from the school. They felt that the teachers had their own opinions of what their children needed, disregarding the expertise and desires of the parents. Kalyanpur and Harry (2004) explained that when teachers disregard the desires of the parent, they send a message that parents are deficient in their parenting skills because that do not know what is required for the child to be successful. These practices disenfranchise parents from the educational system, thus minimizing the participation of African American parents of children with disabilities (Davis et al., 2005; Harry, 2008).

In the current study, there were three types of activities that were significant in the parents' explanations of their involvement, including communication, volunteering, and home learning. The parents' perceptions were that they are, in fact, involved in their children's education. Their efforts were not always recognized or acted upon, however, in some cases, they continued despite the lack of support from the school.

These parents described involvement activities that may not be recognized by educators. For example, some parents shared that they not only communicate with the school staff about their child, but they also communicate with others (i.e., family members, specialists, other educators, school district personnel) who may be influential in providing the support that they or their child need. Furthermore, their volunteer efforts reach beyond their child's school or classroom; some of these parents discussed ideas about volunteering in the community to teach other parents about their rights and about raising children with a disability. In the case of home learning, several mothers discussed that they focus on more than just school-related homework activities; they teach their children the necessary skills that are individualized to their specific needs.

It is imperative that educators broaden their view of parent involvement to include the perspectives of parents from marginalized cultural groups. To this end, they can first recognize the various ways that African American parents are involved in their children's education, and then support them at their current levels of need. That is, provide parents with feedback on their child's progress in view of the help that the parents may be providing, and then support them with additional resources that may be helpful in supporting the child's specific needs. This will help the parents feel valued and, in turn, increase their level of involvement.

Facilitators and Barriers to Parent Involvement

As the mothers discussed the various ways in which they were involved in the educational development of their children, they also discussed specific teacher qualities and school policies that encouraged their involvement. When these qualities and policies were not present, parents were deterred from being engaged. The data revealed that these

participants favored practices such as effective communication, valuing parent contributions, and exhibiting love and positive attitudes.

Effective Communication

As previously stated, the parents in the current study deeply emphasized the importance of effective communication between their children's teachers and school administrators and themselves. Research supports this finding (Boyd & Correa, 2005; Williams et al., 2011), and emphasizes that, "strong communication between parents and school personnel is fundamental to this partnership and to building a sense of community between home and school (Williams & Sanchez, 2011, p. 56). One way that school staff can strengthen their communication with parents, according to the current study's participants, is by using more conventional forms of communication, which is a significantly different finding than findings from previous studies. That is, rather than providing information via emails, websites, and/or other technology-based methods, educators should be aware that some parents would prefer receiving phone calls and written notes or letters. Participants spoke highly of teachers and other school staff who shared their cell phone numbers with the parents, and those who used the child's agenda to communicate back-and-forth. Parents felt respected and appreciated when they received a personal call or note. Further, they felt that the teacher truly cared about their child when they were proactive and took the time to contact the parent to share information early and often. Parents were then more compelled to take any necessary action in supporting the teacher and school.

Conversely, when parents did not receive calls or written notes, or when the communication came as a result of academic or behavioral failures, the parents felt that the teachers and administrators did not respect them or care about their children. They shared feelings of defeat and frustration because any assistance they could have provided was no longer useful, as the failure had already occurred, and at times, resulted in significant consequences for the child. None of the mothers indicated that lack of communication deterred them personally from being involved; however, when speaking about actions that may deter African American parents in general from being involved, ineffective communication was a substantial part of the discussion.

Therefore, if school administrators and teachers are sincere about increasing the involvement of African American parents of children with special needs, they must consider improving the ways that they currently communicate with these parents. Although schools operate in a technologically advanced arena, not all families are comfortable with receiving information via emails and websites. Utilizing more personable avenues of communication, such as phone calls and written notes may increase parents' participation. Further, teachers should be encouraged and supported in reaching out to parents to provide positive reports. Not all correspondence should be for the purpose of delivering negative information about students' progress. When there is effective communication and constructive feedback, parents feel more comfortable, they feel a greater sense of belonging, and their level of involvement increases.

Valuing Parents' Contributions

When members of the dominant culture use their own standards and principles to evaluate the actions of members of marginalized cultures, the contributions of the latter

cultures may be devalued (Trainor, 2008; Wilson, 2015). Similarly, when African American parents of children with special needs, a marginalized group, contribute to their children's education according to their own social and cultural capital, oftentimes those contributions are not recognized as valuable by teachers or school administrators, who have historically adopted the dominant culture's standard for what parent involvement should encompass (Banerjee et al., 2011; Bower & Griffin, 2011). When parents perceive that their actions are not valued, feeling of discontent with teachers and other school personnel may arise (Martinez-Cosio, 2010; Trainor, 2008; Wilson, 2015). The mothers in the current study shared similar sentiments.

Current study participants discussed their individual and collective contributions to their children's education. Individually, several parents shared that, regardless of the educational level they had attained, they were still able to contribute to the educational growth of their child. However, their perception was that their children's teachers did not recognize their contributions, nor did they value them because the parents were not college graduates. They felt that the teachers assumed what they were or were not capable of doing or willing to do. In some instances, they shared that they were actually already doing what it was assumed they were not doing. Although, according to the parents, this did not directly deter them from being involved, it did lead to feeling of inadequacy and overall dissatisfaction with the school.

In addition to valuing their individual strengths, the participants also discussed their collective strengths. The *village* concept was often referred to during the interviews. The parents shared that they often relied on family members and close friends to assist with school-related matters. This included, but was not limited to respite care, emergency

situations, and tutoring or homework support. More specific to special education, the parents discussed the importance of having support during IEP and similar meetings to help in making educational decisions for the children. To this end, the parents talked openly about teachers and other school member having membership in the village. That is, these parents relied on their children's teachers to keep them informed of the day-to-day happenings in school as well as any information pertinent to their child's individual needs.

Exhibiting Love and Positive Attitude

Researchers have found that when teachers and other school personnel are emotionally supportive, parents engage with the teacher and the school differently than if they were not (Kim, 2009; McCormick et al., 2013). Parents view these teachers as more collaborative and respectful, which increases the parents' involvement. Likewise, the parents in this current study shared their feelings of content with their children's teachers who openly exhibited a loving demeanor towards them and their children. This is a significant finding, as only a few studies have been conducted which discuss emotional support and parent involvement.

The mothers in the current described various ways in which teachers and the school environment were warm and welcoming. One parent (Tabitha) recalled a time when her child's teacher communicated with her much more than it was required and more than she had expected. This parent felt that the teacher had a desire for her son to do well. Another parent (Jennifer) described the welcoming atmosphere at her daughter's school, explaining that the entrance of the school was painted with murals that that felt inviting.

With respect to love and support shown to the children, one parent (Betty) recalled the time when her child had been referred for an evaluation. The school psychologist was more interested in hearing about the child's accomplishments and abilities. This made the parent feel that her child mattered beyond the test scores.

Conversely, lack of emotional support from educators evoked negative feelings in the parents, such as discouragement and isolation. Some examples of teachers' behaviors included negative body language and facial expressions, reporting only negative reports about the child's progress, and negative actions from the teachers, like kicking the child out of class with no regard for his or her disabling conditions. These types of actions were deterrents to parent involvement according to these study participants.

Perhaps teachers, school administrators, and other staff could benefit from professional development activities focused on preparing them to be more emotionally supportive to families in marginalized cultural groups who are raising children with special needs. This is a unique population that has been found to be the least involved in their children's education, when involvement is defined using mainstream values. Yet, due to the significant learning and/or behavioral challenges of their children, African American parents of children with special needs are in need of the greatest support.

Personal Barriers to Parent Involvement

In addition the actions and attitudes of teachers and school administrators, participants spoke of personal circumstances and life situations that impeded their involvement in their child's education. Having limited financial resources was a significant deterrent for some of the mothers in this current study. Because they had limited income, these parents could not provide the additional support that their children

needed to succeed academically. Hiring a tutor, for example, was a desire that some of the participants wished to provide for their child who struggled in math, science, or reading. Not only did they mention how their financial situation impacted their child, these parents also mentioned how schools in low socioeconomic areas do not provide an adequate education to the children due to their own limited resources. The views of the parents in the current study mirror previous research outcomes that found that limited financial resources often deter African American parents from being involved in their child's education (Cousins & Mickelson, 2011; Williams & Sanchez, 2011).

Single parenthood and limited time were also discussed in the interviews with the study participants as deterrents to their involvement. These barriers seemed to occur concomitantly – because the single mothers worked additional hours and because they had multiple responsibilities as the primary caregiver, their days and evenings were consumed with very little time to contribute to parent involvement activities that occurred outside of the home. Newman and Chin (2003) referred to this phenomenon as time poverty, where poor working families lack free time to dedicate to their child's educational concerns. Other studies also found that single parents and teen parents were less likely to be involved in their children's education due to a lack of economic and time resources (Cousins & Mickelson, 2011; Williams & Sanchez, 2011).

Parents' Recommendations to Increase Parent Involvement

Before closing the interviews, the study participants were given an opportunity to share their thoughts and suggestions for increasing parent involvement of African American parents of children with special needs. Their suggestions to teachers and school administrators included communicating effectively and often with parents. They should

be sure to communicate in a method that is preferred by the parent, and they should include positive comments in the conversation. Providing positive comments makes parents feel that their child is loved and valued. When parents sense that they and their child are esteemed, they desire to be more engaged. They contribute to the educational development of their children and support the schools. Lastly, when parents volunteer their time and services to the school, or when they support their children according to their own financial, educational, or familial resources, their efforts should be valued and appreciated.

Limitations

The current phenomenological study has several limitations that should be noted. First, fourteen of the fifteen participants rated themselves as being moderately or highly involved in their children's education. Including the voices of parents who perceive themselves as having limited or no involvement in their child's education should be considered. Also, all study participants were female. Parent involvement from the perspective of fathers may enrich the results. Lastly, the researcher was acquainted with eight of the participants prior to the study; she and six of the participants attend the same church and she has professional relationships with two participants. This familiarity may have had some impact on the participants' comfort with sharing their thoughts and opinions.

Implications for Current Practice

Scholars propose that parent involvement in urban education significantly lags behind the involvement of parents in the dominant culture (Al-Kandari & Al-Kashan, 2010; Jeynes, 2003; McDermott & Rothenberg, 2000). According to researchers, this is

even more detrimental in urban special education (Pang, 2011; Parette & Petch-Hogan, 2000). However, parents in previous studies (Abdul-Adil & Farmer, 2006; Williams & Sanchez, 20002) as well as parents in the current study maintain that they are, in fact, involved in their children's education. African American parents consider both at-school and at-home activities when describing their involvement. Before ascribing value to a parent based on what may be misperceived as a lack of involvement, perhaps educators should consider expanding their understanding of parent involvement to include the activities of non-dominant cultures.

Additionally, African American parents may not always overtly indicate their desires to be involved (Abdul-Adil & Farmer, 2006); however, it should not be assumed that they do not have a desire or the ability to be involved in their child's education. Rather than erroneously assuming that parents could not or would not contribute effectively to their children's education, teachers and administrators should specify how parents could be useful and then provide various options and opportunities for their involvement.

To assist teachers and other school personnel with recognizing the contributions that parents from various cultures already make towards their children's academic growth, and to help educators support parents with potential involvement efforts, the school systems in both Broward and Miami-Dade Counties should offer professional development activities in Cultural Reciprocity (Kalyanpur & Harry, 2012). With this principle, parents and professionals can develop a cultural self-awareness and recognize, among other things, that parent involvement may be perceived differently by persons of various cultures. Furthermore, when parents and professionals learn to respect one

another's differences as attributes, new lines of communication could be opened and broken lines of communication may be repaired. This could lead to parents being and feeling more valued as co-partners in the education of their child, possibly compelling them to become more involved.

Recommendations for Future Research

Recommendations for future research include exploring the perceptions of parents in other culturally and linguistically diverse groups, namely Hispanic, Haitian, and Jamaican parents since these are large cultural groups in the southeastern region of Florida. These groups are also disproportionately overrepresented in special education programs across the United States, with Haitians and Jamaicans being categorized with African Americans.

Another recommendation is for future researchers to include the voices of parents who chose to not attend their children's IEP meetings. Significant educational decisions for children are considered at these meetings. Providing parents the opportunity to discuss why they do not attend these meetings may provide school districts with additional information necessary to enhance their efforts to include these families.

A final recommendation to future researchers is to include the voices of both the African American teachers and the African American parents of the children they teach. Getting bilateral viewpoints may yield richer data from which findings can be drawn. Perhaps the influence of social capital may be recognized.

Chapter Summary

African American parents of children with special needs were asked to participate in this research study designed to ascertain their perceptions of their own involvement,

and of how teacher actions and school policies hindered or facilitated that involvement. Participants perceived themselves as being involved in their children's education through their communication, volunteering, and home learning efforts. Parents also shared that when educators communicated effectively, valued their contributions, and expressed love towards them and their children, they were more compelled to be involved. When these things were missing, participants were reluctant to be involved. Parents also recommended that educators communicate early and often, show care and concern for parents and children, and be accepting of parents' efforts in order to increase participation of African American parents. This final chapter also outlined limitations to the current research, shared implications for current practice, and made recommendations for future research.

REFERENCES

Abdul-Adil, J. K. & Farmer, A. D. (2006). Inner-city African American parental involvement in elementary schools: Getting beyond urban legends of apathy. *School Psychology Quarterly, 21*(1), 1-12.

Al-Kandari, H. Y., & Al-Qashan, H. (2010). Maternal self-efficacy of mothers of children with Intellectual Development Disabilites, Down Syndrome, and Autism in Kuwait. *Child and Adolescent Social Work Journal, 27*, 21-39.

Anderson, K. J., & Minke, K. M. (2007). Parent involvement in education: Toward an understanding of parents' decision making. *The Journal of Educational Research, 100*(5), 311-323.

Ashworth. P. (1999). "Bracketing" in phenomenology: Renouncing assumptions in hearing about student cheating. *Qualitative Studies in education, 12*(6), 707-721.

Bailey, L .B., Silvern, S. B., Bradham, E., & Ross, M. (2004). The effects of interactive reading homework and parent involvement on children's inference responses. *Early Childhood Education Journal, 32*(3), 173-178.

Banerjee, M., Harrell, Z., & Johnson, D. J. (2011). Racial/Ethnic socialization and parental involvement in education as predictors of cognitive ability and achievement in African American children. *Journal of Youth and Adolescence, 40*(5), 595-605.

Beech, M. (2012). Developing quality individual education plans: A guide for instructional personnel and families. (3rd ed.). Tallahassee, FL: Florida Department of Education Bureau of Exceptional Education and Student Services

Bogdan, R., & Biklen, S. (2007). *Qualitative research for education: An introduction to theories and practice* (5th ed.). New York, NY: Pearson Education.

Bower, H. A., & Griffin, D. (2011). Can the Epstein Model of parental involvement work in a high-minority, high-poverty elementary school? A case study. *Professional School Counseling, 15*(2), 77-87.

Boyd, B. A., & Correa, V. I. (2005). Developing a framework for reducing the cultural clash between African American parents and the Special Education system. *Multicultural Perspectives, 7*(2), 3–11.

Brandon, R. R., (2007). African American parents: Improving connections with their child's educational environment. *Intervention in School and Clinic, 23*(2), 116-120.

Brantlinger, E., Jimenez, R., Klingner, J., Pugach, M. & Richardson, V. (2005). Qualitative studies in special education. *Exceptional Children*, 71, 195-207. Center for Parent Information and Resources (n.d.). Retrieved from. http://www.parentcenterhub.org/repository/idea/

Cooper, C. W. (2003). The detrimental impact of teacher bias: Lessons learned from the standpoint of African American mothers. *Teacher Education Quarterly, 30*(2), 101-116.

Cooper, C. W. (2009). Parent involvement, African American mothers, and the politics of educational care. *Equity & Excellence in Education, 42*(4), 379-394.

Corbin, J., & Struass, A. (2008). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory.* Los Angeles, CA: Sage.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative and mixed methods* (2nd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W., Hanson, W. E., Clark-Plano, V. L., & Morales, A. (2007). Qualitative Research Designs: Selection and Implementation. *The Counseling Psychologist, 35*(2), 236-264.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory Into Practice, 39*(3), 124-131.

Cunha, J., Rosario, P., Mecedo, L., Nunes, A. R., Fuentes, S., Pinto, R., & Suarez, N. (2015). Parents' conceptions of their homework involvement in elementary school. *Psicothema, 27*(2), 159-165.

Davis, C., Brown, B., Bantz, J., & Manno, C. (2005). African American's parents' involvement in their children's special education programs. *Multiple Voices, 5*(1), 13-27.

Diamond, J., Wang, L., & Gomez (2006). African-American and Chinese-American parent involvement: The importance of race, class, and culture. *Family Involvement Research Digests: Harvard Family Research Project* (no volume or issue number).

Durand, T., M. (2011). Latina mothers' cultural beliefs about their children, parental roles, and education: Implications for effective and empowering home-school connections. *The Urban Review, 43*, 255-278.

Eccles, J. S. & Harold, R. D. (1993). Parent-school involvement during the early adolescent years. *Teachers College Record, 94*(3), 568-587.

Education Information and Accountability Services Data Report (2011). *Teacher Demographics in Florida's Public Schools, Fall 2010*.

Elias, M. J., & Schwab, Y. (2004). What about parental involvement in parenting? The case for home-focused school-parent partnerships. *Education Week 24*(8): 39–41.

Epstein, J. L. (1987). Parent involvement: What research says to administrators. *Education and Urban Society, 19*(2), 119-136.

Epstein, J. L. (2005). Attainable goals? The spirit and letter of the No Child Left Behind Act on parental involvement. *Sociology in Education, 78*(2), 179-182.

Epstein J. L., Sanders, M. G., Sheldon, S. B., Simon, B.S., Salinas, K. C., Rodriguez-Jansorn N, Van Voohis, F. L. (2009). *School, Family, and Community Partnerships: Your Handbook for Action* (3rd ed.). Thousand Oaks, CA: Corwin Press.

Epstein, J. L., Van Voorhis, F. L. (2010). School counselors' roles in developing partnerships with families and communities for student success. *Professional School Counseling, 14*(1), 1-14.

ESSA. (2015). Retrieved from https://ed.gov/policy/elsec/leg/essa/index.html

Ferrara, M. M. & Ferrara, P. J. (2005). Parents as partners: Raising awareness as a teacher preparation program. *The Clearing House, 79*(2), 77-82.

Feuerstein, A. (2000). School characteristics and parent involvement: Influences on participation in children's schools. *The Journal of Educational Research, 94*(1), 29-40.

Florida Department of Education Bureau of Exceptional Education and Student Services (2012). A parent's introduction to exceptional student education in Florida. Retrieved from http://www.fldoe.org/academics/exceptional-student-edu/

Florida Department of Education: ESE Eligibility (n.d.). Retrieved from http://www.fldoe.org/academics/exceptional-student-edu/ese-eligibility/

Florida Department of Education: Graduation Rates (n.d.). Retrieved from http://www.fldoe.org/accountability/data-sys/edu-info-accountability-services/pk-12-public-school-data-pubs-reports/students.stml.

Frew, L. A., Zhou, Q., Duran, J., Kwok, O., & Benz, M. R. (2013). Effect of School-Initiated Parent Outreach Activities on Parent Involvement in School Events. *Journal of Disability Policy Studies, 24*(1), 27–35.

Gabriel, K. O. S., & Getch, Y. Q., (2001). Parental training and involvement in sexuality education for students who are deaf. *American Annals of the Deaf, 146*(3), 287-293.

Garcia, S. B., & Guerra, P. L. (2004). Deconstructing Deficit Thinking: Working with educators to create more equitable learning environments. *Education and Urban Society, 36*(2), 150-168.

Goss, A. C. (2015). Toward a village consciousness: *Organizing in the African American cultural tradition. Journal of Black Studies, 46*(8). 797-816.

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology, 99*(3), 532-544.

Harry, B. (2008). Collaboration with culturally and linguistically diverse families: Ideal versus reality. *Exceptional Children, 74*(3), 372-388.

Harry, B., Kalyanpur, M., & Day, M. (1999). *Building Cultural Reciprocity with Families: Case Studies in Special Education*. Baltimore, MA: Brooks Publishing.

Hocutt, A., & Fowler, K. M. (2009). Case study research: An overview. In Paul, J., Kleinhammer-Tramill, J., & Fowler, K. (Eds.), Qualitative Research Methods in Special Education (pp. 53-94). Denver, CO: Love Publishing Company.

Hoover-Dempsey, K. V. & Sandler, H. M. (1995). Parent involvement in children's education: Why does it make a difference? *Teachers College Record, 97*, 310-331.

Howard, T. C. & Reynolds. R. (2008). Examining parent involvement in reversing the underachievement of African American students in middle-class schools. *Educational Foundation, 22*(1-2), 79-98.

Humphries, M. L., Strickland, J., & Keenan, K. (2014). African American preschoolers' social and emotional competence at school: The influence of teachers and mother. *Journal of Education, 194*(1), 11-18.

IDEA. (2004). Retrieved from http://idea.ed.gov

IDEA-B. (2004). Retrieved from http://idea-b.ed.gov/explore/home.html

Jacobi, E. F., Wittreich, Y., & Hogue, I. (2003). Parental involvement for a new century. *New England Reading Association Journal, 39*(3), 11-16.

James, P., Kleinhammer-Tramill, J., & Fowler, K. (2009). *Qualitative Research Methods in Special Education.* Denver, CO: Love.

Jeynes, W. H. (2003). A META-ANALYSIS: The effects of parental involvement on minority children's academic achievement, *Education and Urban Society, 35*(2), 202-218.

Jones, L. N., (2014) . Barriers to parent involvement for children at risk (Doctoral dissertation, St. John's University). Retrieved from http://search.proquest.com.ezproxy.fiu.edu/results.

Kalyanpur, M., Harry, B. (2004). Impact of the social construction of LD on culturally diverse families: A response to Reid and Valle. *Journal of Learning Disabilities, 37*(6), 530-533.

Kalyanpur, M., Harry, B. (2012). *Cultural Reciprocity in Special Education: Building Family-Professional Relationships.* Baltimore, MD: Brookes.

Kim, Y. (2009). Minority parental involvement and school barriers: Moving the focus away from deficiencies of parents. *Educational Research Review, 4*, 80-102.

Layton, L. (2013, June 27). Academic achievement gap is narrowing, new national data show. *The Washington Post.* Retrieved from http://articles.washingtonpost.com/2013-06-27/local/40222935_1_achievement-gap-reading-test-test-scores

Lee, J., & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal, 43*(2), 193-218.

Lewis, L. L., Kim, Y. A., & Bey, J. A. (2011). Teaching practices and strategies to involve inner-city parents at home and in the school. *Teaching and Teacher Education, 27*(1), 221-234.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Thousand Oaks, CA: Sage Publishing.

Lopez, G. R., Scribner, J. D., & Mahitivanichcha, K. (2001). Redefining parental involvement: Lessons from high-performing migrant-impacted schools. *American Educational Research Journal, 38*(2), 253-288.

Mapp, K. (2003). Having their say: Parents describe why and how they are engaged in their children's learning. *School Community Journal, 13*(1), 35-64.

Marshall, C., & Rossman, G. B. (2006). *Designing Qualitative Research* (4th ed.). Thousand Oaks, CA: Sage Publishing.

Martinez-Cosio, M. (2010). Parents' roles in mediating and buffering the implementation of an urban school reform. *Education and Urban Society, 42*(3), 283-306.

McCormick. M. P., Cappella, E., O'Connor, E. E., & McClory, S. G. (2013). Parent involvement, emotional support, and behavior problems: An ecological approach. *The Elementary School Journal, 114*(2), 277-300.

McCray, R., Grant, C. M., & Beacham F. D., (2010). Pedagogy of self-development: The role the Black church can have on African American students. *The Journal of Negro Education, 79*(3), 233-248.

McDermott, P., & Rothenberg, J. (2000). Why urban parents resist involvement in their children's elementary education. *The Qualitative Report* [On-line serial], *5*(3/4). Available: http://www.nova.edu/ssss/QR/QR5-3/mcdermott.html

Moustakas, C. (1994). *Phenomenological research methods.* Thousand Oaks, CA: Sage.

National Center for Educational Statistics (2012).Retrieved from https://nces.ed.gov/programs/digest/d12/tables/dt12_104.asp

No Child Left Behind of 2001. Public Law No. 107-110, 115 Stat. 1425(2002).

Onwuegbuzie, A.J.& Leech, N.L. (2005). A typology of errors and myths perpetuated in educational research textbooks. *Current Issues in Education* [On-line], *8*(7). Available: https://cie.asu.edu/ojs/index.php/cieatasu/article/viewFile/1604/647

Onwuegbuzie, A. J., & Leech, N. L. (2007a). A call for qualitative power analysis. *Quality & Quantity, 41*(1), 105-121.

Onwuegbuzie, A. J., & Leech, N. L. (2007b). Validity and qualitative research: An oxymoron?. *Quality & Quantity, 41*(2), 233–249.

Pang, Y. (2011). Barriers and solutions in involving culturally linguistically diverse families in the IFSP/IEP process. *Making Connections, 12(2),* 42-51.

Parette, H. P., & Petch-Hogan, B. (2000). Approaching family: Facilitating culturally/linguistically diverse family involvement. *Teaching Exceptional Children, 35*(2), 2-10.

Patton, M. Q. (1990). *Qualitative Evaluation Methods* (2nd ed.). Thousand Oaks, CA: Sage.

Patton, M.Q. (2002). *Qualitative Research and Evaluation Methods*. Thousand Oaks, CA: Sage.

Paul, J., Kleinhammer-Tramill, J., & Fowler, K. (2009). *Qualitative Research Methods in Special Education*. Denver: Love Publishing Company.

Pena, D. C. (2000). Parent Involvement: Influencing factors and implications. *The Journal of Educational Research, 94*(1), 42-54.

Quezada, R. L., (2003). Going for the gold! Field reports on effective home-school-community partnership programs. *School Community Journal,* 137-156.

Seidman, I. (2013). *Interviewing as Qualitative Research: A Guide for Researchers in Educational and The Social Sciences* (4th ed.). New York, NY: Teachers College Press.

Sharp, E. A, & Ispa, J. M. (2009). Inner-city single Black mothers' gender-related childrearing expectations and goals. *Sex Roles, 60*, 656-668.

Sheldon, D. L., Angell, M. E., Stoner, J.B., & Roseland, B. D. (2010). School principals' influence on trust: Perspectives of mothers of children with disabilities. *The Journal of Educational Research, 103*(3), 159-170.

Spann, S. J., Kohler, F. W., & Soenksen, D. (2003). Examining parents' involvement in and perceptions of special education services: An interview with families in a parent support group. *Focus on Autism and Other Developmental Disabilities, 18*(4), 228-237.

Stanley, S. L. G., (2013). African American mothers of children with disabilities: Parent advocacy within rural special education (Doctoral dissertation, the University of Carolina at Greensboro). Retrieved from http://search.proquest.com.ezproxy.fiu.edu/docview.

Strauss. A., & Corbin, J. (1990). *Basics of qualitative research.* Newbury Park, CA: Sage.

Thompson, G. (2003). *What African American parents want educators to know.* Westport, CT: Praeger.

Thompson, P. W., (2014). African American parent involvement in special education: Perceptions, practice, and placement (Doctoral dissertation, University of California, San Diego). Retrieved from http://search.proquest.com.ezproxy.fiu.edu/results.

U.S. Department of Education. (n.d.). Retrieved from http://www2.ed.gov/parents/needs/speced/iepguide/index.html

U.S. Department of Education: Part A. (n.d.). Retrieved from https://www2.ed.gov/policy/elsec/leg/esea02/pg2.html#sec1118

Van Voorhis, F. (2003). Interactive homework in middle school: Effects on family involvement and science achievement. *The Journal of Educational Research 96*(6), 323-338.

Vaughn, S., Bos, C. S., & Schumm, J. S. (2011). *Teaching students who are exceptional, diverse, and at risk in the general education classroom*. Upper Saddle River, N.J: Pearson Education.

Williams, E. R., (2007). Unnecessary and unjustified: African American parental perceptions of special education. *The Education Forum, 71*, 250-261.

Williams, T. T. & Sanchez, B. (2012). Parent involvement (and uninvolvement) at an inner-city high school. *Urban Education, 47*(3), 625-652.

Williams, T. T., Sanchez, B., & Hunnell, J. (2011). Aligning theory with practice: Understanding school-family partnerships at an inner-city high school. *Children and Youth Services Review, 33*(5), 689-697.

Wilson, N. M., (2015). Question-asking an advocacy by African American parents at Individualized Education Program meetings: A social and cultural capital perspective. *Multiple Voices for Ethnically Diverse Exceptional Learners, 15*(2), 36-49.

Yosso, T. J., (2005). Whose culture has capital? A critical race theory discussion of community cultural wealth. *Race, Ethnicity, and Education, 8*(1), 69-91.

Young, C. Y., Austin, S. M., & Growe, R. (2013). Defining parental involvement: Perceptions of school administrators. *Education, 133*(3), 291-297.

APPENDIX

Possible interview questions are as follows:

I. Preliminary / Personal Data Questions

1. Please tell me a little about yourself.
   a. What's your name and age?
   b. Are you married?
   c. How would you define your nationality, race, culture?
   d. Are you employed? Where? What are your work hours?
   e. What's your job's policy for taking off to visit your child's school?

2. Tell me about your children.
   a. How many children do you have?
   b. Which of your children are in the special education program?
   c. What is his/her disability/exceptionality?
   d. What is his/her age and current grade level?
   e. What services does your child need? Who generally provides those services?

3. Tell me about your child's school.
   a. Is your child's school traditional, charter, magnet, etc.?
   b. How long has your child attended the school?
   c. Do you live in the same neighborhood as your child's school?
   d. How would you define the "atmosphere" of the school: friendly, intimidating, etc.?
   e. Are you satisfied with your child's school?

II. How is parental involvement defined / perceived for these members of the African American community?

1. What does the term "parent involvement" mean to you?
   a. What comes to mind when you think about that phrase?
   b. Do you have any examples of what it is *not*?

2. Tell me about your experiences with parent involvement when you were a child?
   a. How is your parent involvement with your son/daughter different or similar to your parents' involvement with you when you were a child?
   b. Are you comfortable with your level of parent involvement?
   c. Do you think that your child's disability impacts your level of involvement? How so? Why not?

3. How important is parent involvement to you?

II. How do conceptual differences in the definition of parent involvement between African American parents of students with disabilities and the mainstream culture impact parent/teacher dynamics?

1. Do you think that other people have the same ideas about parent involvement as you have?
   a. Tell me about that.
   b. Do you think that your level or type of involvement is pretty much the same as everybody else's?
      - Tell me more about that.

2. Do you think that other cultures define or experience parent involvement in the same ways as the African American community?
   a. Can you tell me about a time or incident when you observed parent involvement of someone from a different culture?
   b. Do you think that people from other cultures view African American parents the same way as themselves with respect to parent involvement?
      - Do you think that other people think Black people are as involved with their children as they might be?

3. Do you think that parents of children who are *not* in the special education programs experience parent involvement the same as parents of children with special needs?
   a. How is parent involvement different for parents of general education students?
   b. How has your involvement changed since your child was placed in special education?

4. Do you think that your child's teacher sees you as an involved parent?
      - How do you know that?
      - What has the teacher done or not done to make you feel that way?

   a. Do you think that the teacher's assessment of your involvement is a fair measure of your level of parent involvement?
   b. How has the teacher's perceptions of you affected your relationship with him/her? Affected your level of involvement?

III. What teacher characteristics/traits/actions, if any, are attributed to the level of parent involvement of African American parents of children with disabilities?

1. Tell me about the last IEP meeting your attended?
   a. How were you invited to the meeting?
      - Was that the best way to contact you?

b. Who were the members of the IEP team?

- Did you feel as though you were a member of the team?
- How did the other team members make you feel involved?

c. How much of what was happening at the meeting did you understand (a lot, some things, or very little)?

d. What concerns did you express at the meeting?

- Were those concerns addressed? How so? Why not?

e. How did you feel after you left the meeting?

2. Tell me about any other times that you visited your child/s school.
   a. How do you feel when you visit the school?
   b. Is there anything that the teacher does or does not do to make you feel welcomed?
   c. Have any of your child's teachers ever made you feel welcomed at the school?

3. What can teachers do to maintain or increase your level or type of parent involvement?

VI. What teacher characteristics/traits/actions, if any, adversely impact the level of parent involvement of African American parents of children with disabilities?

1. Tell me about a time when you visited your child's school and felt completely unwelcomed or uneasy about being there.
   a. Have you ever discussed this experience with anyone else?
   b. How did the classroom teacher help or hurt the situation?
   c. How did that incident change the way you interact with teachers, either during that time or now?

2. What role do school administrators play in your level or type of parent involvement?

VITA

PRINCESS BRIGGS

1994	Bachelor of Arts – University of Miami *Majors:* Special Education and Psychology Florida Teacher Certification Exceptional Student Education
2005	Master of Science – University of Miami *Specializations*: Exceptional Student Education, Pre-Kindergarten Disabilities, and English for Speakers of Other Languages
2013 – 2016	Adjunct in EEX 3070 Course Provided instruction to pre-service teachers for teaching children with special needs in an inclusive setting
2015 – 2017	Doctoral Candidate – Florida International University *Specialization:* Special Education *Areas of Interest:* Teacher Education and Parental Involvement

PUBLICATIONS AND PRESENTATIONS

Briggs, P. (2011). *Attention Deficit Hyperactivity Disorder*. Presented at the Family and Parenting Conference, HOPE Church, Davie, Florida.

Briggs, P. (2012). Room 214: Nurturing an evolving classroom culture. In Wynne, J., Delpit, L., & Miles, R. (Eds.), *Confessions of a white educator: Stories in search of justice and diversity* (pp. 53-60). Dubuque, IA: Kendall Hunt.

Lopes, A, Hernandez, K. & Briggs, P. (2012). *Alternatives to Standard English as Stepping Stones to Success*. Presented at Council for Exceptional Children Conference, Denver, Colorado.

Cramer, E., Pelegrini-Lafont, C., Briggs, P., Taylor, K., & Baptiste, B (2016). *Professional Development Needs to Implement State Standards for Students with Disabilities.* Presented at Council for Exceptional Children: Teacher Education Division Conference, Lexington, Kentucky.

PARENTAL INVOLVEMENT IN MIDDLE SCHOOL PREDICTING COLLEGE ATTENDANCE FOR FIRST-GENERATION STUDENTS

KHANH BUI
Pepperdine University

RYAN A. RUSH
Wabash College

Using data from the National Education Longitudinal Study, this report examined the relationship between parental involvement in eighth grade and college attendance by eight years after high school for students whose parents have no college education (i.e., first-generation students; n = 1,358) in comparison to students whose parents have some college education but no bachelor's degree (n = 2,130) and students whose parents have a bachelor's degree or higher (n = 1,795). Controlling for students' sociodemographic characteristics and past academic achievement, multivariate logistic regressions showed that among various dimensions of parental involvement, only parents' educational expectations predicted college attendance for first-generation students. For non-first-generation students, parents' educational expectations predicted college attendance less consistently or another dimension of parental involvement also predicted college attendance.

First-generation students are students whose parents have no college education (Nuñez & Cuccaro-Alamin, 1998). These students are less likely to enroll in and graduate from college in comparison to their peers whose parents have at least a bachelor's degree (Astin & Oseguera, 2005; Synder, Tan, & Hoffman, 2004). However, it is important that first-generation students pursue and earn a college degree because higher education is positively correlated with earned income (Synder et al., 2004) and negatively correlated with reliance on public assistance (National Center for Education Statistics, 1999).

Few studies have examined variables that predict first-generation students' enrollment in college. Using data from the National Education Longitudinal Study (NELS), which followed a sample from eighth grade in 1988 until eight years after high school in 2000, Horn and Nuñez (2000) and Choy (2001) found that first-generation students who started with algebra in eighth grade greatly increased their likelihood of completing advanced high school mathematics, which in turn more than doubled their chances of enrolling in a 4-year college within two years of high school graduation. Horn and Nuñez also found that parental involvement in the form of encouragement to take algebra in eighth grade played a role in this link between math curriculum and college enrollment. Horn and Nuñez's findings provide evidence for the importance of a specific form of parental involvement in predicting enrollment in higher education for first-generation students.

In the current study we built on prior research in three ways. First, we used a broader, multidimensional conceptualization of parental involvement to predict attendance at a 4-year college for first-generation students. Parents of first-generation students tend to come from low socioeconomic backgrounds (Choy, 2001); however, their active involvement in their children's education may mediate the negative effects associated with a lack of economic resources (Jacob & Harvey, 2005). Whereas the parents' socioeconomic status (SES) is relatively unchangeable, their involvement in their children's education is more malleable to change.

Second, in contrast to prior studies that had examined college enrollment two years after high school, we increased the point of assessment of college enrollment to eight years after high school. First-generation students tend to delay college attendance (Nuñez & Cuccaro-Alamin, 1998; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Thus, our extended time span would include first-generation students who delayed college enrollment for some additional years beyond the two years after high school graduation. Also, unlike many prior studies that defined academic achievement as grades (e.g., Nord & West, 2001), scores on standardized tests (e.g., Jacobs & Harvey, 2005) or even graduation from high school (e.g., Anguiano, 2004), this study defined it as attendance at a 4-year college.

Third, we kept the strengths of prior studies. We used data from NELS. We also examined variables in eighth grade because middle school experience is a precursor to high school experience, which then predicts college attendance (Hossler, Schmidt, & Vesper, 1999). First-generation students probably need intervention earlier than high school to prepare for and gain access to higher education.

First-Generation Students

Much of prior research on first-generation students has examined what happens to them once they enroll in college. Researchers have focused on their persistence in and graduation from college (Billson & Terry, 1982; Nuñez & Cuccaro-Alamin, 1998; Pratt & Skaggs, 1989; Warbuton, Bugarin, & Nuñez, 2001) or their experiences while in college (London, 1989; Riehl, 1994; Terenzini et al., 1996; Zwerling & London, 1992). The focus on their college persistence and graduation is understandable in light of statistics showing that first-generation students who earn a college degree have labor market outcomes similar to those of young adults whose parents are college educated (Choy, 2001; Nuñez & Cuccaro-Alamin, 1998).

Few studies, however, have examined what predicts whether they enroll in college in the first place. It is important to understand what predicts their college attendance because persistence in and graduation from college is impossible if these students do not first enroll. Even fewer studies have examined dynamic (process) variables prior to high school that might predict eventual college attendance. Identification of early process variables that might facilitate the students' enrollment in college is important if schools and parents want to maximize the students' likelihood of pursuing higher education. One process variable worth examining is parental involvement.

Parental Involvement

Parents typically serve as a continual and stable resource for their children over the lifespan (Trusty, 2001). Prior research has found that parents and the home environment they provide affect their children's academic achievement (Davis-Kean, 2005; Epstein, 1992). Grolnick and Slowiaczek (1994, p. 238) define parent involvement as the

"dedication of resources by the parent to the child within a given domain." In the domain of academic achievement, researchers have used different conceptualizations of parental involvement (for examples, see Epstein, 1992; Grolnick & Slowiaczek, 1994; and Hickman, Greenwood, & Miller, 1995). Singh, Bickley, Trivette, Keith, Keith, and Anderson (1995) argued that most definitions of parental involvement fall under four major categories: (a) parents' participation in school activities and programs (e.g., Nord & West, 2001); (b) communication with their child about school (e.g., Yap & Enoki, 1995); (c) restrictions at home that support learning (e.g., Peng & Wright, 1994); and (d) educational expectations for their child (e.g., Voelkl, 1993).

In a meta-analysis Fan and Chen (2001) found that overall parental involvement has a positive effect (mean $r = .25$) on students' academic achievement. The most consistent finding across studies is the importance of parents' educational expectations for their child, which had a mean r of .40 with academic achievement. The effect sizes were lower for parents' school participation (mean $r = .32$), communication between parents and child about school (mean $r = .19$), and home supervision (mean $r = .09$). These results indicate that the relationship between parental involvement and students' academic achievement should not be generalized across different operational definitions of parental involvement.

Higher SES and higher parental education are associated with children's higher academic performance (Davis-Kean, 2005; Fan, 2001; Lareau, 1987). However, parents' practices of involvement can compensate for less income or less education to benefit their children (Hoover-Dempsey & Sandler, 1997). Indeed, Sui-Chu and Willms (1996) found that parental involvement made a significant unique contribution to explaining variation in children's academic achievement over and above the effects associated with parental background. This finding has positive implications for disadvantaged students. Whereas family status variables such as race and SES are either entirely or mostly unchangeable, parental involvement is a dynamic (process) variable that is amenable to change. Several studies have found that process variables better predict school-related outcomes than do status variables (see Hoover-Dempsey & Sandler, 1997).

The Current Study

In the current study we examined the relationship between parental involvement and academic achievement for first-generation students. For our purposes, we used data from NELS because it has data on college attendance by eight years after high school and it is particularly strong in its coverage of items pertaining to parental involvement (Sui-Chu & Willms, 1996). Moreover, NELS has data from both the students and their parents about parental involvement, thus allowing examination of how each party's perceptions of parental involvement relate to students' college attendance.

In our analyses we compared first-generation students to their non-first-generation peers. Following Nuñez and Cuccaro-Alamin (1998), we categorized the students into three groups according to the highest level of education attained by either parent: students whose parents have no college education (first-generation students), students whose parents have some college education but no bachelor's degree, and students whose parents have a bachelor's degree or higher.

Our analyses attempted to answer the following questions:

1. What are the underlying dimensions of parental involvement, based on students' data versus parents' data?
2. Do the dimensions of parental involvement differentially predict

college attendance for first-generation students versus non-first-generation students?

3. Do the dimensions of parental involvement still predict college attendance once analyses control for sociodemographic variables and prior academic achievement?

Method

Sample

In the base year of 1988, NELS selected a nationally representative sample of 24,599 eighth graders from 1,052 schools in the United States. These students completed a questionnaire that gathered information about basic background variables, school work, educational and occupational aspirations, and social relationships. In addition, one parent (usually the mother) for each student completed a survey intended to measure family characteristics relevant to achievement. Although the current report used data from both students and parents, the unit of analysis was the student.

By the final follow-up in 2000, NELS had responses from 12,144 of the original participants. For the current study, we selected only those who had complete data for the variables under investigation. Among the 5,283 selected individuals, 25.7% had parents with no college education, 40.3% had parents with some college education but no bachelor's degree, and 34.0% had parents with a bachelor's degree or higher. See Table 1 for the sex and racial distribution for each group as well as for the entire sample.

Measures

Control Variables

Guided by the results of prior research on first-generation students (e.g., Horn & Nuñez, 2000) and parental involvement (e.g., Singh et al., 1995), this study included five control variables, which were all assessed in 1988 when the students were in eighth grade. (See Table 1 for descriptive statistics for all control variables.) Three of the control variables (sex, race, and yearly family income) pertained to sociodemographic characteristics. Students self-identified their sex. Students also self-identified their race as one of the following: Asian/Pacific Islander, Hispanic, Black, White, or American Indian/Alaskan Native. Race was dummy coded with 0 = White and 1 = minority (racial categories other than White). Parents reported total yearly family income as one of the following: 1(*none*), 2(*less than $1,000*), 3(*$1,000 - $2,999*), 4(*$3,000 - $4,999*), 5(*$5,000 - $7,499*), 6(*$7,500 - $9,999*), 7(*$10,000 - $14,999*), 8(*$15,000 - $19,999*), 9(*$20,000 - $24,999*), 10(*$25,000 - $34,999*), 11(*$35,000 - $49,999*), 12(*$50,000 - $74,999*), 13(*$75,000 - $99,999*), 14(*$100,000 - $199,999*), or 15(*$200,000 or more*).

The remaining two control variables (grades and scores on standardized tests) served as measures of prior academic achievement. Students reported their grades in school for the subjects of English, mathematics, science, and social studies from sixth to eighth grade. We used a composite measure representing their grade point average for these subjects on a 4.0 scale. For students' scores on standardized tests, we used a composite of their scores on standardized tests for reading and mathematics (see Curtin, Ingels, Wu, & Heuer, 2002, for details about these tests).

Parental Involvement Dimensions

On the basis of content analysis of the variables in the NELS database and on the basis of prior research with NELS data (e.g., Catsambis, 2002; Fan, 2001; Singh et al., 1995; Sui-Chu & Willms, 1996), we selected 14 items from the students' data and 18 items from the parents' data as indicators of parental involvement. These items are listed in the first two columns of Tables 2 and 3.

We subjected the students' items and the parents' items to separate factor analyses using principal component method of extraction with varimax rotation. We treated factors with eigenvalues greater than 1 as dimensions of parental involvement.

Students' data. The factor analysis of students' data yielded four dimensions of parental involvement (see last four columns of Table 2). We labeled the dimensions as home communication, school participation, home supervision, and educational expectations (cf. Fan, 2001; Singh et al., 1995; Sui-Chu & Willms, 1996). These four dimensions accounted for 53.6% of the variance in the set of 14 items. We constructed composites of these four dimensions as follows:

Home communication was the mean of 5 items that assessed how often the eighth grader discussed with the parents the following topics: (a) selecting courses or programs at school, (b) school activities or events of particular interest to the student, (c) things the student had studied in class, (d) planning high school program with the father, and (e) planning high school program with the mother. Each item was rated on a 3-point scale ranging 0(*not at all*) to 2(*3 or more times*). The internal consistency of this composite was good (Cronbach's $\alpha = .74$). (See Table 4 for the mean and standard deviation for this composite and the remaining composites.)

Table 1 Descriptive Statistics for Control Variables[1] by Parents' Level of Education

Variable	Entire Sample (N = 5,283)	Parents' Level of Education: No College (n = 1,358)	Some College (n = 2,130)	B.A. or Higher (n = 1,795)	Test of Between-Group Differences by Parents' Level of Education	Effect Size
Sex (% Female)	53.6%	57.1%	53.8%	50.9%	$\chi^2(2) = 12.01, p = .002$	$C^2 = .00$
Race (% Minority)	25.6%	30.3%[a]	25.6%[b]	22.1%[b]	$\chi^2(2) = 26.94, p < .001$	$C^2 = .01$
Family Income [2]	10.18 (2.38)	8.77[a] (2.42)	9.80[b] (2.04)	11.69[c] (1.81)	$F(2, 5280) = 824.91, p < .001$	$\eta^2 = .24$
Grade Point Average (GPA) [3]	3.09 (.70)	2.83[a] (.71)	3.02[b] (.70)	3.35[c] (.59)	$F(2, 5280) = 249.71, p < .001$	$\eta^2 = .09$
Standardized Test Composite [4]	53.21 (9.99)	48.32[a] (8.67)	51.75[b] (9.13)	58.64[c] (9.37)	$F(2, 5280) = 543.13, p < .001$	$\eta^2 = .17$

Note. All control variables were assessed in 8th grade (1988).

[1] For the variables sex and race, percentages are shown. For the variables family income, GPA, and standardized test composite, means (and standard deviations in parentheses) are shown.

[2] The range for family income was 1(*none*) to 15(*$200,000 or more*).

[3] GPA was on a 4.0 scale.

[4] Composite was compiled from scores on standardized math and reading tests. This composite had a range from 32.45 to 75.81.

[a, b, c] If a test of between-group differences was statistically significant ($p < .001$), follow-up contrast analyses were conducted. Percentages or means in the same row that do not share the same superscript letter differ significantly from one another ($p < .01$).

Table 2 Factor Loadings for Dimensions of Parental Involvement– Students' Data

Item[1]	Item Description	Parental Involvement Dimension			
		Home Discussion	School Participation	Home Supervision	Educational Expectations
1. BYS36A	Discuss programs at school with parents	.71			
2. BYS36B	Discuss school activities with parents	.62			
3. BYS36C	Discuss things studied in class with parents	.53			
4. BYS50A	Talk to father about planning high school program	.72			
5. BYS50B	Talk to mother about planning high school program	.79			
6. BYS37A	Student's parents attended a school meeting		.72		
7. BYS37B	Student's parents spoke to teacher/counselor		.62		
8. BYS37C	Student's parents visited student's classes		.69		
9. BYS37D	Student's parents attended a school event		.41		
10. BYS38A	How often parents check on student's homework			.60	
11. BYS38C	How often parents limit time watching TV			.72	
12. BYS38D	How often parents limit time going out with friends			.70	
13. BYS48A	How far in school student's father wants student to go				.94
14. BYS48B	How far in school student's mother wants student to go				.94
Cronbach's α for entire sample (N = 5,283)		.74	.51	.48	.92
Cronbach's α by parents' level of education					
	No college (n = 1,358)	.73	.51	.51	.93
	Some college (n = 2,130)	.71	.48	.45	.88
	B.A. or higher (n = 1,795)	.73	.47	.49	.87

Note: Factor loadings shown are for the data from the entire sample (N = 5,283).

[1] NELS variable names are listed in this column.

School participation was the sum of 4 items that assessed whether the parents had (a) attended a school meeting, (b) spoken with a teacher or counselor, (c) visited the student's classroom, or (d) attended a school event. Each item was coded as either 0(*no*) or 1(*yes*). The internal consistency of this composite was low (Cronbach's α = .51).

Home supervision was the mean of 3 items that assessed how often parents (a) checked on the student's completion of homework, (b) limited the amount of time the student may watch television, and (c) limited the amount of time for going out with friends on school nights. Each item was rated on a 4-point scale ranging from 1(*never*) to 4(*often*). The internal consistency of this composite was low (Cronbach's α = .48).

Educational expectations was the mean of 2 items that assessed the student's perception of the father's and then the mother's educational expectations for the student. The response options included 1(*less than high school*), 2(*graduate high school*), 3(*vocational, trade, business school*), 4(*attend college*), 5(*graduate from college*), and 6(*higher school after college*). The internal consistency of this composite was high (Cronbach's α = .92).

Parents' data. The factor analysis of parents' data yielded five dimensions of parental

Table 3 Factor Loadings for Dimensions of Parental Involvement– Parents' Data

Item[1]	Item Description	Parental Involvement Dimension				
		Home Discussion	School Participation	Contacts with School	Home Supervision	Educational Expectations
1. BYP66	How often talks to child about school experiences	.69				
2. BYP67	How often talks to child about high school plans	.86				
3. BYP68	How often talks to child about post-high school plans	.80				
4. BYP58D	Contacted school about fund raising		.64			
5. BYP58F	Contacted school about doing volunteer work		.70			
6. BYP59A	Belong to parent-teacher organization		.66			
7. BYP59B	Attend parent-teacher organization meetings		.67			
8. BYP59C	Take part in parent-teacher organization activities		.77			
9. BYP59D	Act as a volunteer at the school		.69			
10. BYP58A	Contacted school about academic performance			.81		
11. BYP58B	Contacted school about academic program			.75		
12. BYP58C	Contacted school about behavior			.68		
13. BYP64B	Family rule how early/late child may watch TV				.65	
14. BYP64D	Family rule how many hours child may watch TV on school days				.67	
15. BYP65A	Family rule about maintaining grade average				.60	
16. BYP65B	Family rule about doing homework				.69	
17. BYP76	How far in school parent expects child to go					.82
18. BYP83	Parent expects child to go on to additional education beyond high school					.83
Cronbach's α for entire sample (N = 5,283)		.73	.79	.65	.55	.66[¥]
Cronbach's α by parents' level of education						
	No college (n = 1,358)	.77	.75	.70	.56	.70
	Some college (n = 2,130)	.72	.75	.65	.52	.57
	B.A. or higher (n = 1,795)	.66	.80	.60	.58	.33

Note: Factor loadings shown are for the data from the entire sample (N = 5,283).

[1] NELS variable names are listed in this column.

[¥]Cronbach's alpha based on standardized items because the two items for this dimension have different scales. BYP76 is continuous, and BYP83 is dichotomous

involvement (see last five columns of Table 3). We labeled the dimensions as home communication, school participation, contacts with school, home supervision, and educational expectations (cf. Catsambis, 2001; Fan, 2001). These five dimensions accounted for 55.6% of the variance in the set of 18 items. We constructed composites of these five dimensions as follows:

Home communication was the mean of 3 items that assessed how often the parents talked to their eighth grader about his/her (a) school experiences, (b) high school plans, and (c) post-high school plans. The frequency ratings ranged from 1(*not at all*) to 4(*regularly*). The internal consistency of this composite was good (Cronbach's $\alpha = .73$).

School participation was the sum of 6 items that assessed whether the parents had (a) contacted the school about fund raising, (b) contacted the school about doing volunteer work, (c) belonged to a parent-teacher organization, (d) attended meetings of a parent-teacher organization, (e) participated in activities of a parent-teacher organization, or (f) served as a volunteer at the school. Each item was coded as either 0(*no*) or 1(*yes*). The internal consistency of this composite was good (Cronbach's $\alpha = .79$).

Contacts with school was the sum of 3 items that assessed whether the parents had contacted the school about the student's (a) academic performance, (b) academic program, or (c) behavior. Each item was coded as either 0(*no*) or 1(*yes*). The internal consistency of this composite was adequate (Cronbach's $\alpha = .65$).

Home supervision was the sum of 4 items that assessed whether the family had rules regarding (a) how early/late the child may watch television, (b) how many hours the child may watch television on school days, (c) maintaining a certain grade average, or (d) doing homework. Each item was coded as either 0(*no*) or 1(*yes*). The internal consistency of this composite was poor (Cronbach's $\alpha = .55$).

Educational expectations was the mean of 2 items that were standardized. For one item, parents reported how far in school they expected their child to go. The options included 1(*less than high school diploma*), 2(*GED*), 3(*high school graduation*), 4(*vocational, trade, or business school, less than 1 year*), 5(*vocational, trade, or business school, 1 – 2 years*), 6(*vocational, trade, or business school, 2 or more years*), 7(*less than 2 years of college*), 8(*2 or more years of college*), 9(*finish a 2-year program*), 10(*finish a 4/5 year program*), 11(*master's degree*), and 12 (*Ph.D., M.D., or other advanced degree*). For the other item, parents indicated whether they expected their child to go on to additional education beyond high school; their response for this item was coded as either 0(*no*) or 1(*yes*). The internal consistency of this composite was adequate (Cronbach's $\alpha = .66$).

Although the students' four dimensions of parental involvement have the same labels as four of the five dimensions of parental involvement from the parents' data, the four dimensions in common do not have identical items. We examined how well similar dimensions across sources of data correlated with each other. The correlations ranged from nonexistent ($r = -.01$ for the correlation between students' report of home supervision and parents' report of home supervision) to moderate ($r = .46$ for the correlation between students' report of educational expectations and parents' report of educational expectations). The mean correlation between students' dimensions and parents' dimensions was .17 (see Table 5 for all the correlations). Thus, students' assessments of parental involvement were on average only weakly correlated with parents' assessments of parental involvement.

College Attendance

In 2000, which was 12 years after eighth grade and 8 years after high school, respondents indicated whether they had ever attended a 4-year college. Their answer was coded as either 0(no) or 1(yes). Among the entire sample, 62.3% had attended a 4-year college.

Results

We used the statistical software SPSS for the current analyses. Following Finn and Rock (1997), we set the significance level at $p < .001$ for primary tests of significance and $p < .01$ for follow-up contrasts when the primary tests yielded significant results. We used these conservative Type I error rates to compensate for the large sample size, the large number of statistical tests, and artificially small standard errors. Because NELS sampled students within schools rather than through simple random sampling, the standard errors computed for student-level measures were smaller than they would be with simple random sampling.

Preliminary Analyses

Control Variables

The distribution for sex did not differ (at the $p < .001$ level) by parents' level of education, but the distribution of race did ($\chi^2[2] = 26.94$, $p < .001$; $C^2 = .01$), such that there was a greater percent of racial minorities among first-generation students than among their non-first-generation peers (see Table 1). Furthermore, a multivariate analysis of variance (MANOVA) showed that parents' level of education had an overall effect on the remaining three control variables (Pillai's Trace = .31; $F[6, 10558] = 317.63$, $p < .001$; $\eta^2 = .15$), such that as parents' level of education increased, mean scores for family income, students' GPA, and students' scores on standardized tests all increased as well (see Table 1). Among the control variables, parents' level of education had the largest effect on family income ($\eta^2 = .24$).

Students' Dimensions of Parental Involvement

A MANOVA showed that parents' level of education had an overall effect on the four dimensions of parental involvement derived from students' data (Pillai's Trace = .16; $F[8, 10556] = 117.07$, $p < .001$; $\eta^2 = .08$). As parents' level of education increased, mean scores on all four dimensions of parental involvement increased as well (see top panel of Table 4). Parents' level of education had the largest effect on educational expectations ($\eta^2 = .13$).

Parents' Dimensions of Parental Involvement

A MANOVA showed that parents' level of education had an overall effect on the five dimensions of parental involvement derived from parents' data (Pillai's Trace = .21; $F[10, 10554] = 122.71$, $p < .001$; $\eta^2 = .10$). As parents' level of education increased, mean scores on all dimensions of parental involvement, except for home supervision, increased as well (see bottom panel of Table 4). As with the students' data, the parents' data showed that parents' level of education had the largest effect on educational expectations ($\eta^2 = .14$).

College Attendance

As the parents' level of education increased, so did the rate of students' attendance at a 4-year college ($\chi^2[2] = 916.48$, $p < .001$; $C^2 = .15$). Among students whose parents had no college (first-generation students), only 37.3% had attended a 4-year college within eight years after high school, whereas the figure was 56.3% for students whose parents had some college education and 88.4% for students whose parents had a B.A. or higher.

Correlations between Dimensions of Parental Involvement and College Attendance

Among the parental involvement dimensions, educational expectations had the highest correlations with attending a 4-year college ($r = .35$ for students' data, and $r = .40$ for parents' data). In contrast, home supervision and contacts with school had the lowest correlations with attending a 4-year college (r's $\leq |.08|$; see the bottom of Table 5).

Table 4 Means (Standard Deviations) for Dimensions of Parental Involvement by Parents' Level of Education (Students' and Parents' Data)

			Parents' Level of Education				
Dimension of Parental Involvement	Range	Entire Sample (N = 5,283)	No College (n = 1,358)	Some College (n = 2,130)	B.A. or Higher (n = 1,795)	Univariate $F(2, 5283)$	η^2
Students' Data							
Home communication	0 – 2	1.40(.46)	1.24[a] (.48)	1.39[b] (.45)	1.52[c] (.43)	139.42*	.05
School participation	0 – 4	2.20(1.21)	1.80[a] (1.23)	2.16[b] (1.20)	2.53[c] (1.11)	149.26*	.05
Home supervision	1 – 4	2.78(.71)	2.69[a] (.73)	2.77[b] (.69)	2.87[c] (.71)	26.19*	.01
Educational expectations	1 – 6	4.94(1.01)	4.44[a] (.1.26)	4.90[b] (.95)	5.37[c] (.60)	377.38*	.13
Parents' Data							
Home communication	1 – 4	3.45(.53)	3.31[a] (.62)	3.48[b] (.50)	3.53[c] (.45)	77.13*	.03
School participation	0 – 6	1.72(1.87)	1.03[a] (1.49)	1.55[b] (1.73)	2.44[c] (2.02)	256.39*	.09
Contacts with school	0 – 3	1.08(1.08)	.87[a] (1.07)	1.11[b] (1.08)	1.21[c] (1.04)	39.42*	.02
Home supervision	0 – 4	3.06(1.06)	3.08 (1.07)	3.10 (1.01)	3.01 (1.10)	3.64	.00
Educational expectations	-3.39 – .70	.00(.86)	-.48[a] (1.17)	.00[b] (.78)	.37[c] (.37)	434.30*	.14

Note. All measures of parental involvement were assessed in 8th grade (1988).
[a, b, c] If a univariate test was statistically significant ($p < .001$), follow-up contrast analyses were conducted. Means in the same row that do not share the same superscript letter differ significantly from one another ($p < .01$).
*$p < .001$ for univariate F-test.

Table 5 Correlations among Students' Data for Parental Involvement, Parents' Data for Parental Involvement, and Students' College Attendance

Variable	1	2	3	4	5	6	7	8	9	10
Students' Data										
1. Home communication	-									
2. School participation	.30*	-								
3. Home supervision	.28*	.16*	-							
4. Educational expectations	.26*	.19*	.13*	-						
Parents' Data										
5. Home communication	.28*	.19*	.11*	.18*	-					
6. School participation	.19*	.37*	.09*	.19*	.22*	-				
7. Contacts with school	.04	.28*	.08*	.03	.16*	.22*	-			
8. Home supervision	.06*	.08*	.26*	-.01	.26*	.08*	.18*	-		
9. Educational expectations	.26*	.17*	.10*	.46*	.23*	.21*	.02	.03	-	
Students' College Attendance										
10. Attended 4-year college	.24*	.20*	.08*	.35*	.15*	.26*	.00	-.05*	.40*	-

Note. Correlations shown are for the entire sample (N = 5,283).
* $p < .001$

Logistic Regressions

We conducted multivariate logistic regressions to predict attending a 4-year college by using measures of parental involvement assessed in eighth grade. In our analyses, we included five control variables, also assessed in eighth grade: sex, race, family income, GPA, and score on standardized tests. We conducted logistic regressions separately by parents' level of education because it had an overall effect on the dimensions of parental involvement for both the students' data and the parents' data. In addition, because students' assessments of parental involvement were on average only weakly correlated with parents' assessments of parental involvement, we ran separate logistic models by source of data to explore the possibility that the relationship between parental involvement and college attendance may differ by source of data.

Multivariate logistic regression produces odds ratios that indicate the predicted odds of the outcome (attending a 4-year college) with a one-unit increase in the control or predictor variable divided by the predicted odds without the one-unit increase while simultaneously taking into account the relationships of all the other entered variables with the outcome variable. Odds ratios significantly greater than 1 indicate increased odds of the outcome (i.e., a positive relationship with the outcome). Odds ratios significantly less than 1 indicate decreased odds of the outcome (i.e., a negative relationship with the outcome). Table 6 shows the results for the logistic regressions with students' data for parental involvement, and Table 7 shows the results for the analyses with parents' data for parental involvement.

The Effects of Control Variables on College Attendance

For students whose parents have no college education (first-generation students). Only two of the five control variables predicted college attendance. The odds of attending a 4-year college increased with higher GPAs (*odds ratios* ranged from 2.38 to 2.50) and higher scores on standardized tests (*odds ratios* = 1.08).

For students whose parents have some college education. Three control variables significantly predicted college attendance. The odds of attending a 4-year college increased with higher family income (*odds ratios* ranged from 1.12 to 1.14), higher GPAs (*odds ratios* ranged from 2.33 to 2.44), and higher scores on standardized tests (*odds ratios* ranged from 1.06 to 1.07).

For students whose parents have a bachelor's degree or higher. The results were similar to those for the group whose parents have some college education. The odds of these students attending a 4-year college increased with higher family income (*odds ratios* ranged from 1.28 to 1.30), higher GPAs (*odds ratios* ranged from 2.54 to 2.87), and higher scores on standardized tests (*odds ratios* = 1.05).

The Effects of Parental Involvement on College Attendance

After controlling for students' sociodemographic characteristics and academic achievement in eighth grade, the analyses still showed that some dimensions of parental involvement predicted college attendance.

For students whose parents have no college education (first-generation students). The only dimension that predicted college attendance for first-generation students was educational expectations. The odds of attending a 4-year college increased with higher educational expectations (*odds ratio* = 1.35 for students' data; *odds ratio* = 1.49 for parents' data).

For students whose parents have some college education. The results differed by source of data. For the students' data for parental involvement, the odds of attending a 4-year college increased with higher educational expectations only (*odds ratio* = 1.32). For the

Table 6 Odds Ratios for Multivariate Logistic Regressions Predicting Students' Attendance at a 4-Year College Using Students' Data for Dimensions of Parental Involvement

Variable	Parents' Level of Education		
	No College (n = 1,358	Some College (n = 2,130)	B.A. or Higher (n = 1,795)
Control			
Sex (female = 1, male = 0)	1.06	.99	.78
Race (minority = 1, white = 0)	1.60	1.22	1.45
Family Income	1.10	1.14*	1.30*
Grade Point Average (GPA)	2.50*	2.44*	2.87*
Standardized Test Composite	1.08*	1.07*	1.05*
Parental Involvement			
Home communication	1.10	1.20	1.08
School participation	1.16	1.14	1.07
Home supervision	.88	1.08	1.04
Educational expectations	1.35*	1.32*	1.60*
Nagelkerke R^2	.36	.32	.27

* $p < .001$

Table 7 Odds Ratios for Multivariate Logistic Regressions Predicting Students' Attendance at a 4-Year College Using Parents' Data for Dimensions of Parental Involvement

Variable	Parents' Level of Education		
	No College (n = 1,358)	Some College (n = 2,130)	B.A. or Higher (n = 1,795)
Control			
Sex (female = 1, male = 0)	1.06	.99	.82
Race (minority = 1, white = 0)	1.54	1.17	1.48
Family Income	1.09	1.12*	1.28*
Grade Point Average (GPA)	2.38*	2.33*	2.54*
Standardized Test Composite	1.08*	1.06*	1.05*
Parental Involvement			
Home communication	1.27	1.02	1.49
School participation	1.09	1.16*	1.15
Contacts with school	1.00	.97	.94
Home supervision	.96	.96	.84
Educational expectations	1.49*	1.79*	1.71
Nagelkerke R^2	.36	.34	.28

* $p < .001$

parents' data for parental involvement, the odds of attending a 4-year college increased with both higher educational expectations (*odds ratio* = 1.79) and greater school participation (*odds ratio* = 1.16). None of the other dimensions of parental involvement from either source of data had significant effects on college attendance.

For students whose parents have a bachelor's degree or higher. The results differed by source of data. For the students' data for parental involvement, the odds of attending a 4-year college increased with higher educational expectations only (*odds ratio* = 1.60). For the parents' data, none of the dimensions of parental involvement had significant effects on college attendance.

Discussion

In this study we examined the relationship between parental involvement in eighth grade and attending a 4-year college by eight years after high school for first-generation students in comparison to two groups of non-first-generation students. We used data on parental involvement from both the students and the parents. Factor analyses yielded four similar dimensions of parental involvement across the sources of data. Those four dimensions included home communication about school, parents' participation in school activities, parents' supervision at home, and parents' educational expectations for their child. In addition, the parents' data yielded a fifth dimension: parents' contacts with school. These dimensions of parental involvement are consistent with those identified by other researchers (e.g., Catsambis, 2002; Fan, 2001; Singh et al., 1995; and Sui-Chu & Willms, 1996).

Parents' level of education had an effect on all dimensions of parental involvement, except for parents' report of home supervision. In general, parents of first-generation students had lower involvement in their children's education than did parents of non-first-generation students. Among all the dimensions of parental involvement, parents' level of education had the biggest effect on educational expectations. These results are similar to those from prior studies (e.g., Astone & McLanahan, 1991; Fan, 2001; and Lareau, 1987) showing that SES, which sometimes includes parents' level of education, has significant effects on parents' educational expectations for their children.

Students' assessments of parental involvement were only weakly correlated with parents' assessments of parental involvement. The generally low correlations may be due to the lower internal consistency of some dimensions (e.g., home supervision) and the lack of identical items across sources of data for other dimensions (e.g., school participation). Nonetheless, students and parents show moderate agreement in their assessment of parental educational expectations, which prior research has found to be most consistently correlated with academic achievement (Fan & Chen, 2001).

We conducted logistic regressions to examine the effects of parental involvement on college attendance while controlling for sociodemographic variables and prior academic achievement. We found that regardless of parents' level of education, students' sex and race did not predict college attendance; in contrast, students' prior academic achievement as measured by GPA and scores on standardized tests did. These results suggest that public policy and school initiatives to increase students' participation in higher education could invest in efforts to improve the students' grades and scores on standardized tests.

Although family income predicted college attendance for non-first-generation students, it did not do so for first-generation students. Even though parents of the first-generation students had lower income than did parents of non-first-generation students, the lower income was not a setback to first-generation

students' pursuit of higher education when other variables such GPA, scores on standardized tests, and parental involvement were taken into account. In sum, for first generation students, the status variables of sex, race, and family income did not have significant effects on college attendance.

In contrast, the process variable of parental expectations did predict college attendance for first-generation students. This result bodes well for parents of first-generation students because educational expectations are probably more malleable that the other dimensions of parental involvement. Participation in school activities requires time. Many parents do not participate in activities at school because they work full-time or part-time during school hours (see Epstein, 1992). In addition, participation in school activities may be especially difficult for parents with less education because they tend to have less flexible work schedules (Lareau, 1987), and they tend to lack resources tied directly to social class (e.g., education, prestige, income) that facilitate participation in school activities (Anguiano, 2004; Lareau, 1987).

Furthermore, home supervision and communication require both the time and personal attention of the parents. Parents of first-generation students may find it difficult to be involved in these ways if they are single working parents or if both parents work long hours in low-paying jobs. Moreover, as the child becomes an adolescent seeking independence, parental actions that seek to supervise and control their behaviors may not facilitate academic achievement (see Catsambis, 2001). Finally, prior research has shown that contacts with school occur mostly when students fall behind in school and represent parents' attempts to deal with already existing academic or behavioral problems (Catsambis, 2002; Sui-Chu & Willms, 1996).

High parental educational expectations, however, require little costs in terms of parents' time and other resources but produce big academic dividends for their children. Fan (2001) found that students who reported higher parental education expectations accelerated faster in their academic growth during the period from eighth to twelfth grade, over and above the effect of family SES. Jacobs and Harvey (2005) found that academically successful students tend to report that their parents have high academic and career aspirations for them, and that their parents have had the high expectations since their birth.

Although high educational expectations may not require much in terms of time and other resources from parents, some parents of first-generation students may not communicate high educational expectations to their children. Low-education parents generally had difficulties in school as children (Lareau, 1987) and, thus, may devalue academic achievement. In addition, parents who are preoccupied with hardships may find it difficult to verbalize high educational expectations (Balli, 1996). Nonetheless, it is important for parents of first-generation students to have high educational expectations for their children. Our results support Balli's argument that verbalizing high educational expectations can potentially mediate the effects of parents' low education. Even if parents dedicate little time per day to direct parent-child interaction, they can still communicate high educational expectations.

In addition, schools can encourage parents to have high educational expectations for their children. Teachers and administrators can do this in every contact with parents and through newsletters or other written material sent home with the students. Encouraging parents to have higher educational expectations for their children would probably garner higher compliance than encouraging parents to volunteer their time at school or donate other resources to the school. Moreover, high educational expectations have a

bigger effect on academic achievement than do the other forms of parental involvement (Fan & Chen, 2001).

Two psychological processes may explain why parents' educational expectations predict children's educational outcomes. First, students may internalize parental expectations and then live up to those expectations (McCaslin & Murdock, 1991). Second, parents may act toward their children in such a way that the children confirm the parents' educational expectations (cf. Madon, Jussim, & Eccles, 1997; Synder, 1984). Catsambis (2002) suggested that parents with high educational expectations for their children may actively encourage their children to prepare for college. Similarly, Fan (2001) argued that parental educational expectations may translate into a variety of educationally beneficial activities and behaviors on the part of the parents that facilitate their children's academic achievement.

Educational expectations also predicted college attendance for students whose parents have some college education but no bachelor's degree. Thus, this group of students also benefited from high parental educational expectations. In addition, the parents' school participation as reported by the parents, but not as reported by the students, predicted the students' attendance at a 4-year college. From the parents' perspective, their participation in school activities may yield benefits (e.g., a better understanding of the school environment) that help them to better prepare their children for high school and higher education. From the students' perspective, however, their parents' participation in school activities in middle school may not affect their academic motivation and performance because as adolescents they are seeking increasing independence from their parents.

Finally, for students whose parents have a B.A. degree or higher, parental educational expectations as reported by the students, but not as reported by the parents, predicted the students' attendance at a 4-year college. Perhaps parents' report of educational expectations had less predictive power with this group because expectations were consistently high to begin with (see also Jacobs & Harvey, 2005).

Overall, educational expectations generally predicted college attendance, but the other dimensions of parental involvement generally did not. We do not argue that the other dimensions of parental involvement are not important. Perhaps they were more important when the students were in elementary school and contributed to the students' academic achievement early on (see Epstein, 1992; Catsambis, 2001; Hickman et al., 1995), which in turn facilitated subsequent academic achievement. Nonetheless, our findings are consistent with prior research showing that among the various dimensions of parental involvement, parents' educational expectations for their child have the most consistent and strongest effect on academic achievement (Fan & Chen, 2001).

Several limitations of our analyses should be noted. First, we used data only from students with complete data for the variables under investigation. School dropouts and those who do not attend college are less likely to complete follow-up surveys (Fan, 2001). Thus, the results in this report may generalize to higher achieving students only. Second, our analyses were limited to measures of parental involvement that NELS does have. Although NELS has strong coverage of measures of parental involvement, it does not have an exhaustive collection of them. For example, NELS does not have measures that directly assess the emotional climate that parents provide at home or ways that parents recognize their child's academic accomplishments. Third, we do not have direct evidence on the causal relationship between parental involvement and college attendance. Perhaps it is not parental involvement that leads to college

attendance. Instead, parents may use their children's behaviors as regulators of their actions (Maccoby, Snow, & Jacklin, 1984), such that parents who see that their children are succeeding academically become more involved in ensuring the children's continued academic success. Alternatively, there could be reciprocal effects between parental involvement and academic achievement. For example, Seginer (1983) argued that students' excellent performance leads their parents to have high expectations which, in turn, lead to further academic achievement.

Despite these limitations, the current findings make several contributions to the literature on parental involvement and first-generation students. The results show that parents' educational expectations as far back as eighth grade significantly predicted college attendance 12 years later regardless of whether the parental involvement was assessed by the students or the parents. More importantly, whereas the process variable of educational expectations predicted higher education outcomes for first-generation students, the status variables of sex, race, and family income did not.

These results suggest that the effects of educational expectations are worth further examination. Future studies can examine cross-lagged relationships between parental educational expectations and academic achievement with panel data to gain an understanding of the prospective relationships between these two variables. In addition, studies can examine the process by which higher parental expectations may lead to higher educational achievement (for example, see Davis-Kean, 2005). The results of such studies could help researchers, schools, and parents to better prepare young people for higher education.

References

Anguiano, R. P. V. (2004). Families and schools: The effect of parental involvement on high school completion. *Journal of Family Issues, 25*(1), 61-85.

Astin, A. W., & Oseguera, L. (2005). Pre-college and institutional influences on degree attainment. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 245-276). Westport, CT: ACE/Praeger.

Astone, N. M., & McLanahan, S. S. (1991). Family structure, parental practices, and high school completion. *American Sociological Review, 56*, 309-320.

Balli, S. J. (1996). Family diversity and the nature of parental involvement. *The Educational Forum, 60*, 149-155.

Billson, J. M., & Terry, M. B. (1982). In search of the silken purse: Factors in attrition among first-generation students. *College and University, 58*(1), 57-75.

Catsambis, S. (2001). Expanding knowledge of parental involvement in children's secondary education: Connections with high school seniors' academic success. *Social Psychology of Education, 5*, 149-177.

Choy, S. (2001). *Students whose parents did not go to college: Postsecondary access, persistence, and attainment* (NCES 2001-126). U.S. Department of Education, NCES. Washington, DC: U.S. Government Printing Office.

Curtin, T. R., Ingels, S. J., Wu, S., & Heuer, R. (2002). *National Education Longitudinal Study of 1988: Base-year to fourth follow-up data file user's manual* (NCES 2002-323). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19*(2), 294-304.

Esptein, J. L. (1992). School and family partnerships. In M. Aiken (Ed.), *Encyclopedia of Educational Research* (6th, pp. 1139-1151). New York: MacMillan.

Fan, X. (2001). Parental involvement and students' academic achievement: A growth modeling analysis. *The Journal of Experimental Education, 70*(1), 27-61.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review, 13*(1), 1-22.

Grolnick, W. S., & Slowiaczek, M. L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development, 65*, 237-252.

Hickman, C. W., Greenwood, G., & Miller, M. D. (1995). High school parent involvement: Relationships with achievement, grade level, SES, and gender. *Journal of Research and Development in Education, 28*(3), 125-134.

Lareau, A. (1987). Social class differences in family-school relationships: The importance of cultural capital. *Sociology of Education, 60*(2), 73-85.

Horn, L., & Nuñez, A. (2000). *Mapping the road to college: First-generation students' math track, planning strategies, and context of support* (NCES 2000-153). U.S. Department of Education, NCES. Washington, DC: U.S. Government Printing Office.

Hossler, D., Schmidt, J., & Vesper, N. (1999). *Going to college: How social, economic, and educational factors influence the decisions students make.* Baltimore: The John Hopkins University Press.

Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education? *Review of Educational Research, 67*(1), 3-42.

Jacobs, N., & Harvey, D. (2005). Do parents' make a difference to children's academic achievement? Differences between parents of higher and lower achieving students. *Educational Studies, 31*(4), 431-448.

Lareau, A. (1987). Social class differences in family-school relationships: The importance of cultural capital. *Sociology of Education, 60*, 73-85.

London, H. B. (1989). Breaking away: A study of first-generation college students and their families. *American Journal of Education, 97*(2), 144-170.

Maccoby, E. E., Snow, M. E., & Jacklin, C. N. (1984). Children's dispositions and mother-child interaction at 12 and 18 months: A short-term longitudinal study. *Developmental Psychology, 20*(3), 459-472.

Madon, S., Jussim, L., & Eccles, J. (1997). In search of the powerful self-fulfilling prophecy. *Journal of Personality and Social Psychology, 73*(4), 791-809.

McCaslin, M. M., & Murdock, T. B. (1991). The emergent interaction of home and school in the development of students' adaptive learning. In M. Machr & P. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 7, pp. 213-259). Greenwich, CT: JAI Press.

National Center for Education Statistics. (1999). *Education Statistics Quarterly, 1*(2), p. 77. Washington, DC: U.S. Department of Education.

Nord, C. W., & West, J. (2001). Fathers' and mothers' involvement in their children's schools by family type and resident status (NCES 2001-032). U.S. Department of Education, NCES. Washington, DC: U.S. Government Printing Office.

Nuñez, A., & Cuccaro-Alamin, S. (1998). *First-generation students: Undergraduates whose parents never enrolled in postsecondary education* (NCES 1998-082). U.S. Department of Education, NCES. Washington, DC: U.S. Government Printing Office.

Peng, S. S., & Wright, D. (1994). Explanation of academic achievement of Asian American students. *Journal of Educational Research, 87*, 346-352.

Pratt, P. A., & Skaggs, C. T. (1989). First generation college students: Are they at greater risk for attrition than their peers? *Research in Rural Education, 6*(2), 31-34.

Riehl, R. J. (1994). The academic preparation, aspirations, and first-year performance of first-generation students. *College and University, 70*(1), 14-19.

Seginer, R. (1983). Parents' educational expectations and children's academic achievement: A literature review. *Merrill-Palmer Quarterly, 29*(1), 1-23.

Singh, K., Bickley, P. G., Trivette, P., Keith, T. Z., Keith, P. B., & Anderson, E. (1995). The effects of four components of parental involvement on eighth-grade student achievement: Structural analysis of NELS-88 data. *School Psychology Review, 24*(2), 299-317.

Snyder, M. (1984). When belief creates reality. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 18). New York: Academic Press.

Snyder, T. D., Tan, A. G., & Hoffman, C. M. (2004). *Digest of education statistics, 2003* (NCES 2005-025). U.S. Department of Education, National Center for Education Statistics. (2004). Washington, DC: Government Printing Office.

Sui-Chu, E. H., & Willms, J. D. (1996). Effects of parental involvement on eighth-grade achievement. *Sociology of Education, 69*(2), 126-141.

Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education, 37*(1), 1-22.

Trusty, J. (2001). Family influences on educational expectations of late adolescents. *The Journal of Educational Research, 91*(5), 260-270.

Voelkl, K. E. (1993). Academic achievement and expectations among African-American students. *Journal of Research on Developmental Education, 27*(1), 42-55.

Warbuton, E. C., Bugarin, R., & Nuñez, A., (2001). *Bridging the gap: Academic preparation and postsecondary success of first-generation students* (NCES 2001-153). U.S. Department of Education, NCES. Washington, DC: U.S. Government Printing Office.

Yap, K. O., & Enoki, D. Y. (1995). In search of the elusive magic bullet: Parental involvement and student outcomes. *School Community Journal, 5*(2), 97-106.

Zwerling, L. S., & London, H. B. (1992). *First-generation students: Confronting the cultural issues.* San Francisco: Jossey-Bass.

Copyright of Education is the property of Project Innovation, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Journal of Early Intervention
2015, Vol. 37(4) 300–318
© 2015 SAGE Publications
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/1053815115620210
jei.sagepub.com
SAGE

Systematic Review of Engagement in Culturally Adapted Parent Training for Disruptive Behavior

Ashley M. Butler[1] and Courtney Titus[1]

Abstract

This article reviews the literature reporting engagement (enrollment, attendance, and attrition) in culturally adapted parent training for disruptive behavior among racial/ethnic minority parents of children ages 2 to 7 years. The review describes the reported rates of engagement in adapted interventions and how engagement is analyzed in studies, methods to develop adaptations, and adaptations that have been implemented. Seven studies are identified. Parental engagement varied across and within studies. Only one study examined whether adaptations improved engagement compared with non-adapted intervention. Frequent methods to develop adaptations were building partnerships or conducting interviews/focus groups with minority parents or community members. Adaptations included addressing cultural beliefs (perceptions of parenting skills), values (interdependence), or experiences (immigration) that affect parenting or receptivity to interventions; ensuring racial/ethnic diversity of interventionists; and addressing cultural relevancy and literacy level of materials. Future research should examine engagement in adapted interventions compared with non-adapted interventions and examine factors (e.g., immigration status) that may moderate impact on engagement.

Keywords

culture, adaptations, parent training, racial/ethnic minority, behavior

Introduction

Disruptive behavior in early childhood consists of non-compliant, delinquent, argumentative, and aggressive behaviors. Disruptive behavior is associated with a number of problems later in life including emotional and behavioral disorders (Belden, Thomson, & Luby, 2008; Ezpeleta et al., 2014; Hong, Tillman, & Luby, 2015), substance abuse (Gunter, Arndt, Riggins-Caspers, Wenman, & Cadoret, 2006), adolescent violence, and adult criminality (Moffitt, 1993; Tremblay et al., 1992). These negative outcomes indicate the importance of effective early treatment and prevention of disruptive behaviors. Parent training interventions are effective for addressing disruptive behavior among young children (Eyberg, Nelson, & Boggs, 2008; Lundahl, Risser, & Lovejoy, 2006). Parent training to address disruptive behavior refers to programs that prepare parents to manage behavioral problems and promote prosocial behavior (Feldman & Kazdin, 1995).

[1]Baylor College of Medicine, Houston, TX, USA

Corresponding Author:
Ashley M. Butler, Department of Pediatrics, Baylor College of Medicine, 1102 Bates St., Suite 940, Houston, TX 77030, USA.
Email: ambutler@bcm.edu

Low Engagement in Parent Training and Disparities in Disruptive Behavior Outcomes

Interventions that include parent training show positive behavior outcomes for racial/ethnic minority families who are retained in interventions (Huey & Polo, 2008). *Minority* families are defined as the following groups in the United States: African American, Hispanic/Latino, Asian American, Native Hawaiian and Other Pacific Islander, and American Indian and Alaska Native (Humes, Jones, & Ramirez, 2011). Unfortunately, low engagement in parent training among minority parents is a significant threat to the potential impact for decreasing the significant racial/ethnic disparities in disruptive behavior outcomes. *Engagement* is most often defined as intervention use, which consists of enrollment, attendance, and retention (McKay & Bannon, 2004). Disparities in outcomes associated with disruptive behavior include higher rates of parental stress, school failure, and juvenile justice involvement among minority children with disruptive behavior (Ezpeleta, Keeler, Erkanli, Costello, & Angold, 2001; Fite, Wynn, & Pardini, 2009; Hinojosa et al., 2012). Literature reviews indicating (a) positive outcomes among minority children with disruptive behavior whose parents demonstrate high-intervention attendance (Huey & Polo, 2008; Miranda et al., 2005) and studies demonstrating (b) better outcomes among minority children of parents who are retained in parent training (Begle, Lopez, Cappa, Dumas, & de Arellano, 2012) underscore the importance of identifying potential strategies to maximize enrollment, attendance, and retention.

Cultural Adaptation and Engagement in Parent Training Among Minority Parents

Scholars have argued that culturally adapting interventions is one strategy for maximizing engagement among minority families (Bernal, 2006; Bernal, Jiménez-Chafey, & Domenech Rodríguez 2009; Lau, 2006; Parra Cardona et al., 2012). *Cultural adaptation* is defined as systematic modifications of an intervention to consider language, culture, and context in a way that is compatible with family's cultural patterns, meanings, and values (Bernal et al., 2009). Scholars have indicated that cultural adaptations of interventions may be beneficial for maximizing engagement when data-based evidence supports (a) the need to address a distinct set of risk and resilience factors that contribute to disruptive behavior among a minority group or (b) the need to enhance the social validity of the intervention for minority families (Lau, 2006). *Social validity* is the acceptability and viability of an intervention when delivered among a particular group (Foster & Mash, 1999).

Research Support for Addressing Distinct Risk/Resilience in Adapted Parent Training

Research has indicated that distinct cultural experiences and beliefs play a role in disruptive behavior among some minority groups. Ineffective coping with discrimination among parents is associated with higher disruptive behavior among young African American children (Caughy, O'Campo, & Muntaner, 2004). Stronger parental ethnic identity is associated with fewer disruptive behavior problems among African American, Latino, and Asian parents (Calzada, Brotman, Huang, Bat-Chava, & Kingston, 2009). Furthermore, stronger parental values of independence (a U.S. American cultural value) among Mexican immigrant mothers are associated with higher disruptive behavior among Mexican American children (Calzada, Huang, Anicama, Fernandez, & Brotman, 2012). These findings suggest that adaptation of parent training to address culturally distinct risk or protective factors of disruptive behavior among minority families may increase engagement by improving parental perceptions of the relevance of intervention content to promote children's prosocial behavior.

Research Support for Addressing Social Validity in Adapted Parent Training

Problems with social validity may be indirectly indicated when there is lower engagement in non-adapted parent training among minority parents or directly indicated when there is lower acceptability of intervention content among minority parents (Lau, 2006). With regard to indirect evidence of problems with social validity, a number of studies have demonstrated minority parents are less likely than non-minority parents to engage in non-adapted parent training to address early childhood behavior problems or prosocial behavior (Lavigne et al., 2010; Orrell-Valente, Pinderhughes, Valente, & Laird, 1999; Reid, Webster-Stratton, & Beauchaine, 2001). In a study of standard parent training for young children, low-income racial/ethnic minority status predicted treatment dropout 73% of the time; however, low-income non-racial/ethnic minority status predicted treatment retention 80% of the time (Lavigne et al., 2010). This finding suggests that lower engagement among minority families may not be entirely due to racial/ethnic differences in socioeconomic status. With regard to more direct evidence of problems with social validity, studies have shown an association between race/ethnicity and the acceptability of parenting strategies that are commonly addressed within the content of parent training interventions. Studies showed that African American parents are more acceptable of spanking than non-racial/ethnic minority parents, and findings indicate this difference is not entirely due to racial differences in socioeconomic status (Regalado, Sareen, Inkelas, Wissow, & Halfon, 2004; Slade & Wissow, 2004; Wissow, 2001). Qualitative data obtained from therapists who delivered parent training to diverse families indicated that intervention modifications were often needed to enhance minority parents' receptivity to parenting strategies, such as ignoring minor misbehavior (Self-Brown et al., 2011). It is important to further note that racial/ethnic differences in the acceptability of parenting strategies may be due to the influence of cultural beliefs on parenting practices. Cultural beliefs about interdependence among Asian and Hispanic parents (Chao & Kanatsu, 2008), beliefs about racial socialization goals and identity among African American parents (Hill & Tyson, 2008), and the cultural value of respect among Hispanic parents (Calzada et al., 2012) are associated with various parenting practices that are commonly addressed in parent training programs. Overall, the body of literature indicating low engagement in non-adapted parent training interventions and lower acceptability of parenting techniques commonly taught in parenting training programs among minority families signify that cultural adaptation may help increase engagement among minority parents by enhancing parental receptivity to intervention content.

Despite the attention to the potential benefit of culturally adapted interventions to enhance engagement in parent training among minority parents of young children (Bernal, 2006; Bernal et al., 2009; Lau, 2006; Parra Cardona et al., 2012), a paucity of literature summarizes research in this area. The limited literature that has reviewed culturally adapted parent training has focused on the outcomes of interventions (Ortiz & Del Vecchio, 2013). A recent literature review (Ortiz & Del Vecchio, 2013) reported (a) a number of culturally adapted parent training interventions showed improved outcomes among minority families, and (b) only one study has been designed to compare the outcomes of culturally adapted parent training with non-adapted parent training, with results showing no incremental benefit of culturally adapted parent training on child and family outcomes (K. McCabe & Yeh, 2009). Although researchers have noted that strategies explicitly designed to explore a family's culture have been implemented as one approach to increase engagement in interventions (Becker et al., 2015; Huey & Polo, 2008), no study has reviewed the literature on parental engagement in culturally adapted parent training. Additional review of the research that describes the reported rates of parental engagement in adapted interventions, summarizes the methods that have been used to develop adaptations, and identifies the cultural adaptations that have been reported in the literature can provide directions for future research examining parental engagement in adapted parent training for young minority children.

Current Review

The purpose of this review is to synthesize the literature on studies reporting minority parents' engagement in culturally adapted parent training interventions that address disruptive behavior among young children (ages 2-7 years). Specific aims of the review include (a) to describe rates of parental engagement in adapted interventions and summarize how engagement is analyzed in studies, (b) to summarize methods that have been used to develop cultural adaptations for parent training with minorities, and (c) to identify the cultural adaptations that are reported in the relevant literature.

Method

Search Terms

Searches using the PubMed and PsycINFO databases (years 1970 through March 2014) were conducted. The search consisted of the following key terms or key term combinations: *treatment, interventions, prevention, child, preschool age, disruptive behavior, aggression, parent training, parenting, oppositional defiant disorder, conduct problems, and behavior disorder*. Searches were conducted using a minimum of two key terms/key-term combinations, and all possible combinations of key terms/key-term combinations were searched. This initial search of all possible key term combinations yielded 40,162 articles. Articles were selected for further review by one of the study authors if the abstract or study title (if the abstract was not available) indicated the study examined an intervention for children's behavior. The number of articles identified for further review was 338. The search was supplemented by examining the database of studies included in previous parent training reviews and reviews of interventions for disruptive behavior. Therefore, five additional articles with abstracts indicating the study examined an intervention for children's behavior were included.

Selection Criteria

Studies were included in this review if they met the following criteria: (a) the goals of the intervention included affecting disruptive behavior by delivering an intervention for young children (2-7 years old) that was explicitly adapted to consider language, culture, socioeconomic status, or social context (e.g., parent education/literacy, poverty, discrimination) for a specific minority group(s); (b) results showed statistically significant positive effect(s) on at least one outcome measure of parenting and/or child disruptive behavior; (c) descriptive information regarding minority parents' engagement (enrollment, attendance, or attrition) was reported; and (d) quasi-experimental or experimental design. We determined an intervention was explicitly adapted when the authors specified that the intervention was developed or modified for a specific racial/ethnic minority group(s) and described the adaptations. Case studies, single-subject design studies, dissertations, studies focused on children with an autism spectrum disorder, studies that adapted an intervention only by translating materials into a different language, and studies conducted outside the United States or Puerto Rico were excluded. Publications were screened in two phases to determine whether eligibility criteria were met. In the first phase, (a) the abstract and/or methods sections of the articles were screened to determine whether the child age range criterion was met, (b) the methods and results sections of the articles were reviewed to determine whether engagement (enrollment, attendance, or attrition) was reported, and (c) the results section was reviewed to determine statistically significant improvement on at least one outcome measure. In the second phase, articles were examined to determine whether the intervention was explicitly adapted to consider language, culture, or socioeconomic/social context.

Data Collection Process

The study authors developed a data extraction document, pilot tested it on two included studies, and refined it accordingly. The following data elements were extracted from the included studies: sample demographic characteristics, recruitment and retention strategies, sample size, descriptive information about the interventionists, descriptive data on engagement, descriptions of methods that were used to culturally adapt interventions, descriptions of the cultural adaptations that were implemented, and whether the study involved statistical analysis to determine whether cultural adaptation improved engagement. All articles were reviewed independently by the two study authors, and any disagreements (6% of articles) were resolved by further discussion and review.

Results

Our initial search yielded 343 articles. Seven studies met inclusion criteria (Figure 1). Table 1 indicates characteristics of the seven reviewed studies that met inclusion criteria. For each study, we calculated engagement based on the availability of data reported. Engagement was categorized as enrollment, attendance, and dropout/attrition. Enrollment was calculated as the percentage of parents who enrolled in the intervention after meeting eligibility criteria or after being informed of the opportunity to participate in the intervention. Attendance was calculated as the percentage of the average number of sessions attended. Finally, attrition was calculated as the percentage of parents who dropped out of the intervention.

Rates of Engagement in Culturally Adapted Parent Training

Table 1 shows that the percentages of parental engagement (enrollment, average number of attended sessions, and dropout) varied across studies. Enrollment, defined as the percentage of parents who were eligible and invited to participate in the intervention, was reported in four studies. Rates of enrollment ranged from 30% to 84%. We were able to calculate in five studies the percentage of the average number of sessions attended. The percentages ranged from 36% to 85%. Finally, dropout was reported in two studies. One study had 5% attrition, and the second study had 43% attrition. Importantly, while four of the seven studies included only parents from minority backgrounds, three of the seven studies included non-minority and minority parents (Table 1). In these three studies, the percentages of engagement were reported for the total sample of non-minority and minority parents.

Analysis of Engagement in Culturally Adapted Parent Training

Only one study was designed to examine statistically whether culturally adapted parent training improved engagement among minority parents. Using a randomized controlled trial, K. McCabe and Yeh (2009) found that culturally adapted parent training compared with non-adapted parent training did not show significant differences in dropout among Mexican American families.

Methods for Developing Cultural Adaptations

Reported methods for developing cultural adaptations in each study are reported in Table 2 and described below.

Identification of culturally distinct protective factors of disruptive behavior. One study based adaptations on literature documenting a culturally related protective factor of disruptive behavior (e.g.,

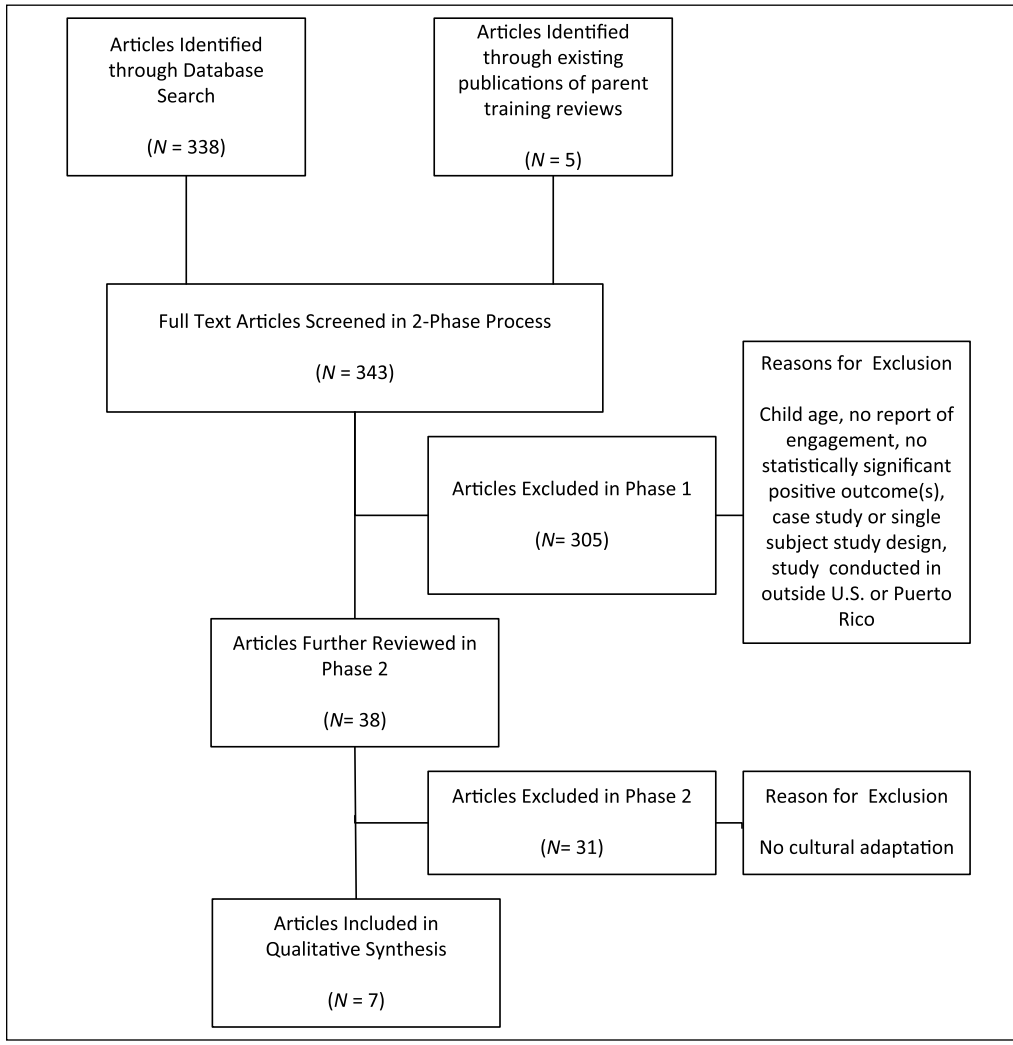


Figure 1. Flow of study selection.

effective parental coping with discrimination; Caughy et al., 2004). Coard, Wallace, Stevenson, and Brotman (2004) anchored their modifications in empirical research demonstrating the relationship between racial socialization parenting practices and positive outcomes for African American families. *Racial socialization* is defined as the processes by which children acquire the behaviors, perceptions, values, and attitudes of a racial group and develop the perception of seeing themselves and others as members of the group (Coard et al., 2004).

Identification of cultural factors that may affect intervention delivery. One study referenced literature identifying cultural values, experiences, and beliefs that are important for intervention delivery among Mexican American parents. K. M. McCabe, Yeh, Garland, Lau, and Chavez (2005) identified traditional values of familism, personalismo, collectivism, relationship hierarchy/authority, and adherence to traditional gender roles. *Familism* is a value placed on the importance of relationships with family relative to friends or co-workers, particularly in matters of child rearing and child discipline (Zuniga, 1997). *Personalismo* is a value placed on warm interpersonal

Table 1. Characteristics of Reviewed Studies and Parent Enrollment, Attendance, and Dropout.

Study/adapted PT	Sample type	Study exclusion criteria	Race/ethnicity of study sample[a]	Family income	Parent education	Child sex (% male)	Child age	*N*	Interventionist[b]	% enrollment[c]	% average number of attended sessions	% dropout
Baker, Arnold, and Meagher (2011)/ incredible years	Families recruited from child care centers	None	25% AA 31% HA 30% NHW 14% Mixed/ Other	All AAs and HAs from centers where median income was $28,250	Not reported	52%	*M* = 4.6 years	51	Clinical psychology doctoral students	41% AA 30% HA 78%NHW	53% AA 73% HA 64% NHW	N/A
Brotman et al. (2011)/parent corps	Families of children enrolled in pre-K program	Non-English speaking	39% AA 24% HA 12% AS 12% Mixed 13% NHW	53% below 150% federal poverty level	44% > high school diploma	44%	*M* = 4.1 years	118	Psychologist, social workers, teachers, educational assistants, and family workers	42% All racial/ ethnic groups[d]	46% All racial/ ethnic groups[d]	N/A
Gross et al. (2009)/ Chicago parenting program	Children in childcare serving low-income families	Non-English speaking	59% AA 32% HA 9% Other	Not reported	81% > high school diploma	56%	2-4 years	156	Trained group leaders	N/A	36% All racial/ ethnic groups	N/A
Coard, Foy-Watson, Zimmer, and Wallace(2007)/ culturally modified helping the non-compliant child)	AA Families recruited from the community	Child mental health, medical, or neurological condition; bi-racial caregivers and children	100% AA	50% received public assistance	Not reported	60%	5-6 years	16	Trained group leaders	84% AA	85% AA	N/A

(continued)

Table 1. (continued)

Study/adapted PT	Sample type	Study exclusion criteria	Race/ethnicity of study sample[a]	Family income	Parent education	Child sex (% male)	Child age	*N*	Interventionist[b]	% enrollment[c]	% average number of attended sessions	% dropout
Matos, Bauermeister, and Bernal(2009)/ culturally modified parent-child interaction therapy	HA Children with IQ >80, attention deficit hyperactivity disorder, and all except one with oppositional defiant disorder	Child developmental disability; parental domestic violence, major depression, substance abuse, or mental retardation	100% HA	Not Reported	Not Reported	Not Reported	4-6 years	20	Graduate students	N/A	N/A	5% HA
McCabe and Yeh (2009)/culturally modified parent-child interaction therapy	HA Children with disruptive behavior	Participation in another intervention for child disruptive behavior	100% HA	67% ≥ high school diploma	Not reported	70%	4-6 years	21	Graduate students	82% HA	N/A	43% HA
O'Connor, Rodriguez, Cappella, Morris, and McClowry (2012)/ INSIGHTS	Family of children enrolled at schools	None	54% AA 44% HA 2% Other	Not reported	Not reported	56%	*M* = 6.07 years (*SD* = 1.01	202	Facilitators	N/A	70% All racial/ ethnic groups[d]	

Note. PT = Parent Training; AA = African American; HA = Hispanic; NHW = Non-Hispanic White; AS = Asian.

[a]Percentages reflect the racial/ethnic makeup of the entire sample completing enrollment.

[b]Information in this column is the title used in the article to describe the interventionists.

[c]Percentage is the proportion parents who enrolled in the intervention after meeting eligibility criteria or after being informed of the opportunity to participate in the intervention.

[d]Percentage includes minority and non-Hispanic White families.

Table 2. Surface and Deep Structure Cultural Considerations in Parent Training With Young Racial/Ethnic Minority Children.

Study	Strategies to develop cultural adaptations	Surface structure considerations[a]	Deep structure considerations[b]	Engagement	Recruitment/retention strategies
African American-only sample					
Coard, Wallace, Stevenson, and Brotman (2004)	Used literature documenting racial socialization as a culturally distinct protective factor of disruptive behavior Focus groups with AA parents	Matched race/ethnicity of group leaders to parents [constituent-involving] Used African American common language expression, such as use of the term *we* [sociocultural] Intervention delivered in setting designed for African Americans (i.e., decorations that represent African Americans) [sociocultural]	Taught parental racial socialization practices [sociocultural; evidential] Emphasized values associated with AA background (i.e., collective responsibility) [sociocultural] Used African proverbs, sayings and affirmations, poems, quotes, symbols, and pledges [sociocultural] Used prayer [sociocultural]	84% enrollment 85% attendance	Recruitment included informal presentations by research staff at local community agencies Recruitment materials emphasized strengths and culturally based philosophy Research staff were AA Pictures of program staff and biographical narratives on all written recruitment materials Research assessments completed in family's home US$30 reimbursement for research assessments Meals/child care provided
Hispanic-only sample					
Matos, Torres, Santiago, Jurado, and Rodriguez (2006)	Interviews with Puerto Rican parents and therapists Used observations from pilot study Used framework of cultural sensitivity (Bernal, Bonilla, and Bellido., 1995)	Translated materials into Spanish [linguistic] Simplified parent materials [linguistic] Provided examples in parent materials that appear relevant to the daily life of Puerto Ricans (e.g., manual examples that included objects such as chimney/ snowman were replaced) [peripheral]	Implemented different discipline strategy (loss of privileges) than outlined in non-adapted intervention (time-out) [sociocultural] Discussed extended family involvement in treatment and parenting [sociocultural] Implemented psycho- educational module to address expectations (topics included risk/protective factors, etiologies of behavior problems) Extended session duration; changed termination criteria	5% Dropout	Recruitment included newspaper, TV, and radio advertisements, and preschool/clinic referrals US$15-US$40 research assessments incentives

(continued)

Table 2. (continued)

Study	Strategies to develop cultural adaptations	Surface structure considerations[a]	Deep structure considerations[b]	Engagement	Recruitment/retention strategies
McCabe, Yeh, Garland, Lau, and Chavez (2005)	Focus groups with Mexican American parents and therapists Literature search for traditional values, practical treatment barriers, and cultural barriers Consultation from Mexican American therapists, cultural adaptation experts, and the intervention developer	Translated materials into Spanish [linguistic] Simplified parent materials [linguistic] Spanish speaking interventionists	Renamed intervention and used another word for "therapist" to address stigma [sociocultural] Used engagement protocol to address treatment expectations/extended family involvement [sociocultural] Assessed culturally influenced beliefs that may affect intervention response [sociocultural] Elicited parental complaints due to value of respect for authority [sociocultural] Attended to rapport building due to the value of personalismo [sociocultural]	82% Enrollment 43% Dropout	Recruitment by phone US$100 research assessment incentives
Diverse racial/ethnic minority sample					
Baker, Arnold, and Meagher (2011)	Not reported	Spanish language materials [linguistic] Bilingual intervention leaders	"Cultural differences" in parenting discussed during program [sociocultural]	41% AA Enrollment 30% HA Enrollment 53% AA Attendance 70% HA Attendance	Recruitment included mailings; US$30 recruitment meeting incentives Sessions provided in evening Meals/child care provided Contacted after missed sessions

(continued)

Table 2. (continued)

Study	Strategies to develop cultural adaptations	Surface structure considerations[a]	Deep structure considerations[b]	Engagement	Recruitment/retention strategies
Brotman et al. (2011)	Established Community Advisory Board	Racial/ethnic minority intervention leaders [constituent-involving] Delivered in school setting	"Cultural values" related to parenting discussed during program (e.g., values related to obedience and respect for elders) [sociocultural]	72% Enrollment 46% Attendance	Recruitment presentations by study staff Research measures completed in home/school Intervention conducted at school Meals/child care provided Activities provided for older children in family Focused on relationship and motivation building
Gross, Garvey, Julion, and Fogg (2007)	Established a Parent Advisory Council	Used videotape vignettes of racially/ethnically diverse families from the racial/ethnic minority group(s) [peripheral] Matched race/ethnicity of group leaders to parents [constituent-involving] Intervention delivered in community child care setting	Provided teaching rationales, videotaped vignettes, and handouts to address negative perceptions of parenting strategies [sociocultural] Addressed stressors of immigration, maintaining traditions, and racism [sociocultural]	36% Attendance	Recruited from child care centers Meals/child care provided Provided US$30 incentives for research assessment
O'Connor, Rodriguez, Cappella, Morris, and McClowry (2012)	Cultural/content experts Used observations from pilot study Community partnership	Addressed the cultural relevance of intervention materials [peripheral]	Invited additional parental figures (e.g. extended family) to participate [sociocultural]	70% Attendance	Provided US$30 incentives for research assessment Provided up to US$170 for intervention attendance

Note. AA = African American; HA = Hispanic. Peripheral strategies are modifications to the observable properties of interventions. Linguistic strategies alter language used in materials to make them comprehensible. Constituent involving strategies utilize the cultural knowledge and experiences of members of the minority group. Sociocultural strategies recognize, reinforce, or build upon cultural values, beliefs, and behaviors. Evidential strategies use "evidence" for a specific group or experiences from individuals with similar backgrounds to increase perceived relevance of information.

[a]Defined as matching intervention materials and messages to observable patient characteristics.

[b]Defined as incorporating the cultural, social, historical, environment, or psychological aspects.

relationships over individual achievements (Martinez & Eddy, 2005). The value of *collectivism* emphasizes affiliation and cooperation, and avoidance of confrontation and competition (Kashima et al., 1995). Traditional gender roles in Mexican American families include maternal responsibility for child rearing and paternal responsibility for providing financial support (Koss-Chionio & Vargas, 1999). K. M. McCabe et al. (2005) also indicated that literature documenting practical barriers (i.e., financial constraints and transportation) and culturally related barriers (i.e., cultural differences between staff and the family, immediate and extended family support for treatment, acculturation, treatment attitudes/expectations, and beliefs about causes of child behavior difficulties) informed cultural adaptations for Mexican American families.

Focus groups and interviews. Three of the parent training studies reported that qualitative data were obtained from minority parents of children with disruptive behavior, therapists, and/or community members. Two studies obtained qualitative data to determine and inform strategies for enhancing the acceptability and viability of the intervention. Specifically, K. M. McCabe et al. (2005) conducted focus groups and interviews with Mexican American mothers and fathers of youth with behavior disorders and Mexican American therapists. Focus groups and interviews involved describing a non-adapted parent training program to parents and therapists and asking them to indicate aspects of the program that were "appealing or unappealing," as well as to make suggestions for intervention improvement. Similarly, Matos, Torres, Santiago, Jurado, and Rodriguez (2006) conducted individual interviews with Puerto Rican parents and therapists who completed or delivered a preliminary culturally adapted parent training intervention. They were asked to evaluate the parenting skills and rationales provided, as well as the intervention format, procedures, materials, and duration. They were also asked to identify "cultural, personal, or spiritual values" or barriers that may affect program efficacy and to provide suggestions for program improvement. Coard et al. (2004) conducted focus groups with low-income African American parents to identify the prevalence, content, and techniques for implementing parent racial socialization practices to inform their parent training adaptations for African American families.

Community advisory board participation. Three studies gained participation from community members in the form of community advisory boards to enhance the acceptability and viability of the intervention. Gross, Garvey, Julion, and Fogg (2007) convened a Parent Advisory Council of African American and Latino parents from a range of socioeconomic backgrounds to develop and provide feedback on strategies for delivering the parent training program in a "culturally and contextually relevant" manner. The council advised intervention developers on the depictions for videotape vignettes and how to introduce parenting strategies in a "culturally congruent manner" for African American and Latino parents. O'Connor, Rodriguez, Cappella, Morris, and McClowry (2012) partnered with and conducted focus groups with community members (parents, community leaders, teachers) to discuss the intervention content and "cultural implications" of the intervention (McClowry & Galehouse, 2002). Finally, Brotman et al. (2011) established a Community Advisory Board who helped to identify paraprofessional intervention staff and to ensure the program was "consistent with the values and priorities of the target community." The board also provided feedback on how to deliver the intervention.

Expert consultation, pilot investigation, and application of a cultural framework. Other strategies to develop adaptations included obtaining feedback from experts in two studies. Cultural and content experts were involved in the development of parent training in the study by O'Connor et al. (2012). In the study by K. M. McCabe et al. (2005), experts (i.e., researchers focused on cultural adaptation, Mexican American therapists, and the developer of the non-adapted version of parent training) finalized adaptations. Adaptations were also based on observations from pilot investigations in three studies (Brotman et al., 2011; Matos et al., 2006; O'Connor et al., 2012) and an existing framework of cultural sensitivity of interventions in one study (Matos et al., 2006).

Types of Cultural Adaptations Implemented in Studies

The types of cultural adaptations that were implemented in the reviewed studies, as well as each study's general recruitment and retention strategies, are reported in Table 2. The types of cultural considerations are divided into two categories and are defined according to two dimensions: *surface structure* and *deep structure*. The authors of this review categorized the cultural considerations independently, and any disagreements were resolved by further discussion and review. Surface structure cultural considerations, which have also been titled *presentation strategies*, can be defined as matching intervention materials and messages to observable characteristics of the population, such as using people, language, or locations familiar to and preferred by the target families. Deep structure cultural considerations, which have also been titled *content strategies*, can be defined as incorporating the cultural, social, historical, environmental, or psychological aspects that may influence the target behavior, such as parenting practices or child behavior (Resnicow, Baranowski, Ahluwalia, & Braithwaite, 1999). Based on findings from a recent literature review to identify common elements in cultural adaptations (Barrera, Castro, Strycker, & Toobert, 2013), we further divided the cultural considerations into the organizational scheme posed by Kreuter, Lukwago, Bucholtz, Clark, and Sanders-Thompson (2003). This scheme contains the following categories: (a) *peripheral strategies* that modify the observable properties of intervention materials; (b) *linguistic strategies* that alter language used in intervention materials to make them comprehensible; (c) *constituent-involving strategies* that utilize the cultural knowledge and experience of members of the minority group; (d) *sociocultural strategies* in which a minority group(s) cultural values, beliefs, and behaviors are recognized, reinforced, and built upon; and (e) *evidential strategies* that use "evidence" for a specific group or experiences from individuals with similar backgrounds to increase the perceived relevance of information (Kreuter et al., 2003).

Strategies to address cultural beliefs, values, and experiences related to parenting or receptivity to interventions. Of note in the reviewed studies are attempts to address parent cultural beliefs, values, and experiences that relate to parenting among minorities. K. M. McCabe et al. (2005) reported implementing an intake questionnaire to assess Mexican American values and beliefs about various parenting strategies and styles (e.g., *Do parents feel comfortable praising their children?*). A computerized report based on questionnaire responses was developed for each family and used by therapists to tailor topics of discussion for that family. Furthermore, to address the cultural value of personalismo, interventionists spent extra time during each session to focus on rapport building with families. The values of collectivism and familism were addressed by having the interventionists conduct home visits and contact mothers, fathers, and grandparents. During telephone calls and home visits, interventionists' goals included assessing familial support for the intervention and creating an engagement plan for other family members who are involved in decision making and parenting. Engagement of fathers and grandparents is a focus throughout the intervention, and plans are developed with the participating caregiver if there are other family members who discourage intervention participation. For example, non-participating family members may be contacted by the interventionist or provided with written intervention materials. To address the value of relationship hierarchy/authority, interventionists discussed parental concerns about the program and encouraged parents to voice any complaints during each session. Coard et al. (2004) taught parenting strategies to promote racial socialization parenting practices, which included (a) discussing and problem-solving children's experiences of social exclusion from peers due to their race, (b) teaching skills for advocating for children to overcome poor relationships with and low expectations from school staff, (c) providing education about the developmental progression of racial awareness and identity among children, (d) teaching skills for discussing race-related information with children in a developmentally appropriate manner, and (e) supporting parents in accessing culturally affirming community resources. Similarly,

Gross et al. (2009) emphasized discussion of stress related to being immigrants or concerns about maintaining cultural traditions among Hispanic parents and discussion of stress related to racism among African American parents. Gross et al. (2007) developed a list of effective discipline principles that were rated as acceptable among African American and Hispanic community members, and the principles were disseminated. To address acceptability of parenting strategies, Matos et al. (2006) reported teaching some parents to use loss of privileges as a discipline technique because it was more acceptable than time-out among some Puerto Rican families and therapists. Brotman et al. (2011) and Baker, Arnold, and Meagher (2011) reported that cultural differences in parenting and cultural values (e.g., value of child obedience and respect for elders) were discussed with parents during the program.

Ensuring literacy level and culturally relevant content of intervention materials. Several studies reported explicit modifications to intervention materials. Modifications included providing parent handouts in Spanish for Hispanic families (Baker et al., 2011; Matos et al., 2006; K. M. McCabe et al., 2005), ensuring that parent handouts included simplified language (Matos et al., 2006; K. M. McCabe et al., 2005), and confirming the materials were culturally relevant (Gross et al., 2007; Matos et al., 2006; O'Connor et al., 2012).

Addressing the language and race/ethnicity of interventionists and considering the intervention setting. Six of the seven studies reported explicit attention to the race/ethnicity, language proficiency, and/or language expression of the interventionists. This included using bilingual therapists for parent training with Hispanic parents (Baker et al., 2011; K. M. McCabe et al., 2005) and matching the race/ethnicity of the interventionist to the families participating in the intervention (Brotman et al., 2011; Coard et al., 2004; Gross et al., 2007). Coard et al. (2004) also reported interventionists used common African American language expression, as well as African proverbs, sayings and affirmations, poems, quotes, symbols, and pledges. Finally, several studies reported attention to delivering the intervention in particular settings. Gross et al. (2007) reported delivering the intervention in child care settings, and Coard et al. (2004) reported intervention delivery in a setting with motifs that are representative of African Americans.

Discussion

The purpose of this review was to synthesize the literature on studies reporting U.S. racial/ethnic minority parents' engagement in culturally adapted parent training interventions that address disruptive behavior among young children ages 2 to 7 years. Our review of the literature indicates that few studies have reported engagement in culturally adapted parent training among racial/ethnic minority parents. Furthermore, the proportion of parents who enrolled, attended sessions, or dropped out of the intervention varied within and across studies. Only one study was designed to examine whether an adapted intervention improved engagement compared with a non-adapted intervention. Thus, the current state of the literature does not allow determination of whether adapted parent training improves engagement among minority families. However, it is important to note that some of the culturally adapted interventions described relatively high enrollment and/or attendance compared with studies of non-adapted parent training with diverse samples that have reported rates of 45% to 60% enrollment (August, Lee, Bloomquist, Realmuto, & Hektner, 2003; Begle et al., 2012; Brotman et al., 2005) and 45% to 55% average attendance (Begle et al., 2012; Linares, Montalto, Li, & Oza, 2006). Such findings point to the need for studies that compare culturally adapted interventions with non-adapted interventions to determine whether culturally adapted interventions are beneficial for increasing engagement among minority parents.

Recommendations for Future Research

We provide several recommendations for future research on parental engagement in culturally adapted parent training. First, findings from this review suggest that conducting interviews or focus groups, or establishing community advisory boards with parents and community members, are feasible strategies for developing cultural adaptations to parent training interventions that could be examined in future studies. The development of community advisory boards aligns with an increasing focus on using a Community-Based Participatory Research (CBPR) approach. CBPR emphasizes partnerships between communities and researchers for the purpose of developing effective interventions that are culturally and contextually relevant and address disparities among racial/ethnic minority families (Viswanathan et al., 2004; N. Wallerstein & Duran, 2010; N. B. Wallerstein & Duran, 2006).

Second, this review focused on enrollment, attendance, and dropout as measures of engagement given these are most commonly examined (Becker et al., 2015). However, diverse measures of engagement should be used in future studies to determine the impact of adapted interventions across different measures. Additional measures should include parental adherence to intervention procedures and level of parental involvement during intervention sessions. Parental attitudes/cognitions that are associated with attendance and adherence should also be examined, such as motivation to participate in interventions and change parental behaviors, or the degree of receptivity to intervention content and procedures.

Third, it is important to note that most of the studies in this review were conducted with parents of relatively low educational attainment and family incomes. It will be important in future studies to recruit minority families from diverse socioeconomic backgrounds to determine whether sociodemographic characteristics (i.e., family income, parental educational background, parental literacy, and parents' primary language) moderate the impact of culturally adapted parent training on engagement. Similarly, cultural factors that should be examined as moderators of culturally adapted parent training in future research are level of parental acculturation, level of parental racial/ethnic identity, as well as level of immigration, acculturation, or discrimination-related stress. Cultural values, such as *familism, personalismo*, and *respecto*, and degree of importance placed on children's racial socialization may also moderate the impact of culturally adapted interventions. Finally, parental acceptance of various parenting skills (e.g., time-out, corporal punishment) may moderate intervention effects and should be assessed in future studies.

Implications for Implementation of Parent Training With Minority Parents

Information from the current review can be used to inform quality improvement of parent training with minority families. Our findings related to the use of parental interviews and focus groups to develop adaptations fit with the increasing emphasis on involving families in quality improvement efforts in child intervention programs (Blau, Huang, & Mallery, 2010). For example, interviews or focus groups can be conducted to determine parental perceptions of barriers to engagement and potential strategies for intervention improvement.

Finally, although researchers have called for the need to consider language, culture, and context in parent training, to our knowledge, no systematic review has summarized cultural adaptations that have been implemented with minority families. This review describes several strategies that can be considered for implementation among interventionists who wish to address language, culture, and context within parent training programs delivered to African American or Hispanic parents. The strategies include assessment and discussion of parenting values and beliefs, promoting effective strategies for managing experiences related to discrimination or immigration; ensuring the availability of racially/ethnically diverse intervention providers; providing the intervention in

the family's primary language; ensuring the cultural relevancy and appropriate literacy level of intervention materials; providing the intervention in a community location that is acceptable and accessible for parents; and providing an intervention title that minimizes stigma. Importantly, due to the small number of studies in this review, we did not describe the types of cultural adaptations that have been implemented separately for different minority groups. Types of cultural adaptations may be more relevant for some racial/ethnic minority groups compared with others.

Limitations

There are several limitations of this review that are important to note. The small number of studies that were available for review limits the generalizability of our findings to the larger population of young racial/ethnic minority children. In particular, no study reported the inclusion of Asian Americans or Native Americans in their sample, thus restricting information about cultural adaptations that have been implemented among these two groups.

Conclusion

Despite the limitations, this systematic literature review reveals several methods that can be used to develop cultural adaptations for parent training and describes concrete strategies that have been implemented to address culture, language, and context in parent training for racial/ethnic minority families. It is hoped that the recommendations for future research on culturally adapted parent training encourage attention to adequate testing of parent engagement given the importance of engagement to achieve an impact on disparities in outcomes associated with disruptive behavior among minority children.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported by a grant from the Robert Wood Johnson Foundation New Connections Program.

References

August, G. J., Lee, S. S., Bloomquist, M. L., Realmuto, G. M., & Hektner, J. M. (2003). Dissemination of an evidence-based prevention innovation for aggressive children living in culturally diverse, urban neighborhoods: The Early Risers effectiveness study. *Preventive Science*, *4*, 271-286.

Baker, C. N., Arnold, D. H., & Meagher, S. (2011). Enrollment and attendance in a parent training prevention program for conduct problems. *Preventive Science*, *12*, 126-138. doi:10.1007/s11121-010-0187-0

Barrera, M., Jr., Castro, F. G., Strycker, L. A., & Toobert, D. J. (2013). Cultural adaptations of behavioral health interventions: A progress report. *Journal of Consulting and Clinical Psychology*, *81*, 196-205. doi:10.1037/a0027085

Becker, K. D., Lee, B. R., Daleiden, E. L., Lindsey, M., Brandt, N. E., & Chorpita, B. F. (2015). The common elements of engagement in children's mental health services: Which elements for which outcomes? *Journal of Clinical Child & Adolescent Psychology*, *44*, 30-43. doi:10.1080/15374416.2013.814543

Begle, A. M., Lopez, C., Cappa, K., Dumas, J. E., & de Arellano, M. A. (2012). Ethnicity differences in child and parental outcomes following involvement the PACE program. *Behaviour Research and Therapy*, *50*, 56-64. doi:10.1016/j.brat.2011.09.009

Belden, A. C., Thomson, N. R., & Luby, J. L. (2008). Temper tantrums in healthy versus depressed and disruptive preschoolers: Defining tantrum behaviors associated with clinical problems. *The Journal of Pediatrics*, *152*, 117-122. doi:10.1016/j.jpeds.2007.06.030

Bernal, G. (2006). Intervention development and cultural adaptation research with diverse families. *Family Process*, *45*, 143-151.

Bernal, G., Bonilla, J., & Bellido, C. (1995). Ecological validity and cultural sensitivity for outcome research: Issues for cultural adaptation and development of psychosocial treatments with Hispanics. *Journal of Abnormal Child Psychology*, *23*, 67-82.

Bernal, G., Jiménez-Chafey, M. I., & Domenech Rodríguez, M. M. (2009). Cultural adaptation of treatments: A resource for considering culture in evidence-based practice. *Professional Psychology: Research and Practice*, *40*, 361-368.

Blau, G. M., Huang, L. N., & Mallery, C. J. (2010). Advancing efforts to improve children's mental health in America: A commentary. *Administration and Policy in Mental Health and Mental Health Services Research*, *37*, 140-144. doi:10.1007/s10488-010-0290-3

Brotman, L. M., Calzada, E., Huang, K. Y., Kingston, S., Dawson-McClure, S., Kamboukos, D., . . .Petkova, E. (2011). Promoting effective parenting practices and preventing child behavior problems in school among ethnically diverse families from underserved, urban communities. *Child Development*, *82*, 258-276. doi:10.1111/j.1467-8624.2010.01554.x

Brotman, L. M., Gouley, K. K., Chesir-Teran, D., Dennis, T., Klein, R. G., & Shrout, P. (2005). Prevention for preschoolers at high risk for conduct problems: Immediate outcomes on parenting practices and child social competence. *Journal of Clinical Child & Adolescent Psychology*, *34*, 724-734. doi:10.1207/s15374424jccp3404_14

Calzada, E. J., Brotman, L. M., Huang, K. Y., Bat-Chava, Y., & Kingston, S. (2009). Parent cultural adaptation and child functioning in culturally diverse, urban families of preschoolers. *Journal of Applied Developmental Psychology*, *30*, 515-524. doi:10.1016/j.appdev.2008.12.033

Calzada, E. J., Huang, K. Y., Anicama, C., Fernandez, Y., & Brotman, L. M. (2012). Test of a cultural framework of parenting with Latino families of young children. *Cultural Diversity & Ethnic Minority Psychology*, *18*, 285-296. doi:10.1037/a0028694

Caughy, M. O., O'Campo, P. J., & Muntaner, C. (2004). Experiences of racism among African American parents and the mental health of their preschool-aged children. *American Journal of Public Health*, *94*, 2118-2124.

Chao, R., & Kanatsu, A. (2008). Beyond socioeconomics: Explaining ethnic group differences in parenting through cultural and immigration processes. *Applied Developmental Science*, *12*, 181-187.

Coard, S., Foy-Watson, S., Zimmer, C., & Wallace, A. (2007). Considering culturally relevant parenting practices in intervention development and adaptation: A randomized control trial of the Black Parenting Strengths and Strategies (BPSS) Program. *The Counseling Psychologist*, *35*, 797-820.

Coard, S., Wallace, S. A., Stevenson, H. C., & Brotman, L. M. (2004). Towards culturally relevant preventive interventions: The consideration of racial socialization in parent training with African American families. *Journal of Child and Family Studies*, *13*, 277-293.

Eyberg, S. M., Nelson, M. M., & Boggs, S. R. (2008). Evidence-based psychosocial treatments for children and adolescents with disruptive behavior. *Journal of Clinical Child & Adolescent Psychology*, *37*, 215-237. doi:10.1080/15374410701820117

Ezpeleta, L., Granero, R., de la Osa, N., Navarro, J. B., Penelo, E., & Domenech, J. M. (2014). Tracing developmental trajectories of oppositional defiant behaviors in preschool children. *PLoS One*, *9*(6), e101089. doi:10.1371/journal.pone.0101089

Ezpeleta, L., Keeler, G., Erkanli, A., Costello, E. J., & Angold, A. (2001). Epidemiology of psychiatric disability in childhood and adolescence. *Journal of Child Psychology and Psychiatry*, *42*, 901-914.

Feldman, J., & Kazdin, A. E. (1995). Parent management training for oppositional and conduct problem children. *Clinical Psychologist*, *48*, 3-5.

Fite, P. J., Wynn, P., & Pardini, D. A. (2009). Explaining discrepancies in arrest rates between Black and White male juveniles. *Journal of Consulting and Clinical Psychology*, *77*, 916-927. doi:10.1037/a0016626

Foster, S. L., & Mash, E. J. (1999). Assessing social validity in clinical treatment research: Issues and procedures. *Journal of Consulting and Clinical Psychology*, *63*, 308-319.

Gross, D., Garvey, C., Julion, W., & Fogg, L. (2007). *Preventive training with low-income, ethnic racial/ethnic minority parents of preschoolers* (3rd ed.). Hoboken, NJ: John Wiley.

Gross, D., Garvey, C., Julion, W., Fogg, L., Tucker, S., & Mokros, H. (2009). Efficacy of the Chicago parent program with low-income African American and Latino parents of young children. *Preventive Science*, *10*, 54-65. doi:10.1007/s11121-008-0116-7

Gunter, T. D., Arndt, S., Riggins-Caspers, K., Wenman, G., & Cadoret, R. J. (2006). Adult outcomes of attention deficit hyperactivity disorder and conduct disorder: Are the risks independent or additive? *Annals of Clinical Psychiatry*, *18*, 233-237. doi:10.1080/10401230600948415

Hill, N. E., & Tyson, D. F. (2008). Excavating culture: Ethnicity and context as predictors of parenting behavior. *Applied Developmental Science*, *12*, 188-197.

Hinojosa, M. S., Hinojosa, R., Fernandez-Baca, D., Knapp, C., Thompson, L. A., & Christou, A. (2012). Racial and ethnic variation in ADHD, comorbid illnesses, and parental strain. *Journal of Health Care for the Poor and Underserved*, *23*, 273-289. doi:10.1353/hpu.2012.0001

Hong, J. S., Tillman, R., & Luby, J. L. (2015). Disruptive behavior in preschool children: Distinguishing normal misbehavior from markers of current and later childhood conduct disorder. *The Journal of Pediatrics*, *166*, 723-730. doi:10.1016/j.jpeds.2014.11.041

Huey, S. J., Jr., & Polo, A. J. (2008). Evidence-based psychosocial treatments for ethnic minority youth. *Journal of Clinical Child & Adolescent Psychology*, *37*, 262-301. doi:10.1080/15374410701820174

Humes, K. R., Jones, N. A., & Ramirez, R. R. (2011). *Overview of Race and Hispanic Origin: 2010*. U.S. Department of Commerce Economics and Statistics Administration. Retrieved from http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf

Kashima, Y., Yamaguchi, S., Kim, U., Choi, S. C., Gelfand, M. J., & Yuki, M. (1995). Culture, gender, and self: A perspective from individualism-collectivism research. *Journal of Personality and Social Psychology*, *69*, 925-937.

Koss-Chionio, J. D., & Vargas, L. A. (1999). *Working with Latino youth: Culture, development, and context*. San Francisco, CA: Jossey-Bass.

Kreuter, M. W., Lukwago, S. N., Bucholtz, R. D., Clark, E. M., & Sanders-Thompson, V. (2003). Achieving cultural appropriateness in health promotion programs: Targeted and tailored approaches. *Health Education & Behavior*, *30*, 133-146.

Lau, A. (2006). Making the case for selective and directed cultural adaptations of evidence-based treatments: Examples from parent training. *Clinical Psychology: Science and Practice*, *13*, 295-310.

Lavigne, J. V., Lebailly, S. A., Gouze, K. R., Binns, H. J., Keller, J., & Pate, L. (2010). Predictors and correlates of completing behavioral parent training for the treatment of oppositional defiant disorder in pediatric primary care. *Behavior Therapy*, *41*, 198-211. doi:10.1016/j.beth.2009.02.006

Linares, L. O., Montalto, D., Li, M., & Oza, V. S. (2006). A promising parenting intervention in foster care. *Journal of Consulting and Clinical Psychology*, *74*, 32-41. doi:10.1037/0022-006X.74.1.32

Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training: Moderators and follow-up effects. *Clinical Psychology Review*, *26*, 86-104. doi:10.1016/j.cpr.2005.07.004

Martinez, C. R., Jr., & Eddy, J. M. (2005). Effects of culturally adapted parent management training on Latino youth behavioral health outcomes. *Journal of Consulting and Clinical Psychology*, *73*, 841-851. doi:10.1037/0022-006X.73.5.841

Matos, M., Bauermeister, J. J., & Bernal, G. (2009). Parent-child interaction therapy for Puerto Rican preschool children with ADHD and behavior problems: A pilot efficacy study. *Family Process*, *48*, 232-252.

Matos, M., Torres, R., Santiago, R., Jurado, M., & Rodriguez, I. (2006). Adaptation of parent-child interaction therapy for Puerto Rican families: A preliminary study. *Family Process*, *45*, 205-222.

McCabe, K., & Yeh, M. (2009). Parent-child interaction therapy for Mexican Americans: A randomized clinical trial. *Journal of Clinical Child & Adolescent Psychology*, *38*, 753-759. doi:10.1080/15374410903103544

McCabe, K. M., Yeh, M., Garland, A. F., Lau, A. S., & Chavez, G. (2005). The GANA program: A tailoring approach to adapting parent child interaction therapy for Mexican Americans. *Education & Treatment of Children*, *28*, 111-129.

McClowry, S., & Galehouse, P. (2002). Planning a temperament-based parenting program for inner-city families. *Journal of Child and Adolescent Psychiatric Nursing*, *15*, 97-105.

McKay, M. M., & Bannon, W. M., Jr. (2004). Engaging families in child mental health services. *Child & Adolescent Psychiatric Clinics*, *13*, 905-921. doi:10.1016/j.chc.2004.04.001

Miranda, J., Bernal, G., Lau, A., Kohn, L., Hwang, W. C., & LaFromboise, T. (2005). State of the science on psychosocial interventions for ethnic minorities. *Annual Review of Clinical Psychology*, *1*, 113-142. doi:10.1146/annurev.clinpsy.1.102803.143822

Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, *100*, 674-701.

O'Connor, E., Rodriguez, E., Cappella, E., Morris, J., & McClowry, S. (2012). Child disruptive behavior and parenting efficacy: A comparison of the effects of two models of insights. *Journal of Community Psychology*, *40*, 555-572. doi:10.1002/jcop.21482

Orrell-Valente, J. K., Pinderhughes, E. E., Valente, E., Jr., & Laird, R. D. (1999). If it's offered, will they come? Influences on parents' participation in a community-based conduct problems prevention program. *American Journal of Community Psychology*, *27*, 753-783.

Ortiz, C., & Del Vecchio, T. (2013). Cultural diversity: Do we need a new wake-up call for parent training? *Behavior Therapy*, *44*, 443-458. doi:10.1016/j.beth.2013.03.009

Parra Cardona, J. R., Domenech-Rodriguez, M., Forgatch, M., Sullivan, C., Bybee, D., Holtrop, K., . . . Bernal, G. (2012). Culturally adapting an evidence-based parenting intervention for Latino immigrants: The need to integrate fidelity and cultural relevance. *Family Process*, *51*, 56-72. doi:10.1111/j.1545-5300.2012.01386.x

Regalado, M., Sareen, H., Inkelas, M., Wissow, L. S., & Halfon, N. (2004). Parents' discipline of young children: Results from the National Survey of Early Childhood Health. *Pediatrics, 113*(6 Suppl.), 1952-1958.

Reid, M. J., Webster-Stratton, C., & Beauchaine, T. P. (2001). Parent training in Head Start: A comparison of program response among African American, Asian American, Caucasian, and Hispanic mothers. *Preventive Science*, *2*, 209-227.

Resnicow, K., Baranowski, T., Ahluwalia, J. S., & Braithwaite, R. L. (1999). Cultural sensitivity in public health: Defined and demystified. *Ethnicity & Disease*, *9*, 10-21.

Self-Brown, S., Frederick, K., Binder, S., Whitaker, D., Lutzker, J., Edwards, A., & Blankenship, J. (2011). Examining the need for cultural adaptations to an evidence-based parent training program targeting the prevention of child maltreatment. *Children and Youth Services Review*, *33*, 1166-1172.

Slade, E. P., & Wissow, L. S. (2004). Spanking in early childhood and later behavior problems: A prospective study of infants and young toddlers. *Pediatrics*, *113*, 1321-1330.

Tremblay, R. E., Vitaro, F., Bertrand, L., LeBlanc, L., Beauchesne, H., Boileau, H., & David, L. (1992). Parent and child training to prevent early onset of delinquency: The Montreal longitudinal-experimental study. In J. McCord & R. E. Tremblay (Eds.), *Preventing antisocial behavior: Interventions from birth through adolescence* (pp. 117-138). New York, NY: Guilford.

Viswanathan, M., Ammerman, A., Eng, E., Gartlehner, G., Lohr, K. N., Griffith, D., . . .Whitener, L. (2004). *Community-based participatory research: Assessing the evidence*. Rockville, MD: Agency for Health Care Research and Quality.

Wallerstein, N., & Duran, B. (2010). Community-based participatory research contributions to intervention research: The intersection of science and practice to improve health equity. *American Journal of Public Health, 100*(Suppl. 1), S40-S46. doi:10.2105/AJPH.2009.184036

Wallerstein, N. B., & Duran, B. (2006). Using community-based participatory research to address health disparities. *Health Promotion Practice*, *7*, 312-323. doi:10.1177/1524839906289376

Wissow, L. S. (2001). Ethnicity, income, and parenting contexts of physical punishment in a national sample of families with young children. *Child Maltreatment*, *6*(2), 118-129.

Zuniga, M. (Ed.). (1997). *Families with Latino roots*. Baltimore, MD: Paul H. Brookes.

Copyright of Journal of Early Intervention is the property of Sage Publications Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

J Youth Adolescence (2016) 45:1065–1074
DOI 10.1007/s10964-016-0443-0

EMPIRICAL RESEARCH

Financial Strain, Major Family Life Events, and Parental Academic Involvement During Adolescence

Daisy E. Camacho-Thompson[1] · Cari Gillen-O'Neel[2] · Nancy A. Gonzales[3] · Andrew J. Fuligni[1]

Received: 4 November 2015 / Accepted: 13 February 2016 / Published online: 7 March 2016
© Springer Science+Business Media New York 2016

Abstract Parental academic involvement—whether through school participation and communication, or supervision and assistance at home—often has been cited as a way to enhance academic achievement. Yet, little is known about how the financial and life pressures faced by families can compromise parents' ability to become involved in their adolescents' education. In the current study, these dynamics were examined among Mexican-origin families, who often may face challenging financial and familial circumstances, and whose students may have more difficulty in secondary school. Parents of Mexican-origin ninth and tenth grade students from two high schools in Los Angeles ($N = 428$; 50 % female) completed quantitative interviews. The results revealed that financial strain predicted less involvement at school, and major family life events predicted less involvement at home, even after controlling for potentially confounding factors. Moreover, both of the associations between parental stress and parental academic involvement were mediated by lower levels of relationship quality between parents and adolescents, but not by conflict within the parent–adolescent dyad or parental depressive and somatic symptoms. The findings suggest that stress may limit parents' ability to become involved their adolescents' education, and highlight the importance of understanding family dynamics when examining parental academic involvement among Mexican-origin families.

✉ Daisy E. Camacho-Thompson
daisycamacho@gmail.com

[1] University of California, Los Angeles, Los Angeles, CA, USA

[2] Macalester College, Saint Paul, MN, USA

[3] Arizona State University, Tempe, AZ, USA

Keywords Latino families · Parental academic involvement in high school · Parental academic involvement at home · Stress · Financial strain · Major family life events · Family functioning

Introduction

Examining parental involvement among Latino populations is an imperative, as this group is a quickly growing subsection of the American population that unfortunately lags behind other ethnic groups in high school completion (Grieco et al. 2012). Parental involvement in education—at home and at school—has been shown to be an important component of academic success (Hill and Tyson 2009), even among middle and high school aged adolescents (Jeynes 2007; Kuperminc et al. 2008). Students whose parents are involved academically show higher academic values, grade point averages, standardized test scores, and enrollment in college-preparatory tracks and programs (Altschul 2012). Few studies, however, have examined the role of contextually embedded family processes in the academic development of Latino adolescents (Hill and Torres 2010). Studies have focused mostly on demographic predictors of parental involvement (e.g., parental education, income, generational status), to the neglect of how additional factors, such as financial and familial stress, may interfere with involvement (Altschul 2012; Hill and Torres 2010).

Family Stress and Parental Involvement

A salient contextual marker of Latino parents is the stress that they face (Gonzales et al. 2011), such as poverty and low-levels of education (Morales et al. 2002; Grieco et al. 2012). Although little is known about the role of parental

stress as it relates to their academic involvement, the family stress model offers a perspective that could be useful (Gutman and Eccles 1999; McLoyd 1990). This model postulates that the association between stress and adolescent outcomes is mediated by family functioning (Conger et al. 1994). That is, low socioeconomic status has been associated with developmental risks, and the family stress model posits that the reason for this association is that financial strain disrupts parenting (Conger et al. 1994). In this case, parental stress might limit the academic involvement that parents are able to provide, and this might be explained by family functioning.

Socioeconomic status has been found to be associated with parental involvement (Cooper et al. 2000; Kelly 2004; Melby and Conger 1996), so it is likely that the stress linked with financial difficulties may be associated with lower levels of parental involvement. In addition to the chronic stress of financial strain, acute stressors such as major life events may play a role in family functioning by impacting daily life activities (Compas 1987), such as the ability of a parent to be academically involved in the life of their adolescent. Given the importance of family in the lives of these parents (Stein et al. 2014), Latino populations may provide an ideal context to study the role of family stress as a predictor to academic involvement (Parke et al. 2004). Therefore, our study will first examine whether financial strain and major family life events are associated with lower levels of parental academic involvement at home and at school.

Parental Involvement Practices

It is important to examine parental involvement, both at school and at home, since both are associated with achievement (Hill and Tyson 2009). Research shows that Latino parents are perceived as under-involved by teachers (DePlanty et al. 2007; Ramírez 2003), but some studies find that parental involvement is comparable across ethnic groups (Fan 2001). Despite this, researchers consistently find that Latino parents value the academic success of their adolescents (Durand and Perez 2013; Valencia 2002), with some studies finding that this is even more pronounced in Latino families than in European American families (Ryan et al. 2010). Differences in these findings might be attributable to individual or contextual differences. Unfortunately, studies have focused mostly on demographic predictors of parental involvement (e.g., parental education, income, generational status) (Altschul 2012; Ceballo et al. 2013; Hill and Torres 2010) without taking into account the context of the family.

School Involvement

School-based involvement has been defined as attending school programs, such as PTA meetings, open houses, volunteering at school, attending extracurricular activities, and communicating with parents and school personnel (Hill and Tyson 2009; Keith and Lichtman 1994). This type of parental behavior has been linked with academic achievement (Kuperminc et al. 2008; LeFevre and Shaw 2012; Shumow and Miller 2001) as well as motivation, self-efficacy, and engagement (Gonzalez-DeHass et al. 2005). However, parents with multiple child-care or extended family responsibilities may be less involved in school-based activities (Hoover-Dempsey et al. 2005). That is, parents under financial or familial stressors may have more of a limited ability to be involved at school.

Home Involvement

Home-based academic involvement is typically measured as talking with children about school, helping them with schoolwork, and taking children to educational places such as museums and libraries (Hill and Tyson 2009). This type of involvement also has been defined as creating an environment in the home that fosters learning such as providing books, newspapers, educational toys, and educational materials (Eamon 2005; Hill and Tyson 2009). For young Mexican-origin adolescent girls, increased communication about their grades with their mothers was linked with higher math grades and intrinsic motivation for math and reading (Mireles-Rios and Romo 2010). With the exception of academic pressure from fathers and help with homework, most involvement at home has been linked with academic achievement (Cooper et al. 2000; Hill and Tyson 2009; Rogers et al. 2009).

Research has found that Latinos participate less at school and more at home than European American parents (Mau 1997). Still, predictors of parental participation are unclear. Therefore, this study will examine how financial or familial stressors may limit parents' ability to be involved in the academics of their adolescents, both at school and at home.

Parental Depressive and Somatic Symptoms, and Family Relationships as Potential Mediators

Latinos, generally, have higher levels of family stress (e.g., overall high rates of poverty and mental health problems) (Gonzales et al. 2011), and extending the family stress model to parental involvement could be an important way to understand barriers to parental involvement in this population. Studies employing the family stress model typically find that parental depressive or somatic symptoms, and parent–adolescent relationships are significant mediators between stress and an adverse outcome. For example, a study with African American families found that parental financial strain was associated with parenting behavior (i.e., low-

nurturing involvement), and this was mediated by parental depressed moods (Conger et al. 2002). In this case, parental depressive and somatic symptoms and family relationships could help explain the link between parental stressors and their academic involvement.

Parental Depressive and Somatic Symptoms

Depressive symptoms have been linked with lower levels of academic involvement for parents of first grade students (Kohl et al. 2000; LaForett and Mendez 2010; Valdez et al. 2013) and middle school students (Gutman and Eccles 1999). The role of parental depressive and somatic symptoms and their association with parental academic involvement with high school adolescents, however, is unclear. Parental depressive and somatic symptoms could help explain the association between parental stress and their academic involvement. Previous research has found that parental depressive symptoms are associated with their parenting behaviors (Conger et al. 2002). In this case, the stress that parents face could limit the positive behaviors they are able to engage in with adolescents—such as school and home involvement—and this may be explained by their depressive and somatic symptoms. Therefore, in this study we tested the mediating role of depressive and somatic symptoms.

Family Relationships

Although, to our knowledge, previous research has not applied the family stress model to the study of parental involvement, this model provides a useful perspective. The family stress model suggests that family relationships are an important mediator of the effects of financial strain (Conger et al. 1994), suggesting that family relationships could help explain the link between stress and parental academic involvement. It could be that the stress that parents encounter, as the family stress model would posit, may disrupt family relationships—which could explain lower levels of parental involvement. That is, if parents face high levels of stress, this may decrease the parent–adolescent relationship quality and increase conflict between the dyad (Benner and Kim 2010; Conger and Conger 2002; Gonzales et al. 2011). This strain in family relationships, in turn, may limit parental academic involvement.

Current Study

Research has extensively documented the benefits of parental academic involvement for Latino youth (Hill and Tyson 2009; Jeynes 2007; Kuperminc et al. 2008). However, subjective predictors of parental involvement beyond demographics (Altschul 2012; Ceballo et al. 2013; Morales et al. 2002) are less clear. Given the systemic realities that Latino families face (Gonzales et al. 2011), we first sought to understand how financial and familial factors might impinge on parenting practices. Specifically we asked whether financial strain and acute family stressors, or major family life events, predict parental academic involvement at home and at school. Given previous research with other ethnic groups, we hypothesized that financial strain would be associated with lower levels of academic involvement at school and at home (Gutman and Eccles 1999). Furthermore, given the salient role of families in this population (Stein et al. 2014), we hypothesized that stress in the family would also be associated with lower levels of parental academic involvement in the school and the home.

Finally, in an in an effort to expand upon current research to understand parental involvement within contextual factors (Hill and Torres 2010), a secondary goal of this study was to examine the role of family dynamics in this association. To frame this question, we drew from the family stress model (Conger et al. 2002), and hypothesized that family functioning would mediate the link between parental stress and lower levels of parental academic involvement. We operationalized family functioning as parental depressive and somatic symptoms and family relationships (i.e., parent–adolescent relationship quality and parent–adolescent conflict). Given previous research with parents of younger Latino students showing that parental depressive and somatic symptoms were associated with lower levels of parental involvement (Kohl et al. 2000; LaForett and Mendez 2010; Valdez et al. 2013), we hypothesized that parental depressive and somatic symptoms would help explain the association between parental stress and their academic involvement. Additionally, financial strain has been found to be associated with both positive and negative family relationship factors, such as parental warmth and hostile parenting (Benner and Kim 2010; Conger and Conger 2002; Gonzales et al. 2011). Therefore, we hypothesized that both positive (i.e., parent–adolescent relationship quality) and negative (i.e., parent–adolescent conflict) aspects of family relationships would be significant mediators in the link between parental stress and their academic involvement.

Methods

Sample and Procedure

A total of 428 parents of ninth (49 %) and tenth grade students (50 % female; $M_{age} = 15.02$, $SD = .83$, age range

13–18 years) from two high schools in Los Angeles participated in our study. The schools were predominantly Latino (93.9 and 62.4 %) with high levels of students receiving free or reduced lunch (70.8 and 73.2 %). The parents (M_{age} = 41.93, SD = 6.75) consisted primarily of mothers (82.9 %), with the remainder being fathers (13.1 %) and grandparents, aunts, uncles, or siblings (4.0 %). Most parents were born in Mexico (77.1 %), with smaller proportions born in the U.S. (17.5 %) and other countries (5.4 %). The average age of migration for parents was 20.20 years (SD = 8.80, age range 0–55 years). The majority of parents (82.5 %) were first generation (i.e. both they and their parents were born in Mexico), 11.2 % were second generation (i.e. they were born in the US, and at least one of their parents was born in Mexico), and the remaining 6.3 % were third generation or more (i.e. them and both of their parents were born in the US).

Parents reported, on a scale where 1 = "Some Elementary School," 2 = "Completed Elementary School," 3 = "Some Junior High School," 4 = "Completed Junior High School," 5 = "Some High School," 6 = "Graduated from High School," 7 = "Trade or Vocational School," 8 = "Some College," 9 = "Graduated from College," 10 = "Some Medical, Law or Graduate school," and 11 = "Graduated from Medical, Law or Graduate school," their current level of education ($M_{first\ generation}$ = 4.07, SD = 2.47; $M_{second\ generation}$ = 6.57, SD = 1.86; $M_{third\ generation}$ = 6.22, SD = 1.76). Parents also reported their income ($M_{first\ generation}$ = \$35,440.68, SD = 28,345.61; $M_{second\ generation}$ = \$51,544.44, SD = 30,033.28; $M_{third\ generation}$ = \$50,081.92, SD = 32,154.95; range = \$0–\$270,000).

The families were recruited throughout the academic year using class presentations, home mailings, and phone calls to parents. Approximately 60 % of the families were reached by phone. Of those reached, 63 % (N = 428) were determined to be eligible by having a Mexican background, regardless of current immigrant status, and were willing to participate in the study. Interviewers collected data at families' homes using a computer-aided personal interview. Interviews and questionnaires were completed in Spanish (87 %) and English, and took approximately 45–60 min to complete.

Measures

School Involvement

Parents reported involvement at school by responding to four items (i.e., "You talk to your child's teachers at school," "You go to school functions (e.g., Back-to-School Night, parent–teacher conferences)," "You go to activities in which your child is involved in school," and "You do volunteer work at your child's school," 1 = almost never, 5 = almost always; $\propto$ = .77; adapted from Jeynes 2007). All items were averaged, and validity of the scale was demonstrated by its correlation with adolescents' grade point average acquired from school records (r = .14, p = .009).

Home Involvement

Parents reported their level of academic involvement at home by responding to eight items (e.g., "You know your child's grades" or "You talk to your child about his/her plans for after high school," "You talk to your child about planning his/her high school classes," or "You make sure that your child has done his/her homework," 1 = almost never, 5 = almost always; $\propto$ = .87; adapted from Jeynes 2007). The items were averaged, and the composite score was significantly associated with adolescents' grade point average (r = .18, $p < .001$).

Financial Strain

Parents rated their family's level of financial hardship using a nine-item measure (e.g., "Think again over the past 3 months. Generally, at the end of each month did you end up…" 1 = with more than enough money left over, 4 = very short of money, $\propto$ = .90; Conger et al. 2002).

Major Family Life Events

Parents indicated acute stressors in their family by responding to six items (e,g,. "A family member died" or "You moved far away from family or friends," 1 = Yes, 0 = No; Holmes and Rahe 1967). Items were summed for a score of major family life events.

Depressive Symptoms

Using the Center for Epidemiological Studies Depression Scale, parents reported on 20 depressive symptoms in the past week (e.g., "You felt lonely," or "You felt sad," 1 = rarely or none of the time, 4 = most or all of the time; $\propto$ = .89; Radloff 1977).

Somatic Symptoms

Parents reported on 12 physical complaints in the past 2 weeks (e.g., "Headaches," "Dizziness," or "Poor appetite," 1 = not at all to 4 = almost every day; $\propto$ = .83; adapted from Resnick et al. 1997; Udry and Bearman 1998).

Parent–Adolescent Relationship Quality

Parents reported how much they understood and supported their adolescent with nine items (e.g., "You helped your

child talk about his/her difficulties" or "Your child trusted you," 1 = almost never to 5 = almost $\propto$ = .82; Armsden and Greenberg 1987).

Parent–Adolescent Conflict

Parents also reported how much conflict they had with their adolescent by responding to 10 items (e.g., "You and your child got into a serious argument or fight" or "You and your child ignored each other," 1 = almost never to 5 = almost always; $\propto$ = .86; Ruiz et al. 1998).

Results

The maximum likelihood with missing values (MLMV) function in STATA was employed to estimate the values for the regression and mediation models. Given the number of variables in the models, listwise deletion would have only used about 86 % of the total sample. Therefore, in order to utilize all available observations and acquire unbiased estimates in the presence of missing data, models were estimated using MLMV.

Every model controlled for parental generational status and education, total household income, and adolescent school, grade, and gender. First, we tested the association between parental stress and parental involvement. Then, we assessed the mediating role of parental depressive and somatic symptoms in any observed association between stress and parental involvement. Finally, we also tested the mediating role of family relationships (i.e., parent–adolescent relationship quality and parent–adolescent conflict) in any association between stress and parental involvement.

Table 1 shows descriptive statistics for the key variables. Parents generally reported higher levels of home academic involvement relative to school involvement, $t(427) = 30.25$, $p < .001$. They also reported generally higher levels of support and lower levels of conflict, $t(427) = 42.48$, $p < .001$. Measures of stress were correlated negatively both with school and home academic involvement. Parental support was positively correlated with academic involvement and negatively associated with stress measures.

Family Stress and Parental Involvement

First, we tested the association between parental stress and parental involvement. As shown in Model 1 of Table 2, parental stressors were linked with lower levels of academic involvement at home and at school. With both stressors in the model, financial strain was negatively associated with school involvement, but major family life events were linked with lower levels of academic involvement at home. Again, these associations controlled for parental generational status and education, total household income, adolescent school, grade, and gender.

Parental Depressive and Somatic Symptoms, and Family Relationships as Mediators

Next, we tested the mediating role of parental depressive and somatic symptoms in the link between parental stress and their academic involvement. Model 2 of Table 2 shows that parental reports of depressive symptoms and somatic symptoms were not significant predictors of school and home involvement, therefore they were not expected to be statistically significant mediators of the initial association of parental stress with academic involvement. Bootstrapping in STATA, using 10,000 iterations confirmed this, both in the link between financial strain and school academic involvement (indirect $\text{effect}_{\text{depressive symptoms}} = .000$, 95 % *CI* [−.050, .050.]; indirect $\text{effect}_{\text{somatic symptoms}} = -.003$, 95 % *CI* [−.027, .017]), and in the link between major family life events and home academic involvement (indirect $\text{effect}_{\text{depressive symptoms}} = -.008$, 95 % *CI* [−.028, .438]; indirect $\text{effect}_{\text{somatic symptoms}} = -.005$, 95 % *CI* [−.025, .011.]).

We also examined whether family relationships accounted for the association between parental stress and their academic involvement. Model 3 in Table 2 shows that parental reports of the relationship quality between them and their adolescents—but not conflict between the dyad—were a significant predictor of both school and home involvement. Bootstrapping in STATA, using 10,000 iterations, confirmed the mediating role of parent–adolescent relationship quality in the association between financial strain and school involvement (indirect effect = −.060, 95 % *CI* [−.101, −.024.]) and the association between major family life events and home involvement (indirect effect = −081, 95 % *CI* [−.134, −.034]). Conflict between parents and adolescents was not a significant mediator for the link between financial strain and school involvement (indirect effect = −005, 95 % *CI* [−.009, .023]) or the association between major family life events and home involvement (indirect $\text{effect}_{\text{conflict}} = .004$, 95 % *CI* [−.008, .022.]). That is, the link between financial strain and *school* involvement, as well as the link between major family life events and *home* involvement were explained by parental reports of the relationship quality between parents and their adolescent, over and above (a) the other stressor, (b) parental depressive and somatic symptoms and (c) parental generational status and education, total household income, and adolescent school, grade and gender.

Table 1 Key variable correlations

	Mean	(SD)	1	2	3	4	5	6	7
1. School involvement	2.92	(.92)							
2. Home involvement	4.10	(.75)	.55***						
3. Financial strain	2.76	(.71)	−.21***	−.13**					
4. Major family life events	.67	(.87)	−.10*	−.13**	.06				
5. Depressive symptoms	1.69	(.53)	−.15**	−.11*	.32***	.29***			
6. Somatic symptoms	1.57	(.52)	−.10*	−.09	.15***	.17***	.59***		
7. Parent–adolescent relationship quality	4.19	(.71)	.35***	.51***	−.16***	−.14**	−.19***	−.14**	
8. Parent–adolescent conflict	1.95	(.74)	−.04	−.09†	−.11*	.12**	.22***	.18***	−.14**

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 2 Stress predicting parent involvement at home and at school, mediated by parental depressive and somatic symptoms and family relationships

	Model 1		Model 2		Model 3	
	b	(*SE*)	*b*	(*SE*)	*b*	(*SE*)
School involvement						
Financial strain	−.15*	.07	−.13†	.08	−.11	.07
Major family life events	−.10*	.05	−.08	.05	−.05	.05
Parent depressive symptoms			−.06	.11	.00	.11
Parent somatic symptoms			−.06	.10	.03	.10
Parent–adolescent relationship quality					.38***	.06
Parent–adolescent conflict					−.04	.06
Home involvement						
Financial strain	−.08	.06	−.06	.06	−.03	.05
Major family life events	−.11**	.04	−.10*	.04	−.05	.04
Parent depressive symptoms			−.04	.09	−.04	.08
Parent somatic symptoms			−.09	.09	−.04	.07
Parent–adolescent relationship quality					.52***	.05
Parent–adolescent conflict					−.04	.05

Regressions controlled for parent education level, family income, parent generational status, adolescent gender, grade and school

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Discussion

Latino students tend to fall behind academically (Grieco et al. 2012), and previous research has found that parental involvement predicts achievement (Altschul 2012; Keith and Lichtman 1994). Even though Latino parents tend to report high academic expectations (Goldenberg et al. 2001), stress could attenuate their involvement. This study examined whether stress was associated with lower levels of parental academic involvement, and whether this link was explained by family functioning—or parental depressive and somatic symptoms and family relationships.

We found that stressful events were, indeed, associated with lower levels of parental involvement. This was similar to studies showing that financial strain plays a role in the involvement that parents are able to provide (Altschul 2012; Gutman and Eccles 1999; McLoyd 1990). Moreover, we found that different types of stress were differentially linked with parental involvement. Specifically, financial strain was negatively associated with school involvement, but major family life events were linked with lower levels of home academic involvement.

Understanding what limits involvement at school is important. A study with Latino middle and high school students found that the association between school involvement and adolescent achievement was mediated by teachers' perceptions of the student (Kuperminc et al. 2008). That is, parental involvement in school may be helpful to adolescents, because it shifts teachers' expectations of the student. Our study builds on extant research by

showing that financial strain may prevent parents of high school students from participating in school functions (Gutman and Eccles 1999; McLoyd 1990), which seems to be especially beneficial for high school students (Kuperminc et al. 2008). Our findings may serve to inform perceptions of academic personnel regarding Latino parents by contextualizing their academic involvement within financial and familial stressors.

Major family life events seem to function differently, by predicting less academic involvement at home. Acute stressors may impact parents' daily lives (Compas 1987), which may limit their time or energy for academic involvement in the home. Our study found that when Latino families faced acute stressors with regard to their family—such as moving away from family and friends, or experiencing a death in the family—parents were less able to provide academic involvement in the home. Participating in academic activities entails that parents invest time and patience (Gutman and Eccles 1999; McLoyd 1990), and acute family stressors may deplete these in the home—thus limiting parental involvement in that setting. This is important because some research has found that Latino parents participate at home more than they do at school (Mau 1997), which may be even more important for academics (Hill and Tyson 2009).

We then sought to examine whether parental depressive and somatic symptoms helped to explain the link between familial stress and parental academic involvement. Studies with parents of younger children found that parental depressive and somatic symptoms were linked with lower levels of academic involvement at school and at home (Denollet et al. 2007; Kohl et al. 2000; LaForett and Mendez 2010; Valdez et al. 2013). Our study, however, found that neither parental depressive nor somatic symptoms explained the negative link between parental stress and their academic involvement. It is unclear why our study did not find a similar pattern, but our findings suggest that relationship quality between parents and their adolescents may play a more significant role than parental depressive and somatic symptoms during the years of adolescence.

We also sought to examine the mediating role of family relationships in the association between stress and parental involvement. We found support for the family stress model, which posits that family functioning helps explain the link between stress and adverse outcomes (Conger et al. 1994). Specifically, parental reports of the relationship quality between them and their adolescents mediated the link between parental stress and their own academic involvement both at school and at home. These findings suggest that parental academic involvement may be a function of familial ties and meaningful social connections with their adolescents. Adams and Christenson (2000) found that trust between teachers and parents decreased across development—with more trust being reported in elementary school than high school. Perhaps by the time students are in high school, trust shifts to the adolescent. Thus, if stressors limit the relationship quality that parents are able to foster between them and their adolescents, this could, in turn, affect their academic involvement. Additionally, research with Mexican-origin families also finds that adolescents tend to respond to the daily needs of their parents (Tsai et al. 2013). It could also be that a supportive relationship between parents and adolescents ameliorates the effects of stress for parents, allowing them to continue being involved in the academics of their adolescents.

It is important to note, that it was support, and not conflict, that helped explain the link between parental stress and their academic involvement. Other studies have found similar patterns. For example, among Mexican–American adolescents, the link between financial strain and adolescent externalizing symptoms was explained by maternal and paternal warmth, but not harsh parenting (Gonzales et al. 2011). In another study, resilience in the midst of financial strain was predicted by support from parents, siblings and other adults—but conflict in the family was linked with adolescent internalizing (Conger et al. 1994).

These results should be interpreted with caution, due to the cross-sectional nature of this study. Family stress may reduce positive parenting in a general fashion, rather than setting into motion the mediational model we proposed and tested. This generalized decrease in positive parenting, in turn, may be what is driving lower levels of the relationship quality between parents and adolescents, as well as parents to be less involved in the academic context of their adolescents. Future research employing qualitative and longitudinal data should examine the specific role that Latino adolescents play in the academic involvement of their parents. Obtaining these reports from adolescents would further strengthen those analyses. Furthermore, examining these factors longitudinally would allow us to differentiate between short-term and long-term stressors. For example, would family processes change after many years of stressors (e.g., a new disability in the family)—or even many years of resources (e.g., a former single-parent home gains a caring step-parent)? It is also important to examine immigrant parental awareness and comfort with navigating American school systems across development. The discomfort that parents report feeling when becoming involved in school (Martinez et al. 2004; Monzó 2013; Ramírez 2003) may exacerbate as the education system shifts to high school, when there is less contact with teachers (Adams and Christenson 2000) and course content becomes more difficult (Neild 2009).

To our knowledge, this is the first study to find that specific stressors are differentially associated with parental

involvement at school and home. Additionally, our study may be the first to examine the parent–adolescent relationship quality as a mediator between this stress and academic involvement. Other studies should examine this model with other ethnic groups. It could be that the mediating role of the relationship quality between parents and adolescents is salient with Mexican-origin families, due to the important role of family and family cohesion in this population (Parke et al. 2004; Stein et al. 2014). Conceivably, the relationship quality between parents and adolescents would still be a mediator in other groups, but may be more salient for families that value family cohesion (Telzer et al. 2014).

The findings from this study show that financial and familial stressors limit Latino parental involvement at school and at home. Supporting families under stress may prove useful for the achievement of their adolescents (Hill and Tyson 2009; Jeynes 2007; Kuperminc et al. 2008), if it means that parents are more able to be involved in the academics of their adolescents. Additionally, although challenging, finding ways to help parents foster higher relationship quality between them and their adolescents may provide a familial context where parents can continue being involved despite contextual stressors.

Conclusion

Our study found that parental stress was associated with lower levels of involvement at home and at school. Interestingly, there was a distinction between the type of stressor and the type of involvement it seemed to limit. Financial strain was associated with lower levels of involvement at school, and acute family stressors, or major family life events, were associated with less academic involvement at home. Moreover, we found that the quality of the relationship between parents and adolescents—but not conflict with their teenager, or their own depressive and somatic symptoms—explained both of these associations. That is, our results suggest that the reason that stress is associated with lower levels of involvement is because stress may limit the positive relationship quality between parents and adolescents. Thus, understanding parental involvement within the context of family dynamics may better inform predictors to the efforts that parents employ—in the form of school and home academic involvement—to fulfill the high academic aspirations that they report for their adolescents.

Acknowledgments The research was supported by funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (R01-HD057164) and the UCLA California Center for Population Research, which is supported by the National Institute of Child Health and Human Development (R24-HD041022). The content does not necessarily represent the official views of the National Institute of Child Health and Human Development or the National Institutes of Health.

Author Contributions Daisy E. Camacho-Thompson participated in the design, performed the statistical analysis and interpretation of the data, as well as helped draft the manuscript. C.G.I. participated in the design and coordination of the study and helped revise the manuscript. N.A.G. conceived of the study, participated in its design and coordination, and helped revise the manuscript. A.J.F. conceived of the study, and participated in its design and coordination, interpretation of the data, and helped draft the manuscript. All authors read and approved the final manuscript.

Conflict of interest Daisy E. Camacho-Thompson declares that she has no conflict of interest. Cari Gillen-O'Neel declares that she has no conflict of interest. Nancy A. Gonzales declares that she has no conflict of interest. Andrew J. Fuligni declares that he has no conflict of interest.

Ethical Standard All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The study complied with APA ethical standards in the treatment of our human sample.

Informed Consent Informed consent was obtained from all individual participants included in the study.

References

Adams, K. S., & Christenson, S. L. (2000). Trust and the family–school relationship examination of parent–teacher differences in elementary and secondary grades. *Journal of School Psychology, 38*, 477–497.

Altschul, I. (2012). Linking socioeconomic status to the academic achievement of Mexican American youth through parent involvement in education. *Journal of the Society for Social Work and Research, 3*, 13–30.

Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence, 16*, 427–454.

Benner, A. D., & Kim, S. Y. (2010). Understanding Chinese American adolescents' developmental outcomes: Insights from the family stress model. *Journal of Research on Adolescence, 20*, 1–12.

Ceballo, R., Maurizi, L. K., Suarez, G. A., & Aretakis, M. T. (2013). Gift and sacrifice: Parental involvement in Latino adolescents' education. *Cultural Diversity and Ethnic Minority Psychology, 20*, 116–127.

Compas, B. E. (1987). Coping with stress during childhood and adolescence. *Psychological Bulletin, 101*, 393–403.

Conger, R. D., & Conger, K. J. (2002). Resilience in Midwestern families: Selected findings from the first decade of a prospective, longitudinal study. *Journal of Marriage and the Family, 64*, 361–373.

Conger, R. D., Ge, X., Elder, G. H., Lorenz, F. O., & Simons, R. L. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child Development, 65*, 541–561.

Conger, R. D., Wallace, L. E., Sun, Y., Simons, R. L., McLoyd, V. C., & Brody, G. H. (2002). Economic pressure in African American

families: A replication and extension of the family stress model. *Developmental Psychology, 38*, 179–193.

Cooper, H., Lindsay, J. J., & Nye, B. (2000). Homework in the home: How student, family, and parenting-style differences relate to the homework process. *Contemporary Educational Psychology, 25*, 464–487.

Denollet, J., Smolderen, K. G., van den Broek, K. C., & Pedersen, S. S. (2007). The 10-item remembered relationship with parents (RRP^{10}) scale: Two-factor model and association with adult depressive symptoms. *Journal of Affective Disorders, 100*, 179–189.

DePlanty, J., Coulter-Kern, R., & Duchane, K. A. (2007). Perceptions of parent involvement in academic achievement. *The Journal of Educational Research, 100*, 361–368.

Durand, T. M., & Perez, N. A. (2013). Continuity and variability in the parental involvement and advocacy beliefs of latino families of young children: Finding the potential for a collective voice. *School Community Journal, 23*, 49–79.

Eamon, M. K. (2005). Social-demographic, school, neighborhood, and parenting influences on the academic achievement of Latino young adolescents. *Journal of Youth and Adolescence, 34*, 163–174.

Fan, X. (2001). Parental involvement and students' academic achievement: A growth modeling analysis. *The Journal of Experimental Education, 70*, 27–61.

Goldenberg, C., Gallimore, R., Reese, L., & Garnier, H. (2001). Cause or effect? A longitudinal study of immigrant Latino parents' aspirations and expectations, and their children's school performance. *American Educational Research Journal, 38*, 547–582.

Gonzales, N. A., Coxe, S., Roosa, M. W., White, R. M., Knight, G. P., Zeiders, K. H., & Saenz, D. (2011). Economic hardship, neighborhood context, and parenting: Prospective effects on Mexican–American adolescent's mental health. *American Journal of Community Psychology, 47*, 98–113.

Gonzalez-DeHass, A. R., Willems, P. P., & Holbein, M. F. D. (2005). Examining the relationship between parental involvement and student motivation. *Educational psychology review, 17*, 99–123.

Grieco, E. M., Acosta, Y. D., de la Cruz, G. P., Gambino, C., Gryn, T., Larsen, L. J., et al. (2012). The Foreign-born population in the United States: 2010. *American Community Survey Reports, 19*, 1–22.

Gutman, L. M., & Eccles, J. S. (1999). Financial strain, parenting behaviors, and adolescents' achievement: Testing model equivalence between African American and European American single-and two-parent families. *Child Development, 70*, 1464–1476.

Hill, N. E., & Torres, K. (2010). Negotiating the American dream: The paradox of aspirations and achievement among Latino students and engagement between their families and schools. *Journal of Social Issues, 66*, 95–112.

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45*, 740.

Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*, 213–218.

Hoover-Dempsey, K. V., Walker, J. M., Sandler, H. M., Whetsel, D., Green, C. L., Wlkins, A. S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal, 106*, 105–130.

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement a meta-analysis. *Urban Education, 42*, 82–110.

Keith, P. B., & Lichtman, M. V. (1994). Does parental involvement influence the academic achievement of Mexican–American eighth graders? Results from the National Education Longitudinal Study. *School Psychology Quarterly, 9*, 256.

Kelly, S. (2004). Do increased levels of parental involvement account for social class differences in track placement? *Social Science Research, 33*, 626–659.

Kohl, G. O., Lengua, L. J., & McMahon, R. J. (2000). Parent involvement in school: Conceptualizing multiple dimensions and their relations with family and demographic risk factors. *Journal of School Psychology, 38*, 501–523.

Kuperminc, G. P., Darnell, A. J., & Alvarez-Jimenez, A. (2008). Parent involvement in the academic adjustment of Latino middle and high school youth: Teacher expectations and school belonging as mediators. *Journal of Adolescence, 31*, 469–483.

LaForett, D. R., & Mendez, J. L. (2010). Parent involvement, parental depression, and program satisfaction among low-income parents participating in a two-generation early childhood education program. *Early Education and Development, 21*, 517–535.

LeFevre, A. L., & Shaw, T. V. (2012). Latino parent involvement and school success: Longitudinal effects of formal and informal support. *Education and Urban Society, 6*, 707–723.

Martinez, C. R., DeGarmo, D. S., & Eddy, J. M. (2004). Promoting academic success among Latino youths. *Hispanic Journal of Behavioral Sciences, 26*, 128–151.

Mau, W. C. (1997). Parental influences on the high school students' academic achievement: A comparison of Asian immigrants, Asian Americans, and White Americans. *Psychology in the Schools, 34*, 267–277.

McLoyd, V. C. (1990). The impact of economic hardship on black families and children: Psychological distress, parenting, and socioemotional development. *Child Development, 61*, 311–346.

Melby, J. N., & Conger, R. D. (1996). Parental behaviors and adolescent academic performance: A longitudinal analysis. *Journal of Research on Adolescence, 6*, 113–137.

Mireles-Rios, R., & Romo, L. F. (2010). Maternal and teacher interaction and student engagement in math and reading among Mexican American girls from a rural community. *Hispanic Journal of Behavioral Sciences, 32*, 456–469.

Monzó, L. D. (2013). A mother's humiliation: School organizational violence toward Latina mothers. *School Community Journal, 23*, 81–110.

Morales, L. S., Lara, M., Kington, R. S., Valdez, R. O., & Escarce, J. J. (2002). Socioeconomic, cultural, and behavioral factors affecting Hispanic health outcomes. *Journal of Health Care for the Poor and Underserved, 13*, 477–503.

Neild, R. C. (2009). Falling off track during the transition to high school: What we know and what can be done. *The Future of Children, 19*, 53–76.

Parke, R. D., Coltrane, S., Duffy, S., Buriel, R., Dennis, J., Powers, J., et al. (2004). Economic stress, parenting, and child adjustment in Mexican American and European American Families. *Child Development, 75*, 1632–1656.

Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401.

Ramírez, A. F. (2003). Dismay and disappointment: Parental involvement of Latino immigrant parents. *The Urban Review, 35*, 93–110.

Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., & Udry, J. R. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study on adolescent. *Health., 278*, 823–832.

Rogers, M. A., Theule, J., Ryan, B. A., Adams, G. R., & Keating, L. (2009). Parental involvement and children's school achievement: Evidence for mediating processes. *Canadian Journal of School Psychology, 24*, 34–57.

Ruiz, S. Y., Gonzales, N. A., & Formoso, D. (1998). Multicultural, multidimensional assessment of parent–adolescent conflict. In *Poster presented at the Seventh Biennial Meeting of the Society for Research on Adolescence, San Diego, CA*.

Ryan, C. S., Casas, J. F., Kelly-Vance, L., Ryalls, B. O., & Nero, C. (2010). Parent involvement and views of school success: The role of parents' Latino and White American cultural orientations. *Psychology in the Schools, 47*, 391–405.

Shumow, L., & Miller, J. D. (2001). Parents' at-home and at-school academic involvement with young adolescents. *The Journal of Early Adolescence, 21*, 68–91.

Stein, G. L., Cupito, A. M., Mendez, J. L., Prandoni, J., Huq, N., & Westerberg, D. (2014). Familism through a developmental lens. *Journal of Latina/o Psychology, 2*, 224–250.

Telzer, E. H., Gonzales, N., & Fuligni, A. J. (2014). Family obligation values and family assistance behaviors: Protective and risk factors for Mexican-American adolescents' substance use. *Journal of Youth and Adolescence, 43*, 270–283.

Tsai, K. M., Telzer, E. H., Gonzales, N. A., & Fuligni, A. J. (2013). Adolescents' daily assistance to the family in response to maternal need. *Journal of Marriage and Family, 75*, 964–980.

Udry, J. R., & Bearman, P. S. (1998). New methods for new research on adolescent sexual behavior. In R. Jessor (Ed.), *New perspectives on adolescent risk behavior* (pp. 241–269). New York, NY: Cambridge University Press.

Valdez, C. R., Shewakramani, V., Goldberg, S., & Padilla, B. (2013). Parenting influences on Latino children's social competence in the first grade: Parental depression and parent involvement at home and school. *Child Psychiatry and Human Development, 44*, 646–657.

Valencia, R. R. (2002). "Mexican Americans don't value education!" On the basis of the myth, mythmaking, and debunking. *Journal of Latinos and Education, 1*, 81–103.

Daisy E. Camacho-Thompson, M.A. is a Doctoral Student in the Department of Psychology at the University of California, Los Angeles. Daisy is interested in the academic achievement of low-income, potentially first generation college students, and/or minority middle and high school students with particular attention to the social networks that are associated with academic resilience or desistance such as parents, family, mentors and after-school activities.

Cari Gillen-O'Neel, Ph.D. is a Professor in the Psychology Department at Macalester College. Dr. Gillen-O'Neel examines the social and educational implications of children's collective identities—identities rooted in group membership, including demographic groups (e.g., ethnicity and gender) and institutional groups (e.g., school).

Nancy A. Gonzales, Ph.D. is a Professor in the Department of Psychology at Arizona State University. Dr. Gonzales examines cultural and contextual influences on social, academic and psychological development of youth across the lifespan. The aims of this work are to translate finding into community-based intervention that are effective at promoting successful adaptation and reducing social inequalities and health disparities for high-risk populations.

Andrew J. Fuligni, Ph.D. is Professor in the Department of Psychiatry and Biobehavioral Sciences and the Department of Psychology. He also is a Senior Scientist in the Semel Institute for Neuroscience and Human Behavior. Dr. Fuligni's research focuses on adolescent development among culturally and ethnically diverse populations, with particular attention to teenagers from immigrant Asian and Latin American backgrounds.

Journal of Youth & Adolescence is a copyright of Springer, 2016. All Rights Reserved.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

HHS Public Access

Author manuscript

J Fam Issues. Author manuscript; available in PMC 2018 March 05.

Published in final edited form as:

J Fam Issues. 2018 ; 39(2): 328–351. doi:10.1177/0192513X16644639.

Disagreement in Parental Reports of Father Involvement

Pajarita Charles[1], **Jill Spielfogel**[1], **Deborah Gorman-Smith**[1], **Michael Schoeny**[1], **David Henry**[2], and **Patrick Tolan**[3]

[1]University of Chicago, Chicago, IL, USA

[2]University of Illinois at Chicago, IL, USA

[3]University of Virginia, Charlottesville, VA, USA

Abstract

Despite agreement on the value of father involvement in children's lives, research has been limited due to the exclusion of fathers in studies, questionable validity of mothers' reports on father involvement, and simple measures of fathering behavior. Our study extends previous research by comparing reports of father involvement using robust, multidimensional father involvement measures. Data from 113 fathers and 126 mothers reporting on 221 children were used to assess father involvement. Results indicate that fathers reported significantly higher levels of involvement than mothers reported. Findings from hierarchical linear models suggest that race/ethnicity and mothers' reports of positive relationship quality were associated with smaller discrepancies in reports of father involvement, whereas nonmarried partnerships, older children, father residence, and biological status predicted larger discrepancies. Our study demonstrates the importance of obtaining father involvement reports directly from fathers and why father involvement should be assessed as a multidimensional construct to examine fathering behavior.

Keywords

father involvement; parent report; informant discrepancies; low-income families; parental relationship quality

Substantial evidence supports the benefits of father involvement for child development, including improved academic achievement, social and cognitive skills, mental health, and self-esteem (Carlson & Magnuson, 2011; Flouri & Buchanan, 2003; Pleck, 2010; Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2008). Consequently, researchers and policy makers have sought to better understand the extent and qualities of father involvement among increasingly diverse family configurations and the impact of variation in involvement on children's development.

Reprints and permissions: sagepub.com/journalsPermissions.nav

Corresponding Author: Pajarita Charles, School of Social Service Administration, University of Chicago, 969 East 60th Street, Chicago, IL 60637, USA. pcharles@uchicago.edu.

Any opinions, findings, conclusions, or recommendations expressed in this article are those of the author(s) and do not necessarily reflect the views of the Eunice Kennedy Shriver National Institute of Child Health and Human Development (the funding agency).

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Despite advances in research on fathering, many issues remain. The nature and quality of father–child interactions has received relatively little attention with significant focus on limited aspects of father involvement such as extent of contact and child support (e.g., Berger, Cancian, & Meyer, 2012), particularly among nonresident fathers and cohabiting or "social" fathers (Bronte-Tinkew, Moore, & Halle, 2002; Lamb, 2000). In addition, many studies have relied only on mothers' reports of father involvement (Hernandez & Coley, 2007). In the limited number of studies that have collected data on father involvement from both fathers and mothers, discrepancies between reports have been found, with fathers generally reporting higher levels of involvement than mothers' report of fathers' involvement (Seltzer & Brandreth, 1994; Smock & Manning, 1997). What evidence exists suggests the extent of discrepancy varies by dimensions of involvement and the nature of the relationship between the father and mother (e.g., cohabiting vs. noncohabiting, extent of interpersonal conflict). To better understand the role of fathers in child development and the effects of programs targeting fathers and parenting, measures and measurement models capturing relevant elements of father involvement are needed. In addition, there is a need to better understand the nature and meaning of differences between mother and father reports of involvement. This study contributes to the growing body of knowledge on father involvement by evaluating these discrepancies in a sample of children and parents living in high-risk, economically disadvantaged urban environments.

Background

Measuring Father Involvement

As research on the role of fathers has increased in the past 30 years, operationalization of father involvement has broadened to include multiple dimensions of meaningful contributions by fathers to their children's development (see, e.g., Lamb, Pleck, Charnov, & Levine, 1987). Lamb et al. (1987) furthered fathering scholarship when they expanded the construct of father involvement to include three core domains in which fathers are involved with their children: accessibility, engagement, and responsibility. Accessibility is defined as being emotionally present and physically available to the child; engagement refers to interaction with the child in one-on-one activities such as playing, feeding, or putting the child to bed; and responsibility refers to making important decisions about the child's life and helping plan and assist in providing needed resources for the family.

Concurrent with work in the fathering field that developed in the 1970s and 1980s, attention to fatherhood by the federal government emerged in the 1990s as part of federal welfare reform efforts focused on marriage promotion and responsible fathering. In 1994, an Interagency Forum on Child and Family Statistics was created with a multidisciplinary group of researchers, policy makers, and practitioners to coordinate and integrate collection and reporting of data on children and families. The Developing a Daddy Survey (DADS; Cabrera et al., 2004) was one of a series of "Targets of Opportunity" identified by the forum, and was designed to improve the federal government's capacity to conceptualize, measure, and gather data from men on fertility and their roles as fathers. The DADS project helped serve as the foundation for measurement development work of fathering in several future studies, including the study from which the data in this article are drawn.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Differences in Reports on Father Involvement

Although early research identified differences between mothers' and fathers' reports on father involvement (Seltzer & Brandreth, 1994), Coley and Morris (2002) were the first to examine predictors of these discrepancies. Using data from "Welfare, Children, and Families: A Three City Study," the authors analyzed consensus among 228 mother–father pairs, with each pair reporting on the same child (aged 2–4 years). Consistent with previous research, mothers reported lower father involvement than fathers reported, although level of involvement was highly correlated among mothers and fathers, and parents overall reported high levels of father involvement. Coley and Morris (2002) also found increased discrepancies in families in which: parents did not live together, parents reported high levels of conflict, father was older than the mother, mother had more education, and mother was employed. Significant differences in reports were also found when the time between parent interviews was longer.

Mikelson (2008) also compared reports by mothers and fathers using a sample of 2,058 families with 3-year-old children from the Fragile Families and Child Wellbeing Study. Similar to Coley and Morris (2002), Mikelson (2008) found that both mothers and fathers reported high levels of father involvement, with fathers reporting more involvement than mothers. Increased conflict between mothers and fathers, in addition to the length of time between interviews, predicted greater discrepancy in reporting, as did father residency and mother–father relationship quality, marital status, age of children, and whether the mother received financial help from anyone other than the father. Parents' reports of emotional involvement were more similar when the father and mothers were married and lived together. Thus, while these two studies found parent relationship quality and time between interviews related to greater discrepancies, they differed in their findings of father residency, father age, maternal education, and financial support from someone other than the father, suggesting the need for additional research.

Another notable difference between the two studies was that Mikelson (2008) used two methods to evaluate disagreement, exact agreement and mean discrepancy scores. Analysis using exact agreement showed that parents living together had higher levels of agreement than parents living apart, while the opposite was true when using mean difference scores. The difference in results highlights the importance of the conceptualization and measurement of *discrepancy* and again, suggests the value in conducting further research.

Research Questions

We examined discrepancies in reports by mothers and fathers about father involvement using a sample composed of low-income, minority families. We used three dimensions of father involvement—accessibility, engagement, and responsibility—to assess for a more nuanced understanding of discrepancies in father involvement reports than has been conducted previously. Based on Mikelson's (2008) study, we conducted analyses using two measures of discrepancy. First, we examined exact agreement between mothers and fathers on an extensive range of father involvement measures providing corollary information to Mikelson's (2008) study. Second, we evaluated differences in mean scores of reports on the three dimensions to establish the extent of discrepancies. Then, we added a third assessment

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

and examined interrater agreement with one-way random effects intraclass correlations (ICCs; Shrout & Fleiss, 1979). Finally, we evaluated factors (e.g., mother and father demographic characteristics, relationship quality and status, and child characteristics) associated with reporting differences. This combination of rigorous analyses extends previous research in several ways: (a) using diverse measures of involvement, (b) including biological and nonbiological children as the basis for parental reports of involvement to account for repartnering and complex family arrangements, and (c) using complete father-report data instead of relying on mother reports when father reports are absent.

Method

Data

We drew data from the Chicago Youth Development Study, a longitudinal study of developmental risk among young African American and Latino males in disadvantaged urban Chicago neighborhoods (Tolan, Gorman-Smith, & Henry, 2003). Participants who had become fathers (n = 164) were asked a wide range of questions, including their relationship with their children, level and type of father involvement, financial and other support for their children, and their relationship with the mother(s) of their children. The mothers of each of their children were also interviewed using parallel measures resulting in uniquely matched data for up to five children. In some cases, multiple mothers were interviewed if the father had partnered with more than one mother.

The analytic sample consisted of matched mother–father pairs assessed in two waves of data collection when fathers were between the ages of 20.5 and 30.5 years. We retained mother–father pairs from the first wave whenever possible and added unduplicated pairs from the second wave when there was no mother–father pair available in the first wave. Interviews conducted more than 365 days apart were excluded from the sample (n = 8), as were cases with missing data on independent and dependent variables (n = 9). Our final sample used data from 221 children from 113 fathers and 126 mothers. The vast majority of children (96%) were reported to be living with their mother most of the time; the rest of the children in the sample were living with their father (3%) or a grandparent or other relative most of the time (1%).

Measures

Dependent Variables—The outcome variables are discrepancies between mothers' and fathers' reports on father involvement in three domains of father involvement (Lamb et al., 1987): accessibility (two items), engagement (three subscales), and responsibility (three subscales). These measures were developed by the DADS Initiative (Cabrera et al., 2004; Cabrera & Peters, 2000).

Father accessibility—We measured accessibility using two items asked of all matched pairs for each child reported: "How often can you (or *the father* when asked of mothers) see the child?" and "How often do you (or the father) see the child?" The frequency of perceived access was measured with a six-category Likert-type scale (1 = *any time I want to*, 2 = *once per day but not anytime I want to*, 3 = *once per week but not every day*, 4 = *between once*

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

per week and once per month, 5 = *less than once per month*, 6 = *never*). We subsequently reverse-coded the scale so higher numbers would be associated with higher levels of perceived access to the child. We measured frequency of contact using a five-category Likert-type scale (1 = *never*, 2 = *rarely*— maybe once or twice per year, 3 = *sometimes*—about once a month or so, 4 = *often*—not every day but several times per week or month, or 5 = *every day*). We constructed both measures using the mean of nonmissing values, and we used both measures as continuous variables.

Father engagement—The engagement domain of father involvement consisted of three subscales: (a) recreation and leisure (6 items), (b) education (2 items), and (c) caregiving (5 items). For each question in the engagement domain, parents were asked, "How many times in the past month have you (or has the father) done any of the following with (child's name)?" For each item, respondents reported how often the father engaged in activities with his child (1 = *at least once per day*, 2 = *a few times per week*, 3 = *a few times per month*, 4 = *rarely*, or 5 = *not at all in the past month*). We reverse-coded responses so higher numbers indicated more frequency of involvement. We then created mean scores using nonmissing values ranging from 1 to 5.

Father responsibility—The responsibility domain consisted of three subscales: (a) assistance with planning (18 items), (b) financial contributions (8 items), and (c) the father's influence on important decisions related to the child (8 items). For assistance with planning, fathers and mothers were asked, "Please tell me who makes sure these things get done for (child's name)? That is, who usually takes responsibility for making sure that (child's name) gets these things or services? By responsibility we don't mean paying for the item or service, but just making sure that the service gets done." For each of the 18 items, we collapsed the original five-category response set indicating who helped with those items (1 = *father*, 2 = *mother*, 3 = *both*, 4 = *someone else*, or 5 = *no one*) into a single indicator variable representing any occurrence of a father's help with planning (1 = *father or both parent contributed*, 0 = *mother, someone else, or no one contributed* to the items). We constructed the final planning measure by taking the mean of the nonmissing 18 indicator variables measuring whether the father was involved in helping with planning.

Similarly, father's financial investment was based on one question asked of all fathers and mothers regarding eight distinct items: "Please tell me who usually pays for the following for (child's name). Is it mainly you (or *the father* when asked of mothers), mainly the child's mother (or *you* if asked of the mother), both of you equally, or mainly someone else?" We used the same approach to construct the financial investment subscale measure that we used with the planning subscale.

The third subscale in the responsibility domain represented how much influence fathers had in making decisions related to the child's care. Parents were asked, "How much influence do or does (you/father's name) have in major decisions such as …" For each of the eight items, we collapsed the three-category response set indicating how much influence the father had on decisions (1 = *none*, 2 = *some*, 3 = *a lot*) into an indicator variable representing any degree of influence (0 = *none*, 1 = *some or a lot of influence*). The final score on the

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

influence scale was constructed by taking the mean of the nonmissing eight indicator variables measuring whether the father had influence in the related decisions.

Finally, using scores of father involvement obtained from the parental reports, we created a discrepancy score for each subscale using the three domains of involvement by subtracting the mean scores of matched responses from mothers and fathers on each subscale.

To verify that the subscales associated with the father engagement and responsibility domains reflected distinct dimensions of father involvement, we conducted confirmatory factor analyses of all the items. Father accessibility was not included because this domain is measured by two distinct items used as individual items in analyses. Multiple-fit indices including the root mean square error of approximation (RMSEA) and the comparative fit index (CFI) were used to evaluate model fit (Bentler, 1990; Steigler, 1990). The confirmatory factor analyses suggested that three-factor solutions for engagement and responsibility, respectively, were most appropriate. The final model for the engagement domain included three factors with six indicators for recreational involvement, two for educational involvement, and five for caregiv-ing with the following fit indices: $\chi^2(58, N = 146) = 90.9$, $p = .004$, RMSEA = .06, CFI = .99. The final model for the responsibility domain also included three factors with 18 indicators for planning, 8 for financial contributions, and 8 for influence with the following fit indices: $\chi^2(519, N = 149) = 618.4$, $p = .002$, RMSEA = .04, CFI = .98.

Covariates—Control variables were constructed for fathers (education, race/ethnicity, and household income), mothers (employment status), pairs (interview date difference, relationship quality reported by both the mother and father, and relationship status), and child (age, gender, biological status, and whether the child lived with the father).

Father characteristics—Level of education was measured by a question on school completion (1 = *less than 7 years of school*, 2 = *7–9 years of school*, 3 = *10–11 years of school*, 4 = *high school graduate*, 5 = *1 year of college or business/technical school*, 6 = *some college*, 7 = *college graduate*, 8 = *professional*—MA, MEd, MD, PhD) and whether fathers were currently employed (1 = yes, 0 = no). Education was used as a continuous variable. Total household income was used as a continuous measure (1 = *less than $5,000*; 2 = *$5,000–$9,999*; 3 = *$10,000–$14,999*; 4 = *$15,000–$19,999*; 5 = *$20,000–$24,999*; 6 = *$25,000–$29,999*; 7 = *$30,000–$39,999*; 8 = *$40,000–$49,999*; 9 = *$50,000* or more). Fathers' self-reports on race/ethnicity were collapsed into two categories (1 = non-Hispanic black, 0 = Hispanic or other race).

Mother's employment—Mother employment was assessed using a dichoto-mous variable of whether they were currently employed (1 = yes, 0 = no).

Pair characteristics—Both parents were asked, "In general, how would you describe your relationship with the child's mother/father?" (1 = *excellent*, 2 = *very good*, 3 = *good*, 4 = *fair*, 5 = *poor*). Relationship quality was used as a continuous variable with reverse-coded responses so higher numbers indicated better relationship quality. To address the issue of common method variance, since we included reports from mothers and fathers, we used (a)

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

mothers' reports of relationship quality and (b) a difference score generated by subtracting mothers' from fathers' scores (father – mother = difference score). Relationship status was also included based on fathers' reports on marital status and cohabitation with the mother, resulting in a four-category variable (1 = *married*, 2 = *cohabiting*, 3 = *romantically involved but not cohabiting*, 4 = *divorced/single/friend/sister*).

Child characteristics—Fathers reported the age of each child, which was treated as a continuous variable measured in years and months. Fathers also reported each child's biological status (1 = biological, 0 = nonbiological), and child gender was coded as a binary variable (1 = male, 0 = female). The father's residence was measured at the child level using a question asked of all fathers: "Do you currently live in the same house as (child's name)?" (1 = yes, 0 = no).

Analytic Strategy

We conducted the analysis in three stages. First, we used exact agreement in mother–father reports of father involvement to assess the frequency with which matched mother–father pairs answered survey questions identically. Evaluated at the item level across the three domains of father involvement, we determined exact agreement scores for 49 measures of father involvement. Second, we used basic descriptive analyses (paired *t* tests) to evaluate the mean scores of reports of involvement for two single items assessing accessibility, and three subscales each to assess dimensions of engagement (recreation, education, and caregiving) and responsibility (material planning, financial contribution, influence on major decisions). At the item and subscale level, we also calculated one-way random effects ICCs to further assess inter-rater agreement (Hallgren, 2012; Shrout & Fleiss, 1979). Finally, we used multilevel or hierarchical linear models (HLMs) to examine the effects of father- and child-level predictors on the outcome variables adjusting for clustering of children within fathers. The individual unconditional models (not shown) resulted in ICCs ranging from .46 to .78 suggesting that 46% to 78% of the variance in outcomes is due to differences across fathers. Mothers were treated as having child-level characteristics because so few fathers partnered with more than one mother. All models included key control variables at the father and mother/child level. Specification for the analytic models in HLM notation is presented below:

$$\begin{aligned}\mathrm{Yij}=&P0j+P1j(\text{Mother Emplоment})+P2j(\text{Child Sex})\\&+P3j(\text{Clild Age})+P4j(\text{Biological Child})+P5j(\text{Father Resident})\\&+P6j(\text{Mother Relationship Quality})+P7j\begin{pmatrix}\text{Father- Mother}\\\text{Relationship Quality}\end{pmatrix}\\&+P8j(\text{Days Between Interviews})+P9j(\text{Cohabiting vs. Married})\\&+P10j(\text{Noncohabiting Romantic vs. Married})\\&+P11j(\text{Nonromantic vs. Married})+\mathrm{rij}\end{aligned}$$

Level 1

(child/mother level)

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

$$P0j = B00 + B01(\text{Father Education}) + B02(\text{Father Race}) + B03(\text{Father Income}) + e0j$$
$$P1j = B10$$
$$P2j = B20 \ldots$$
$$P11j = B110$$

Level 2 (father level)

where *Yij* is an outcome measure for child *i* and father *j*, *B*00 is the intercept for all of the children of father *j*, *B*01 is the effect of father education on the outcome for all children of father *j*, *B*02 is the effect of father race on the outcome for all children of father *j*, *B*03 is the effect of father income on the outcome for all children of father *j*, and *B*11 through *B*110 are the effects of mother employment, child sex, child age, biological child, father residence, mother relationship quality, the difference between father and mother relationship quality, days between interviews, and three dummy codes for relationship status, respectively. *e*0*j* is the variance of child intercepts and *rij* is the residual term.

Results

The descriptive statistics for the sample are presented in Table 1. The majority of fathers were African American (73%) with an average household income of $20,000 to $24,999. Sixty-six percent of fathers reported having a high school degree or higher. Sixty-six percent of the children according to father reports (n = 145) lived with their father some or most of the time. Sixty-eight percent of mothers were currently employed at the time of the survey. Nearly, one quarter of father participants were married and over one third were cohabiting. Fewer than 10% were romantically involved but not cohabiting, and 33% were not romantically involved (i.e., divorced, single, friends). Fifty-four percent of the children in the sample were male, and 82% were biological children of fathers in the study. Children ranged in age between infants and 14 years old, with an average age of 4.6 years. Overall, parents reported relatively high relationship satisfaction, with fathers reporting higher levels of satisfaction than mothers reported (4.2 or very good vs. 3.7 or good, respectively).

Table 2 presents the results of the exact agreement analysis. We find strong agreement on both items measuring accessibility, with 86% of reports agreeing on how often the father can see the child (i.e., access), and 76% agreeing on how often the father sees the child (i.e., contact). Exact agreement on engagement was generally weak, with mothers and fathers agreeing less than 43% of the time on all items. For recreation, in most cases, pairs' reports were in precise agreement about one fourth to one third of the time. In addition, parents agreed on fathers' involvement in educational activities approximately one third of the time. Responses to questions on caregiving showed similar results with agreement scores ranging from 34% (giving a bath) to 42% (helping get dressed).

Contrary to engagement, exact agreement about responsibility was strong, particularly regarding questions on father's influence on the child. Pairs agreed at least 62% of the time

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

on all items in this subscale, with a high of 92% agreement regarding fathers' influence on safety. There was moderately strong agreement on fathers' financial responsibility (66% to 75%) and planning (51% to 88%). Specifically, parents agreed more than one half the time that the father arranged child care, attended school events, met with teachers, took time away from work if needed, and ensured the child had clothing. Parents agreed 61% to 88% of the time on the remaining items in the planning subscale.

The mean differences between mothers and fathers on each measure are shown in Table 3. Consistent with the exact agreement results, mean differences were generally greater regarding engagement, with smaller differences regarding responsibility. In addition, mothers consistently reported less father involvement than fathers reported. The average difference in reports on how often the father saw the child was statistically significant, with fathers ($M = 4.61$, $SD = 0.77$) reporting higher levels of contact than mothers ($M = 4.43$, $SD = 0.99$), $t(220) = 4.05$, $p < .001$. However, the difference in reports on how often the father *can* see the child was not statistically significant. Fathers reported significantly higher levels of recreation involvement ($M = 3.50$, $SD = 1.10$) than mothers reported about fathers' involvement ($M = 3.29$, $SD = 1.10$), $t(220) = 2.84$, $p < .01$, as well as caregiving ($M = 3.20$, $SD = 1.20_{\text{fathers}}$, $M = 2.86$, $SD = 1.24_{\text{mothers}}$), $t(220) = 3.79$, $p < .001$. Differences in the means of fathers' and mothers' reports on each subscale of responsibility were statistically significant, with pairs reporting average scores on planning ($M = 0.74$, $SD = 0.23_{\text{fathers}}$, $M = 0.59$, $SD = 0.31_{\text{mothers}}$), $t(220) = 7.45$, $p < .001$; financial responsibility ($M = 0.82$, $SD = 0.25_{\text{fathers}}$, $M = 0.63$, $SD = 0.38_{\text{mothers}}$), $t(220) = 8.02$, $p < .001$; and influence ($M = 0.87$, $SD = 0.19_{\text{fathers}}$, $M = 0.77$, $SD = 0.29_{\text{mothers}}$), $t(220) = 4.84$, $p < .001$.

One-way random effects ICCs for each subscale mean are also presented in Table 3. Higher values of ICCs would suggest greater interrater reliability with an ICC of 1 indicating perfect agreement and a 0 indicating only random agreement (Hallgren, 2012). We use Cicchetti's (1994) cutoffs for interpretation of ICC ratings which suggest poor reliability with values of less than .40, fair for values of .40 to .59, good for values .60 to .74, and excellent for values from .75 to 1.0. The ICCs among this study's group of parents suggest generally poor interrater reliability with all but one score in the range of .18 to .50.

Results from the HLMs are shown in Table 4. These analyses help answer questions about the factors associated with differences in reports of involvement between mothers and fathers. Examination of the likelihood ratio test statistic to compare the fit of the random intercept models with those of regression models suggests that we can reject the null hypothesis that the intercept is the same across all fathers, as ordinary regression models assume. The full model ICCs are also presented in Table 4 and range from .35 to .71 compared with the unconditional model ICCs (not shown) which ranged from .46 to .78. Thus, after controlling for all variables in the model, the ICCs in all models but one (accessibility) were reduced compared with the ICCs from the unconditional models suggesting a decrease of variance in the outcome due to differences among fathers.

All the models included covariates at the father, as well as mother, and child levels. Father residency and relationship status significantly predicted differences in father and mother reports in accessibility. For romantic pairs not living together, discrepancies in reports about

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

father contact were, on average, .56 points higher than those in the married reference group ($p < .05$) and .85 points higher among nonromantic pairs (divorced, single, friends; $p < .001$). Discrepancies in reports were also, on average, .64 points higher among resident fathers than those who did not reside with their child ($p < .001$).

For the recreation subscale, two predictors were statistically significant: There was a .27 average increase in discrepancies for parents of boys (compared with girls; $p < .05$) and for each additional year in child age, the discrepancy in reports on recreational involvement increased by .05 points ($p < .05$).

Three factors were significantly associated with differences in mother and father reports on father engagement in educational activities. As mother reported relationship quality increased, the discrepancies decreased by .11 points ($p < .05$). Cohabiting pairs had, on average, .77 points greater discrepancy than married pairs had ($p < .05$). The days between interviews was also significant ($p < .01$), indicating that longer periods between interviews were associated with a slight decrease in discrepancies.

Three factors significantly predicted discrepancies in reports on caregiving: African American fathers had .76 points less discrepancy, on average, than fathers who were Hispanic or of another race/ethnicity ($p < .01$). Cohabiting pairs had .66 points average greater discrepancy compared with married pairs ($p < .05$) and fathers who resided with their child compared with those who did not, had on average, .83 less in discrepancy points.

Only one variable was statistically significant in predicting the father's contribution to planning in the responsibility domain, as well as in the financial domain. Specifically, as mother-reported relationship quality improved, the discrepancy in reports of planning decreased by .10 points ($p < .001$). Similarly, as mothers' reports on relationship quality improved, the discrepancy in fathers' financial contributions decreased, on average, by .10 points ($p < .001$). Two variables were statistically significant in predicting a father's influence on important decisions related to the child: (a) The discrepancy in parental reports decreased, on average, by .07 points as mothers' reports on relationship quality improved ($p < .001$) and (b) For each additional year in child age, the discrepancy increased, on average, by .01 points ($p < .05$).

Discussion

This study extends past research on why mothers and fathers differ in their perceptions of a father's involvement in his child's life. It uses a broader range of measures of involvement than has been used before including accessibility to, engagement with, and responsibility for his children (Lamb et al., 1987) among a low-income, inner-city sample of families. It also includes the mothers of all children fathered by the man. Research on differences in reports among multiple informants has been examined in other areas, for example, child behavior reported by parents, teachers, and children; intimate partner violence and psychological aggression reported by romantic partners (e.g., Achenbach, Edelbrock, & Howell, 1987; De Los Reyes & Kazdin, 2005). However, empirical research assessing discrepancies among mothers' and fathers' reports of father involvement with children is limited and to our

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

knowledge has been assessed in only two studies conducted by Coley and Morris (2002) and Mikelson (2008), respectively.

As found in this previous research (Coley & Morris, 2002; Mikelson, 2008), fathers report more involvement with their children than mothers indicate. The discrepancy may be because fathers want to present themselves as more involved than they really are (social desirability), particularly among those who tend to be characterized as uninvolved because of limited employment, financial hardship, or incarceration. On the other hand, mothers may be biased if they perceive the father in a negative light because of conflict between them and, thus, report that fathers are less involved than they actually are. Bias in mothers' reports may also occur in cases where mothers are not physically present to observe father–child interactions calling into question the validity of their reports. For instance, two thirds of children in this study lived with fathers some or most of the time suggesting the possibility of father–child interactions that may have occurred in the absence of mothers in the rest of the sample. It is possible that the discrepancies observed in this study could, in part, be due to subtle bias in some mothers' ability to accurately report on father involvement activities.

Differences in parents' perceptions of direct and indirect interaction with children may account for the results that emerged in our exact agreement analyses. We find, for example, a strong pattern of agreement in measures assessing responsibility and accessibility, both of which are less tangible forms of involvement with the child (e.g., paying bills, having a say in what the child eats for dinner). In contrast, we find less agreement on concrete, direct forms of involvement (i.e., engagement), such as playing, reading stories, or helping the child get dressed. It may be that mothers and fathers have different interpretations of direct involvement or perspectives on what it means to engage with a child in concrete ways. This is congruent with previous research that has found variation in mothers' and fathers' ratings of child behavior problems according to type of behavior with higher correspondence between parent's reports of externalizing (or more observable) behavior and less correspondence of internalizing (or less observable) behavior (Duhig, Renk, Epstein, & Phares, 2000; Kerr, Lunkenheimer, & Olson, 2007).

Similar to previous work, when a mother rates her relationship with the father more highly, we find fewer discrepancies of opinion about his responsibility toward their children, and to a lesser extent his engagement with them. Mothers' reports on relationship quality do not predict differences in ratings of fathers' accessibility. In this case, actual contact measured by the frequency with which the father sees the child may represent a less ambiguous characterization of his involvement and not something influenced by mothers' perceptions of the quality of the relationship. That said, differences in opinion about accessibility are greater when the pair is less stable (noncohabiting romantic or nonromantic vs. married). It is unsurprising that perceptions of access differ more among parents in less stable partnerships, since it is these very relationships that are likely to be more conflictual compared with relationships among stable, married parents. The results reinforce an important consideration when measuring father involvement: A mother's perception of the relationship may matter in her assessment of father involvement. Conversely, it is possible that if mothers perceive that fathers are not doing as much with the children, they may hold more negative views of the relationship. However, it is also possible that the same processes

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

that lead a mother to rate father involvement lower may also lead her to rate the quality of the relationship lower. This is a limitation in our study that warrants further assessment. Previous studies also suggest that fathers may take cues from mothers regarding the type of involvement expected or needed (Lamb, 2000). Therefore, it is important that future research examine the mother's expectations for the father's involvement and whether she perceives low levels of involvement as problematic (Haney & March, 2003). Communicating expectations could affect father involvement and might help researchers understand why the mother's report on relationship quality remains a central predictor of discrepancies in perceptions of father involvement.

Furthermore, because some fathers in this sample were not living with their child, the extent to which mothers and fathers coparent could also affect reports of father involvement. Previous research suggests that coparenting, the extent to which parents share care for the child, is a unique dimension of parenting that has important implications for child development (Waller, 2012). Future research could examine whether cooperative coparenting, regardless of relationship quality, also reduces differences in reports of father involvement.

Unlike findings from previous studies (Coley & Morris, 2002; Mikelson, 2008), we find that child demographic characteristics are associated with differences in reporting on some aspects of father involvement. It could be that the wider age range of children in our study allows us to detect these distinctions. Evidence suggests that fathers become less involved with children over time (Lamb, 2000; Yeung, Sandberg, Davis-Kean, & Hofferth, 2001) and our findings suggest that discrepancies in reports on engagement (recreation and education) and responsibility (influence) increase as children age. It is unclear whether differences emerge because mothers see fathers as doing less as time progresses—whereas fathers believe themselves to be as involved—or whether fathers do different types of activities when children get older that leads to differences in perceptions of involvement. Further investigation of these findings could inform researchers' understanding and the extent to which perceived differences in reports mirror reality. Prior research is inconsistent regarding whether fathers are more involved with their sons than with their daughters (Coley & Hernandez, 2006; Flouri & Buchanan, 2003; Hofferth, 2003). Increased discrepancy on the recreation subscale of involvement may be related to fathers believing they do more recreational activities with their sons than mothers realize. Overall, it is unclear whether child characteristics such as gender or age influence parental reports of involvement because fathers have quantitatively different levels of involvement (i.e., they spend more time playing with boys than girls, or older children than younger children) or are involved in qualitatively different ways with sons than daughters or as children age (e.g., the activities that fathers do with sons differ from what they do with daughters but they take equal amounts of time).

In addition to providing nuances to previous research findings, our study demonstrates that discrepancies vary depending on the dimension of involvement assessed. Therefore, it is likely that a one-dimensional construct would fail to capture the unique types of father involvement that are most likely to be reported differently between mothers and fathers. This echoes the findings of Schoppe-Sullivan, McBride, and Ho (2004), who found that fathering consists of distinct domains of involvement and that the domains do not always correlate

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

with one another. Our use of multiple dimensions of involvement corresponds with their overall conclusion that multidimensional measures of father involvement have greater utility than unidimensional measures.

This being said, it is important to note that our findings of lower levels of agreement (and generally larger discrepancies) on father engagement items compared with father responsibility items may be influenced by the type of ratings used in the assessments (Achenbach, 2011). The scale with the least agreement (engagement) relied on a frequency-based typology (1 = *at least once per day*, 5 = *not at all in the past month*), whereas the scale with the highest agreement (responsibility) used a different typology: Planning and financial assistance were assessed by asking "Who took responsibility for …" and "Who paid for …" (1 = *father or both parents*, 0 = *mother*, else, *no one*). The differential in agreement scores between the scales could be the result of raters more easily identifying *who* performs certain parenting functions than assessing (and agreeing on) how *frequently* these behaviors are exhibited.

Future research may want to test the same typology of measures across father involvement constructs. If this leads to increased and consistent reliability in ratings between mothers and fathers, it might be acceptable to use maternal reports to assess father involvement given mothers are generally easier to recruit into studies. If this is not the case, than when feasible, researchers should include both fathers and mothers. In general, the use of multiple informants may be warranted (if not preferred) because of the different underlying motivations that fathers and mothers may have in reporting father involvement and in their interpretations of the measures. If informant discrepancies exist across populations and contexts (e.g., parents and teachers reporting on child behavior; parents and adolescents reporting on parenting behavior), it may be beneficial to include multiple informants in assessment of behavior to increase validity. An important caveat to advocating for both mothers' and fathers' reports, however, and an area that could benefit from additional research, is when mother–father pairs do not coreside and father–child interactions may occur without mothers' full acknowledgement or understanding. The validity of mothers' reports in such cases might be questionable.

Despite this study's contributions, several limitations should be acknowledged. Although we were able to detect discrepancies using self-report measures of father involvement, reliability of these reports is limited. Additional forms of data (e.g., time diaries, audio and video recorded observations) would increase the rigor of the research and provide data to improve the validity of parent self-reports on father involvement. Studies that have used direct observation through video recordings (Doherty, Erickson, & LaRossa, 2006; Roggman, Boyce, Cook, Christiansen, & Jones, 2004) have used those data to measure the quality of father–child interactions. Innovative methods to measure not only the quality of interactions but the types and absolute levels of involvement are still needed.

Furthermore, because of constraints owing to study design, we were unable to account for child development and changes that may occur in relationships between mothers and fathers. Using a developmental perspective to better understand the role of fathers in families and how their parental interaction influences child development is critical (Parke, 2000). Finally,

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

our sample consists of mostly African American and Hispanic, low-income families from one inner-city urban setting. Generalizability to other groups with a more heterogeneous demographic profile is limited.

In conclusion, our findings suggest that collection of information from both fathers and mothers is important in studies on parenting and child development and, in particular, on the role of fathering in children's lives. A pattern emerged in our study showing a link between relationship quality and discrepancies in reports on involvement. This pattern suggests an important point of intervention for families that focuses on both parental relationships and healthy fathering behavior. Our findings also indicated that agreement between mothers and fathers was highest on dimensions of behavior that were indirect and served a managerial function (Parke, 2000) and lowest on direct day-to-day caregiving tasks. By including multidimensional measures in all domains of involvement, future studies may be able to verify and further ascertain why such distinctions between mothers and fathers exist in their perceptions of father involvement. As interest in fathering continues to build in the practice and policy communities, rigorous research should inform services and policy decisions regarding the most effective ways to support families and bolster the positive role of fathers in children's lives.

Acknowledgments

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development (Grant #R01HD042030).

References

Achenbach TM. Commentary: Definitely more than measurement error: But how should we understand and deal with informant discrepancies? Journal of Clinical Child & Adolescent Psychology. 2011; 40:80–86. [PubMed: 21229445]

Achenbach TM, Edelbrock C, Howell CT. Empirically based assessment of the behavioral/emotional problems of 2- and 3-year-old children. Journal of Abnormal Child Psychology. 1987; 15:629–650. [PubMed: 3437096]

Bentler PM. Comparative fit indices in structural models. Psychological Bulletin. 1990; 107:238–246. [PubMed: 2320703]

Berger LM, Cancian M, Meyer DR. Maternal re-partnering and new-partner fertility: Associations with nonresident father investments in children. Children and Youth Services Review. 2012; 32:426–436.

Bronte-Tinkew, J., Moore, KA., Halle, T. DADS: The Developing a Daddy Survey and the collaborative work of the DADS working group. 2002. Retrieved from http://www.childtrends.org/wp-content/uploads/2001/01/Child_Trends-2004_12_31_ES_NCESDadsReport.pdf

Cabrera, N., Moore, K., Bronte-Tinkew, J., Halle, T., West, J., Brooks-Gunn, J., Boller, K. The DADS initiative: Measuring father involvement in large-scale surveys. In: Day, R., Lamb, M., editors. Conceptualizing and measuring father involvement. Mahwah, NJ: Lawrence Erlbaum; 2004. p. 417-452.

Cabrera NJ, Peters HE. Public policies and father involvement. Marriage & Family Review. 2000; 29:295–314.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Carlson MJ, Magnuson KA. Low-income fathers' influence on children. Annals of the American Academy of Political and Social Science. 2011; 635:95–116. [PubMed: 25520525]

Cicchetti DV. Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. Psychological Assessment. 1994; 6:284–290.

Coley RL, Hernandez DC. Predictors of paternal involvement for resident and nonresident low-income fathers. Developmental Psychology. 2006; 42:1041–1056. [PubMed: 17087540]

Coley RL, Morris JE. Comparing father and mother reports of father involvement among low-income minority families. Journal of Marriage and Family. 2002; 64:982–997.

De Los Reyes A, Kazdin AE. Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. Psychological Bulletin. 2005; 131:483–509. [PubMed: 16060799]

Doherty WJ, Erickson MF, LaRossa R. An intervention to increase father involvement and skills with infants during the transition to parenthood. Journal of Family Psychology. 2006; 20:438–447. [PubMed: 16938002]

Duhig AM, Renk K, Epstein MK, Phares V. Interparental agreement on internalizing, externalizing, and total behavior problems: A meta-analysis. Clinical Psychology: Science and Practice. 2000; 7:435–453.

Flouri E, Buchanan A. The role of father involvement and mother involvement in adolescents' psychological well-being. British Journal of Social Work. 2003; 33:399–406.

Hallgren KA. Computing inter-rater reliability for observational data: An overview and tutorial. Tutorials in Quantitative Methods for Psychology. 2012; 8:23–34. [PubMed: 22833776]

Haney L, March M. Married fathers and caring daddies: Welfare reform and the discursive politics of paternity. Social Problems. 2003; 50:461–481.

Hernandez DC, Coley RL. Measuring father involvement within low-income families: Who is a reliable and valid reporter? Parenting: Science and Practice. 2007; 7:69–97.

Hofferth SL. Race/ethnic differences in father involvement in two-parent families: Culture, context, or economy? Journal of Family Issues. 2003; 24:185–216.

Kerr DC, Lunkenheimer ES, Olson SL. Assessment of child problem behaviors by multiple informants: A longitudinal study from preschool to school entry. Journal of Child Psychology and Psychiatry. 2007; 48:967–975. [PubMed: 17914997]

Lamb ME. The history of research on father involvement. Marriage & Family Review. 2000; 29(2–3): 23–42.

Lamb, ME., Pleck, JH., Charnov, EL., Levine, JA. A biosocial perspective on paternal behavior and involvement. In: Lancaster, JB.Altman, J.Rossi, A., Sherrod, LR., editors. Parenting across the life span: Biosocial dimensions. Hawthorne, NY: Aldine; 1987. p. 111-142.

Mikelson KS. He said, she said: Comparing mother and father reports of father involvement. Journal of Marriage and Family. 2008; 70:613–624.

Parke RD. Father involvement: A developmental psychological perspective. Marriage & Family Review. 2000; 29(2–3):43–58.

Pleck, JH. Paternal involvement: Revised conceptualization and theoretical linkages with child outcomes. In: Lamb, M., editor. The role of the father in child development. 5th. Hoboken, NJ: John Wiley; 2010. p. 58-93.

Roggman LA, Boyce LK, Cook GA, Christiansen K, Jones D. Playing with daddy: Social toy play, early head start, and developmental outcomes. Fathering. 2004; 2:83–108.

Sarkadi A, Kristiansson R, Oberklaid F, Bremberg S. Fathers' involvement and children's developmental outcomes: A systematic review of longitudinal studies. Acta Paediatrica. 2008; 97:153–158. [PubMed: 18052995]

Schoppe-Sullivan S, McBride BA, Ho MR. Unidimensional versus multidimensional perspectives on father involvement. Fathering. 2004; 2:147–163.

Seltzer JA, Brandreth Y. What fathers say about involvement with children after separation. Journal of Family Issues. 1994; 15:49–77.

Shrout PE, Fleiss JL. Intraclass correlations: Uses in assessing rater reliability. Psychological Bulletin. 1979; 86:420–428. [PubMed: 18839484]

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Smock PJ, Manning WD. Nonresident parents' characteristics and child support. Journal of Marriage and the Family. 1997; 59:798–808.

Steigler JH. Structural model evaluation and modification: An interval estimation approach. Multivariate Behavioral Research. 1990; 25:173–180. [PubMed: 26794479]

Tolan P, Gorman-Smith D, Henry DB. The developmental ecology of urban males' youth violence. Developmental Psychology. 2003; 39:274–291. [PubMed: 12661886]

Waller M. Cooperation, conflict, disengagement? Coparenting styles and father involvement in Fragile Families. Family Process. 2012; 51:325–342. [PubMed: 22984972]

Yeung WJ, Sandberg JF, Davis-Kean P, Hofferth SL. Children's time with fathers in intact families. Journal of Marriage and Family. 2001; 63:136–154.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Table 1

Sample Characteristics of Fathers (n = 113), Mothers (n = 126), and Children (n = 221).

Variables	%/*M*	*SD*
Father characteristics		
Education		
High school degree or greater	66.4	
Less than high school degree	33.6	
Race/ethnicity		
Non-Hispanic Black	72.6	
Hispanic or other race	27.4	
Household income[a]	5.8	2.7
Mother characteristics		
Employed	68.3	
Couple characteristics		
Days between interviews	88.1	88.6
Relationship quality		
Father report[b]	4.2	1.0
Mother report[b]	3.7	1.2
Relationship status		
Married	23.9	
Cohabiting	34.5	
Noncohabiting romantic	8.9	
Divorced/single/friend/sister	32.7	
Child characteristics		
Male child	53.9	
Child age	4.6	3.4
Biological child of father	81.9	
Child lives with father	65.6	

[a]Household income scale from 1 to 9, where 1 = *less than $500* and 9 = *$50,000+*.

[b]Relationship quality scale from 1 to 5, where 1 = *poor* and 5 = *excellent*.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Table 2

Exact Agreement Percentages of Fathers (n = 113) and Mothers (n = 126).

Variable	Agreement (%)
Accessibility	
How often father can see child	85.5
How often father does see child	76.0
Engagement	
Recreation[b]	
TV or videos	41.2
Play outside	35.3
Play with ball (<5)[a]	34.7
Take to play with other children	31.7
Play with toys (<5)[a]	27.6
Go for a walk	26.7
Education[b]	
Tell stories	32.6
Read stories	30.8
Caregiving[b]	
Help get dressed	41.6
Help brush his or her teeth (<5)[a]	40.9
Put to bed	40.3
Help use the toilet (<5)[a]	37.8
Give bath (<7)[a]	33.5
Responsibility	
Planning[c]	
Ensure safety	87.8
Presents	82.8
Pay bills	73.8
Clean place to live	71.5
Visit with other children	71.0
Take to school	69.7
Toys to play with	67.0
Books	66.1
Doctor appointments	65.6
Groceries	63.8
Health insurance	63.4
Care items (e.g., diapers)	63.0
Register for activities	61.1
Clothes to wear	58.4
Take off work if needed	57.5
Meet with teachers	55.6

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Variable	Agreement (%)
Attend school event	53.0
Arrange child care	50.7
Financial responsibility[d]	
Clothes	75.1
Toys and/or books	74.2
Activities/social outings	73.8
Child care items	71.7
Groceries	67.9
Health insurance	67.0
Babysitter	66.5
Medical expenses	66.1
Influence[e]	
Safety	91.9
Rules or curfew	85.1
Education	81.9
Bedtime	79.6
Health care	73.3
Day care	70.6
Religion	64.3
Diet	61.5

[a]Only asked of parents with children who were younger than 5 or 7 years (<5 and <7, respectively).

[b]Question asked, “How often does the father do the following items with the child …”

[c]Question asked, “Who took responsibility for the following items …”

[d]Question asked, “Who paid for the following items …”

[e]Question asked, “How much influence does father have on decisions about the following …”

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Table 3

Means, Mean Differences, and One-Way Random Effects Interrater ICC for Mean Scores on Mother and Father Reports of Father Involvement.

	Father		Mother			
Outcome (child level)	***M***	***SD***	***M***	***SD***	**Mean difference**	**ICCs**
Accessibility						
Can see	5.78	0.75	5.82	0.73	−0.04	0.18
Do see	4.61	0.77	4.43	0.99	0.18***	0.72
Engagement						
Recreation	3.50	1.10	3.29	1.10	0.21**	0.50
Education	3.31	1.35	3.14	1.32	0.17†	0.26
Caregiving	3.20	1.20	2.86	1.24	0.34***	0.38
Responsibility						
Planning	0.74	0.23	0.59	0.31	0.15***	0.33
Financial responsibility	0.82	0.25	0.63	0.38	0.19***	0.28
Influence	0.87	0.19	0.77	0.29	0.10***	0.28

Note. ICC = intraclass correlation coefficient (95% confidence interval). One-way random effects absolute individual measures ICC.

† $p < .1$.

** $p < .01$.

*** $p < .001$ (two-tailed test).

J Fam Issues. Author manuscript; available in PMC 2018 March 05.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Table 4

Hierarchical Linear Model Regression Analyses Predicting Discrepancies in Parental Reports of Father Involvement (n = 221, Children).

	Accessibility		Engagement						Responsibility					
	Contact		Recreation		Education		Caregiving		Planning		Financial		Influence	
Predictor	***B***	***SE***	***B***	***SE***	***B***	***SE***	***B***	***SE***	***B***	***SE***	***B***	***SE***	***B***	***SE***
Father														
Education	−0.08	0.05†	0.05	0.07	−0.07	0.11	0.08	0.08	−0.02	0.02	−0.01	0.02	0.004	0.02
Non-Hispanic Black (ref: Hispanic or other)	0.01	0.14	−0.32	0.22	−0.49	0.33	−0.76	0.25**	0.02	0.05	0.09	0.07	−0.04	0.05
Income	0.01	0.02	−0.04	0.03	−0.05	0.05	−0.07	0.04†	−0.01	0.01	0.003	0.01	0.002	0.01
Mother														
Employment	0.001	0.10	0.20	0.17	−0.05	0.25	0.04	0.20	0.03	0.04	0.04	0.05	−0.01	0.04
Couple														
Days between interviews	0.001	0.00	0.00	0.00	−0.004	0.00**	−0.001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Relationship quality	−0.02	0.05	0.12	0.09	0.15	0.13	0.005	0.10	0.03	0.02	0.03	0.02	0.03	0.02
difference (father-mother reported)														
Relationship quality (mother reported)	−0.09	0.06	−0.08	0.10	−0.11	0.15*	−0.10	0.12	−0.10	0.02***	−0.10	0.03***	−0.07	0.02**
Relationship status (ref: married)														
Cohabiting	−0.05	0.14	0.29	0.22	0.77	0.34*	0.66	0.26*	0.06	0.06	0.10	0.07	−0.03	0.06
Noncohabiting romantic	0.56	0.28*	−0.33	0.47	−0.89	0.68	−0.25	0.55	−0.03	0.11	−0.06	0.13	−0.09	0.12
Nonromantic	0.85	0.19***	−0.44	0.33	−0.36	0.48	−0.47	0.39	0.03	0.08	0.08	0.09	0.01	0.08
Child														
Male child	0.03	0.07	0.27	0.13*	0.16	0.17	0.15	0.15	0.001	0.03	−0.01	0.03	−0.06	0.03†
Child age	−0.003	0.01	0.05	0.02*	0.06	0.03†	0.02	0.03	0.01	0.00	0.002	0.01	0.01	0.01*
Biological child	0.04	0.11	0.36	0.20†	0.53	0.27†	0.04	0.24	0.05	0.04	0.001	0.05	0.09	0.05†
Father lives with child	0.64	0.18***	−0.46	0.32	−0.68	0.45	−0.83	0.39*	0.06	0.07	−0.09	0.08	−0.10	0.08
Constant	−0.03	0.39	0.27	0.65	1.41	0.95	1.77	0.77*	0.47	0.15**	0.49	0.18**	0.31	0.16†
Random effect intercept	0.25***		0.42***		1.25***		0.49***		0.04***		0.06***		0.03***	

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

	Accessibility		Engagement						Responsibility					
	Contact		Recreation		Education		Caregiving		Planning		Financial		Influence	
Predictor	***B***	***SE***	***B***	***SE***	***B***	***SE***	***B***	***SE***	***B***	***SE***	***B***	***SE***	***B***	***SE***
Log likelihood	−174.38		−302.38		−378.47		−342.26		27.48		−0.79		8.91	
ICC of full model	0.64		0.41		0.56		0.35		0.61		0.71		0.46	
Number of observations	221		221		221		221		221		221		221	

Note. ICC = intraclass correlation. The reference group for the categorical variables is shown in parenthesis.

$^{\dagger}p < .1$.

$^{*}p < .05$.

$^{**}p < .01$.

$^{***}p < .001$.

J Fam Issues. Author manuscript; available in PMC 2018 March 05.

Psychology in the Schools, Vol. 52(2), 2015
View this article online at wileyonlinelibrary.com/journal/pits
© 2014 Wiley Periodicals, Inc.
DOI: 10.1002/pits.21813

A STRUCTURAL MODEL OF PARENT INVOLVEMENT WITH DEMOGRAPHIC AND ACADEMIC VARIABLES

NAMOK CHOI

University of Louisville

MIDO CHANG

Florida International University

SUNHA KIM

Virginia Tech

THOMAS G. REIO JR.

Florida International University

Parental involvement is well documented as a significant contributor to the self-efficacy and academic achievement of students. A structural equation model of parent involvement with family socioeconomic status, student gender, parents' aspirations for their children, mathematics efficacy, and mathematics achievement was tested to examine whether parent involvement in the 10th grade remains relevant to achievement. A sample of data pertaining to 8,673 10th graders from the Educational Longitudinal Study was analyzed. The results indicated that the fit of the measurement model to the data was good ($\chi^2 = 3081.62$, $df = 87$, $p = .0$, normed fit index [NFI] = .96, comparative fit index [CFI] = .96, root mean square error of approximation [RMSEA] = .064), as was the structural model ($\chi^2 = 3470.69$, $df = 94$, $p = .00$, NFI = .96, CFI = .96, RMSEA = .065). Although the effect was small in magnitude, parent involvement in advising had a significant indirect relationship with mathematics achievement via mathematics efficacy of 10th graders.
© 2014 Wiley Periodicals, Inc.

Following the enactment of the No Child Left Behind Act in 2001, the U.S. Department of Education reported higher involvement in children's education among parents with children enrolled in kindergarten through 12th grade. The department's subgroup analysis of rates of parent participation also showed that more parents of kindergarten through 12th-grade girls (90%) attended general school meetings in 2007 than did parents of boys (89%), more parents with graduate levels of education (96%) attended than did parents with less than a high school education (70%), more parents with more than $75,000 in family income (95%) attended than did parents with $5,000 or less in income (76%), and more Caucasian parents (91%) attended than did Hispanic parents (87%; U.S. Department of Education, 2007). The statistics derived from research findings on parents' school involvement indicate an encouraging trend and suggest that great benefits could be reaped from parents' involvement in their children's learning progress and academic achievement.

Most parents are involved when their children are in preschool or elementary school; then, parent involvement tends to wane as children move up through the grade levels (Crosnoe, 2001; Downs, 2001; Drummond & Stipek, 2004). Davis and Lambie (2005) explained this waning pattern of parent involvement in their older offspring's education from a developmental perspective. As children move from elementary to secondary school, they shift their interests outward to peer groups and outside-family groups, leaving parents to take a more covert form of school-related involvement, such as advising at home (Crosnoe, 2001; Downs, 2001; Drummond & Stipek, 2004). Parent involvement may become more subtle, and the effects of parental involvement are revealed slowly, as parent involvement takes a long time to come to fruition (Keith et al., 1998). In particular, parental involvement on children's academic performance comes in an indirect form rather than

Correspondence to: Namok Choi, College of Education and Human Development, University of Louisville, Louisville, KY 40292. E-mail: namok@louisville.edu

having a direct influence (Hoover-Dempsey et al., 2001). Hoover-Dempsey et al.'s (2001) literature review described how parent involvement in children's homework can have an indirect effect on children's academic achievement: Parental involvement fosters personal attributes in children, such as positive attitudes toward learning, a sense of responsibility, persistence through modeling, and reinforcement, and these attributes are directly linked to students' academic achievement.

Overall, prior research on parental involvement has highlighted the importance of more covert and indirect forms of parent involvement. Even for young children, parent involvement can connect the two primary settings of home and school (El Nokali, Bachman, & Votruba-Drzal, 2010). Parent involvement as a connector between home and school can be extended to adolescents as a group where there is little empirical research with regard to it serving as a "protective factor, facilitating academic success" (Jimerson, Egeland, & Teo, 1999, p. 124). This study shares the objective of the prior studies, placing emphasis on the effects of the covert form of parent involvement that are closely related to individual and home contextual factors (such as socioeconomic status [SES], student gender, and parental aspiration) and then making influential paths toward students' academic identity and performance (mathematics self-efficacy and mathematics achievement).

Type of Parent Involvement

Types of parent involvement are fundamentally dependent on how parent involvement is defined. As Fan and Chen (2001) pointed out, various definitions abound in relevant literature, including parental behaviors and parenting practices. Involvement in providing school services and participating in meetings takes an array of formats, from unidimensional (Turney & Kao, 2009) to multidimensional (Wong & Hughes, 2006). Of the diverse definitions of parent involvement in the literature, Pomerantz, Moorman, and Litwack's (2007) definition is considered, by far, the most clear and inclusive, as it posits two distinct categories of parental involvement: 1) school-based parent involvement and 2) home-based parent involvement. This classification has been supported by Ice and Hoover-Dempsey (2011), who viewed these as two "common but distinct activities in both public and home-school systems" (p. 346). According to Pomerantz et al., school-based parent involvement "represents practices on the part of parents that require their making actual contact with schools," some of which include participating in school meetings and school events, volunteering in school, and communicating with teachers. Home-based parent involvement "represents parents' practices related to school that often take place outside of school" (p. 374), some of which include helping children with school-related work (e.g., homework, course selection), communicating about school or academic matters with their children, and involving children in cognitive/intellectual activities (e.g., reading books, touring a library or museum).

As noted previously, parent involvement tends to decrease as children move from elementary to secondary grades (Crosnoe, 2001; Downs, 2001; Drummond & Stipek, 2004), indicating that the effectiveness of parent involvement, as students get older, may not be as overt as it was when students were younger. DePlanty, Coulter-Kern, and Duchane (2007) found, for example, that junior high students reported school-based parent involvement was not as important to their learning as home-based involvement. Their teachers also believed that parent involvement at home, such as emphasizing the importance of education, was more important than parent involvement in school (DePlanty et al., 2007). Responses from both the students and the teachers in the study demonstrate that school-based parent involvement fades in effect as students move up through the grades and gives more room for parents to get involved at home in various ways.

Parents may increase their involvement in their adolescent children's learning by giving advice to their children on pertinent academic issues, such as what courses to take and how to prepare for college. Parents are more likely to take this form of involvement when their adolescent children ask for their opinions on various issues, including academic matters (Deslandes & Bertrand, 2005).

Although some leading researchers in this field (e.g., Epstein & Sanders, 2002) argue that this more covert form of parent involvement (e.g., conversation between parents and an adolescent child discussing academic plans and the future of the child) is a strong correlate of academic achievement, few studies have been forthcoming on this topic. In this study, some demographic variables that may have indirect relationships with academic variables through parent involvement (Hill et al., 2004) are examined, with more emphasis on parent involvement at home.

Demographic Variables and Parent Involvement

Family SES, student gender, and parents' aspirations for their child are the three demographic variables included as exogenous variables in this study. SES has been shown to be a strong predictor of mothers' involvement, not only in school activities, but also in cognitive–intellectual types of activities outside school in the lower grades (Grolnick & Slowiaczek, 1994), as well as in the adolescent period (Hill et al., 2004). Hill et al.'s (2004) results demonstrated a significant direct effect of SES on parent involvement for ninth graders ($\beta = .19$), which was not directly related to academic achievement. The authors reported a significant direct effect of school behavior problems on academic achievement of ninth graders. They also found that school behavior problems mediated the association between parent involvement and academic achievement. Their findings lend support to the indirect and more covert effect of parent involvement on academic achievement via other intervening variables.

Although few studies have reported a bivariate relationship between parent aspiration and parent involvement, Overstreet, Devine, Bevans, and Efreom's (2005) prediction study indicated that parental aspiration was a significant predictor of parent involvement for adolescent children who were residents in an urban public-housing development. The authors reported a standardized regression coefficient of .27 for parental aspiration in predicting parental involvement in school (e.g., visiting a child's school or classroom, attending school events) and showed that parents with high aspirations for their child tended to be more involved in their child's schooling. In this study, the average parents' aspired years for their children's education was equivalent to their children's years of attending college.

The relationship of student gender to parent involvement has not been well established. Although a few studies indicated that parents are more likely to be involved in their daughters' school activities than in their sons' (Carter & Wojkiewicz, 2000; Crosnoe, 2001), the majority of findings were based on the lower grade levels. Studies reporting on this topic for adolescents are scarce. In the current study, gender was included to examine the hypothesized relationship with mathematics performance and mathematics self-efficacy and explore the differential association with parent involvement.

Demographic Variables and Academic Variables

Family SES, parents' aspirations for their children, and student gender were chosen to be examined in association with academic performance of students. Lower family SES is reported to be related to lower academic achievement (Tucker-Drob & Harden, 2012), especially with ethnic minority students (Albert & Luzzo, 1999). Tucker-Drob and Harden (2012) reported a correlation coefficient of .23 ($p < .01$) between family pretax income and the academic achievement of high school students. They postulated that adolescents from higher SES families have better opportunities for stimulating academic experiences and peer and other personal interactions that match their intellectual interests, and thus they reap more benefits from their academic pursuits and efforts.

The relationship between gender and achievement appears to be dependent on the subject matter, and mixed results have been reported regarding gender difference in mathematics; some reported no significant difference in the early grades (Tsui, 2007), whereas others reported minor differences (Halpern et al., 2007). There seems to be a greater gender difference in more advanced

mathematics courses in high school (Meelissen & Luyten, 2008; Tate, 1997), and fewer female students are in the right-side tail of the distribution (Wai, Cacchio, Putallaz, & Makel, 2010). Some researchers reported that female students do perform better than do male students when measured by locally developed tests (Liu, 2009), whereas males perform better than females when measured by standardized tests (Ewert, 2010; Liu, 2009). In another recent study, ninth-grade girls scored significantly lower than did boys on a standardized mathematics test, and ninth graders who had more positive attitudes toward mathematics, regardless of gender, had significantly higher levels of mathematics achievement (Choi & Chang, 2011). This finding suggests that academic motivation variables, such as mathematics efficacy and attitude toward mathematics, may play a mediating role in the relationship between student gender and mathematics achievement.

Parental aspiration for children's academic pathways seems to be an important background variable that is significantly related to adolescents' academic performance, especially in mathematics (Williams & Wolters, 2012). Fan and Chen (2001) reported that parents' aspirations for their children's education were one of the strongest predictors of children's academic achievement. Parental aspiration is associated not only with academic achievement, but also with academic performance-relevant variables as well. For example, parental aspiration was significantly and positively associated with mathematics self-efficacy of adolescents (Fan, Williams, & Wolters, 2012) and with adolescent children's valuing of school, academic self-concept, and academic self-efficacy (Jodl, Michael, Malanchuk, Eccles, & Sameroff, 2001). Jodl et al. (2001) further reported that parents who had high educational aspirations for their children had adolescent children who valued school as an important factor for their future.

Parent Involvement and Academic Variables

Despite some studies reporting a negative association (e.g., Domina, 2005; Sui-Chu & Willms, 1996) and some others reporting no significant relationship (El Nokali et al., 2010; Okpala, Okpala, & Smith, 2001; Reynolds, 1992), there is a general consensus in empirical evidence that has shown the benefits of parent involvement in the educational trajectories of students from various academic backgrounds. The bulk of the empirical studies reported in this arena have centered on the preschool and elementary levels and the relationship of parent involvement with academic achievement (El Nokali et al., 2010). This positive relationship between parent involvement and academic achievement is also reported in adolescent groups, albeit less frequently. In one study, Hill et al. (2004) reported a significant direct effect of parent involvement of African American adolescent students on academic achievement over time, which was measured by school grades and scores of standardized tests on mathematics and language skills. Overall, parent involvement tended to have a stronger effect on global indicators of achievement (such as grade point average [GPA]) than on achievement indicators in specific subject areas. According to Fan and Chen (2001), the mean correlation of parent involvement with a global indicator was .33, whereas the correlation with mathematics and reading achievement scores was .18.

The effect of parent involvement on students' academic performance may also take more indirect forms by influencing some intervening variables (Hoover-Dempsey et al., 2001), such as self-efficacy or motivation. Efficacy is defined as an individual's perceived belief in performing necessary tasks to achieve goals (Bandura, 1997), and there is well-documented evidence supporting its positive relationship with academic achievement, which typically explains about 25% of the variance in achievement performance (Pajares, 2006). Ice and Hoover-Dempsey (2011) further found that student-reported parent involvement was a significant predictor of academic achievement-relevant variables. Called *proximal student achievement outcome* in their study, it was measured by a combination of academic self-efficacy, intrinsic motivation to learn, and self-regulatory strategy, and parent involvement accounted for 36% of the variance of proximal student achievement outcome.

Much of the research on parent involvement has focused on elementary students; thus, relatively few adolescent samples have been studied. Drawing on past research on parent involvement and academic variables, the overarching objective of this study was to examine the relationships between two types of parent involvement (parent involvement in school and parent involvement in advising), mathematics performance, and mathematics efficacy of 10th graders. Family SES, student gender, and parent aspiration were included as exogenous variables. Of particular interest was to examine the direct and indirect effects of school-based parent involvement (PI in school) and home-based parent involvement (PI in advising) on academic variables.

Methods

Data and Sample

This study used data from the Educational Longitudinal Study (ELS: 2002), one of the major longitudinal studies sponsored by the National Center for Education Statistics. The ELS was designed to collect data on high school students' transitional experiences from their high school years to entering college or the workforce. The data collection began in 2002, when most of students were in 10th grade; the first follow-up data were collected in 2004 and the second follow-up data in 2006. This study used the first wave of data, exploring the relationship of parent involvement with 10th graders' school performance. In the spring term of 2002, mathematics and reading tests were directly administered to high school students, and responses using questionnaires were collected from students, parents, teachers, school librarians, and school administrators. The total sample consisted of more than 15,000 students and their parents from 750 randomly sampled schools in the United States. Parents in the base-year data were defined as biological parents, adoptive parents, or guardians who lived in the same household as the 10th grader.

The sampling design of the ELS: 2002 was a two-stage sample selection method in which schools were selected first, following proportional probability, and then students were selected randomly within each school. To ensure enough samples from non-public schools and Asian and Hispanic student populations, those groups were selected more than their proportions, and their sample sizes were adjusted using weights. After selecting variables for the study and deleting cases with incomplete information, the total cases in the study resulted in 8,673 (3,776 boys and 4,253 girls).

Variables

As the main objective of the study specified, the study explored the interrelationships between parental involvement and SES, student gender, parental aspiration, mathematics self-efficacy, and mathematics performance of high school students. In particular, the study focused on two types of parental involvement, which were closely associated with their children's mathematics self-efficacy and mathematics performance in school.

PI in school was defined in this study as direct parent participation in school events and activities and measured by one parent's self-report on four indicator items: 1) attending parent–teacher organization meetings, 2) belonging to a parent–teacher organization, 3) taking part in parent–teacher organization activities, and 4) acting as a volunteer at school. The four indicator items were dichotomously measured (0 = *no*, 1 = *yes*) and indicated an acceptable reliability statistic (Cronbach's alpha = .70) among themselves. All four were analyzed in the structural equation model (SEM) as direct parents' participation in school events.

PI in advising, also based on one parent's self-report, was defined as parent involvement behaviors to guide their children's academic performance and future academic plans. As indicators of parent advisement for academics, the study used three 3-point scale items (1 = *never*, 2 = *sometimes*, 3 = *often*). The three indicators were 1) providing advice about selecting courses or programs, 2) providing advice about plans for college entrance exams, and 3) providing advice about

applying to college/school after high school. The three items also revealed an acceptable reliability statistic (Cronbach's alpha = .72) and were used for the SEM.

Students' mathematics self-efficacy (mathematics efficacy) was one of the endogenous (outcome) variables of the study. As included in the literature review, the study defined students' mathematics self-efficacy as an individual's perceived belief in performing necessary tasks to achieve goals and was measured by five indicator items: 1) can do an excellent job on mathematics tests, 2) can understand difficult mathematics texts, 3) can understand a difficult mathematics class, 4) can do an excellent job on mathematics assignments, and 5) can master mathematics class skills. The five indicator items demonstrated a high reliability statistic (Cronbach's alpha = .93).

Students' mathematics performance (mathematics performance) was another main endogenous variable in the study that was measured by the item response theory (IRT) number-right score. An IRT scale score estimates a student's ability and test characteristics separately; therefore, an estimate can be obtained for each student's proficiency rather than the student's observed test score.

In addition to the main variables previously described, the study included students' SES, student gender, and parental aspirations for their children as important exogenous variables in the SEM model because those variables have been identified as factors significantly associated with students' self-efficacy and academic performance.

Family SES is known to be significantly associated with students' academic efficacy and achievement (Tucker-Drob & Harden, 2012). The two available SES-scale variables in the ELS: 2002 database are composite variables of father's education, mother's education, family income, father's occupation, and mother's occupation. Among two SES variables, the study used the SES measure (BYSES2) that applied 1989 General Social Survey occupational prestige scores.

Students' gender (gender) was used as an important exogenous variable that is closely related to student's mathematics efficacy and mathematics achievement (Choi & Chang, 2011). The original values of male (= 1) and female (= 2) were converted to 0 for male and 1 for female for the analysis to reach simple interpretations of the results by utilizing the intercept of the model.

Parents' aspirations for their children (aspiration) in terms of postsecondary achievement was included in the model as a critical factor that is related to parental involvement in their children's education and students' academic efficacy and achievement (Jodl et al., 2001; Williams & Wolters, 2012). The numeric values indicate parents' aspirations for their children to 1) have less than a high school diploma, 2) have a high school diploma or GED only, 3) attend or complete a 2-year school course in a community or vocational school, 4) attend college, but not complete a 4-year degree, 5) graduate from college, 6) obtain a master's degree or equivalent, or 7) obtain a PhD, MD, or other advanced degree. This variable was also measured by one parent's self-report.

Analytical Methods

The study used a full SEM, which contains both measurement and structural models (see Figure 1). LISREL software was used to conduct SEM analysis for this study due to the capacity of analyzing models with observed and latent variables by decomposing effects through several iterations (Jöreskog & Sörbom, 2006). LISREL is well known for its multiple strengths, such as dealing with non-recursive models, multigroup comparisons with group mean centering, and tests of constraints.

RESULTS

Descriptive Statistics and Correlations

Table 1 shows the unweighted means, standard deviations, and *t* statistics for gender differences for the six major variables in this study. The observed correlations showed that all six variables had low to moderate intercorrelations (see Table 2). Although small, both types of parent involvement

Table 1
Means and Standard Deviations for the Major Variables

Variables	Item Content	Boys ($N = 3{,}776$) Mean (*SD*)	Girls ($N = 4{,}253$) Mean (*SD*)	*t*
SES		0.178 (.727)	0 .126 (.750)	3.472*
Aspiration		5.370 (1.231)	5.540 (1.177)	−7.618*
Mathematics Performance		41.245 (11.993)	39.189 (11.419)	8.170*
PI in School ($\alpha = .72$)		1.258 (1.366)	1.258 (1.359)	–.1706
	Attend parent–teacher organization meetings (Y_1)			
	Belong to parent–teacher organization (Y_2)			
	Take part in parent–teacher organization activities (Y_3)			
	Act as a volunteer at the school (Y_4)			
PI in Advising ($\alpha = .72$)		6.621 (1.748)	6.709 (1.769)	–.3.032*
	Provide advice about selecting courses or programs (Y_5)			
	Provide advice about plans for college entrance exams (Y_6)			
	Provide advice about applying to college/school (Y_7)			
Mathematics Efficacy ($\alpha = .93$)		13.567 (4.110)	12.214 (4.164)	14.970*
	Can do excellent job on mathematics tests (Y_8)			
	Can understand difficult mathematics texts (Y_9)			
	Can understand difficult mathematics class (Y_{10})			
	Can do excellent job on mathematics assignments (Y_{11})			
	Can master mathematics class skills (Y_{12})			

*$p < .01$.

Table 2
Correlations of Major Variables

Variables	1	2	3	4	5	6
1. SES	—					
2. Aspiration	.232*	—				
3. PI School	.250*	.141*	—			
4. PI Home	.172*	.245*	.228*	—		
5. Math SE	.156*	.188*	.065*	.090*	—	
6. Math Perf	.430*	.280*	.116*	.105*	.378*	—

Note. Math SE = mathematics self-efficacy, Math Perf = mathematics performance.
*$p < .01$.

(PI in school and PI in advising) were significantly and positively correlated with parental aspiration, students' mathematics self-efficacy, and mathematics performance. Interestingly, the size of the correlation coefficient ($r = .228$, $p < .01$) between PI in school and PI in advising was not as high as expected. One would expect a higher correlation between the two types of parent involvement. Also noticeable is the expected significant correlation between mathematics self-efficacy and mathematics performance score, indicating that the two variables share a little more than 14% ($r^2 = .142$) of the common variance.

Measurement Model

The measurement model (see Figure 1) was first estimated with all factors correlated. All of the factor loadings (lambda y) were significant ($p < .01$), ranging from 0.53 to 0.87 (see Figure 1). The

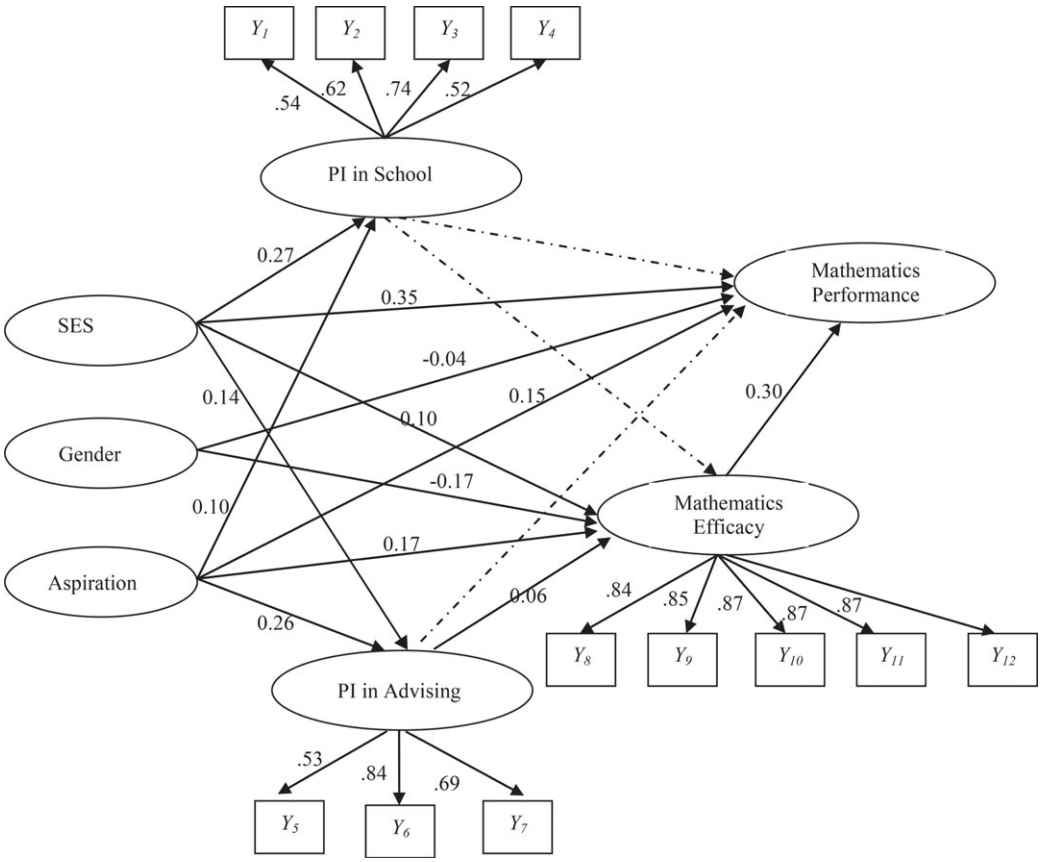


FIGURE 1. The final model and standardized parameter estimates. The solid lines show significant paths ($p < .01$), and the dotted lines show nonsignificant paths.

observed fit statistics showed that the measurement model was a good fit to the data ($\chi^2 = 3081.62$, $df = 87$, $p < 0.01$, normed fit index (NFI) = .96, comparative fit index [CFI] = .96, root mean square error of approximation [RMSEA] = .064), suggesting that the measurement of the latent constructs was adequate.

Structural Model

The hypothesized structural model was tested next, and the results indicated a good fit of the model to the data, $\chi^2 = 3372.95$, $df = 90$, $p < .01$, NFI = .96, CFI = .96, RMSEA = .066. The incremental fit indices of .90 or above (Kline, 1998) and a RMSEA value of .07 or less (Browne & Cudeck, 1993) are considered adequate, collectively suggesting that the fit of the structural model to the data was acceptable (Browne & Cudeck, 1993). Figure 1 lists the significant path coefficients. As shown in Figure 1, all the standardized path coefficients were significant, with exceptions of three paths: PI in school to mathematics efficacy, PI in school to mathematics performance, and PI in advising to mathematics performance. The three largest values of relationships were observed between SES and mathematics performance ($\beta = .35$), aspiration and PI in advising ($\beta = .26$), and mathematics efficacy and mathematics performance ($\beta = .30$).

Table 3
Parameter Estimates and t Values

Hypothesized	Path	Direct Effect	*t* Value	Indirect Effect	*t* Value	Total Effect
SES	→ PI in School	0.27	19.88*	—	—	0.27
SES	→ PI in Advising	0.14	11.07*	—	—	0.14
SES	→ Math Efficacy	0.10	8.84*	0.01	1.99	0.11
SES	→ Math Performance	0.35	35.46*	0.03*	6.34*	0.38
Gender	→ Math Efficacy	−0.17	−16.15*	—	—	−0.17
Gender	→ Math Performance	−0.04	−4.16*	−0.05*	−14.35*	−0.09
Aspiration	→ PI in School	0.10	7.87*	—	—	0.10
Aspiration	→ PI in Advising	0.26	19.78*	—	—	0.26
Aspiration	→ Math Efficacy	0.17	14.48*	0.01*	4.05*	0.18
Aspiration	→ Math Performance	0.15	14.92*	0.05*	10.91*	0.20
PI in School	→ Math Efficacy	0.00	0.12	—	—	0.00
PI in School	→ Math Performance	−0.01	−0.50	0.00	0.12	−0.01
PI in Advising	→ Math Efficacy	0.06	4.38*	—	—	0.06
PI in Advising	→ Math Performance	−0.01	−0.89	0.02	4.34*	0.01
Math Efficacy	→ Math Performance	0.30	30.07*	—	—	0.30

Note. The dashed lines reflect unspecified paths in the model.
*$p < .01$.

Table 3 shows the breakdown of direct and indirect effects. SES had a significant direct effect on PI in school ($\beta = .27$), PI in advising ($\beta = .14$), mathematics efficacy ($\beta = .10$), and mathematics performance ($\beta = .35$). These coefficients indicated that students from higher-SES families had parents who participated more in school activities and provided academic advising more frequently to their children, and these students showed higher levels of mathematics self-efficacy and mathematics performance in school.

As anticipated, gender had a significant and negative direct effect on both mathematics efficacy ($\beta = –.17$) and mathematics achievement ($\beta = –.04$). Gender also had a significant and negative indirect effect on mathematics performance through mathematics efficacy. These paths indicated that 10th-grade girls had lower levels of mathematics self-efficacy than did 10th-grade boys, and the low self-efficacy of girls paved the way to lower mathematics performance among girls.

As we anticipated, aspiration had a significant and positive direct effect on all endogenous variables: PI in school ($\beta = .10$), PI in advising ($\beta = .26$), mathematics efficacy ($\beta = .17$), and mathematics performance ($\beta = .15$). Aspiration also had a significant indirect effect on mathematics performance mediated by mathematics efficacy. Parents who had higher educational aspirations for their children showed more active involvement in their children's education and school. Notice that the coefficient from aspiration to PI in advising was greater ($\beta = .26$) than that from aspiration to PI in school ($\beta = .10$).

Contrary to our expectation, PI in school had no significant effect on mathematics efficacy or on mathematics performance, either directly or indirectly. PI in advising had no direct effect on mathematics performance, but it had a significant direct effect on mathematics efficacy. Importantly, PI in advising had a significant, although small, indirect effect on mathematics performance mediated by mathematics efficacy.

As expected, mathematics efficacy had a significant direct effect on mathematics performance ($\beta = .30$), indicating that students who were highly efficacious in mathematics performed at higher levels than did those who had lower levels of mathematics self-efficacy.

Discussion

Past research has demonstrated that parental involvement is a critical factor in children's academic achievement in school. Research has also shown that parental involvement and students' academic achievement are closely related to preadolescent students, student SES, and parent aspiration. What is not well known is the extent to which each of the variables plays a role in the model and interrelates as a whole for the adolescent population.

We were motivated to provide a large picture of the structural relationships among individual and family contextual variables (SES, student gender, and parental aspiration), parental involvement categorized into two domains (school-based and home-based parent involvement), and adolescents' mathematics performance variables (mathematics self-efficacy and mathematics performance). Taking advantage of an available national database, the ELS: 2002, the study was able to examine the structural relationships among the variables for U.S. 10th-grade students and parents. In the measurement model, the study was able to validate the two subcomponents of parental involvement following the categorization done by Pomerantz et al. (2007). This finding contributes to the research field because research has not yet reached a consensus on the types of parental involvement. Using the constructs of parental involvement, the study was able to delineate the structural relationships among all the variables. We designed an analytical model, building the direct and indirect paths of parent involvement to mathematics efficacy and mathematics performance of adolescents. The analysis results indicated that the hypothesized SEM showed adequate fit to the data.

The main finding from the structural model was that PI in advising showed a significant direct effect on mathematics efficacy and a significant indirect effect on mathematics performance mediated by students' mathematics efficacy, whereas PI in school had no significant effect on mathematics efficacy or on mathematics achievement. This finding is consistent with previous research conducted by Hill et al. (2004), in which parent involvement was not significantly related to ninth graders' achievement, and it was speculated that the effect of parent involvement may be mediated through intervening variables. Although small, the significant indirect effect of parent involvement on mathematics performance through mathematics efficacy in this study suggests that this more covert form of parental involvement does not appear as a direct correlate of performance, but fosters other positive psychological and academic attributes and extends its effect in multiple ways, including high academic performance. A heightened level of parent involvement has been found to help children to become motivated and engaged in school (Pomerantz et al., 2007; Yun & Kusum, 2008), improve social competence (Hill & Craft, 2003), and encourage high academic self-efficacy (Marchant, Paulson, & Rothlisberg, 2001), resulting in improved academic performance from early childhood through adolescence. This finding also supports previous reports that home-based parent involvement is more important than school-based parent involvement (DePlanty et al., 2007) and also obliquely supports the theory that student age could have a moderating effect on the relationship between parent involvement and achievement (Hill et al., 2004). Considering that students in junior and senior high schools try to assert their independence and are not enthusiastic about their parents' overt school involvement, this result is not surprising. Instead, adolescents seem to prefer more covert forms of parent involvement (DePlanty et al., 2007), such as getting advice from parents on various school-related activities.

All four paths leading from SES to PI in school, PI in advising, mathematics efficacy, and mathematics performance were significant ($p < .01$), indicating that parents with a higher income tend to be more involved in school activities and advising at home and that their children tend to display a higher level of mathematics efficacy and reach a higher level of performance in mathematics. Hill et al. (2004) argue that parents with low SES tend to have lower educational and occupational success and may lack the skills necessary to get involved in their children's schooling in a constructive

way, whereas parents with high SES tend to have a higher level of educational attainment and occupational success and may have various means of getting more involved in their children's education. Parents with a higher SES can be better role models due to their better educational attainment and occupational success.

A repeated, yet always interesting, finding was that mathematics self-efficacy was a significant mediator of gender and mathematics performance. Girls' mean mathematics IRT score was significantly lower than that of boys, and the tendency widens for those who have lower mathematics self-efficacy. This was an anticipated finding among the girls in secondary school, who tend not to perform as well on standardized tests as on non-standardized tests (Ewert, 2010; Liu, 2009; Wai et al., 2010). The gap is wider among higher performers (Wai et al., 2010). This finding is also consistent with a previous report on gender difference in standardized tests, in which girls performed more poorly than did boys (Ewert, 2010; Liu, 2009). This small but consistent gender difference in mathematics can be explained partly by the gender role socialization perspective, which describes the process of boys and girls adopting and internalizing socially scripted gender norms that are deemed sex appropriate (Bem, 1993). Skaalvik and Skaalvik (2004) argue that gender role socialization is responsible for the commonly held belief that mathematics is a masculine domain, whereas language is a feminine one. When girls are taught persistently by people around them to adopt feminine gender roles, it is not surprising that they would learn to dislike masculine subjects, such as mathematics, and develop less favorable attitudes toward the subject matter. Boys, on the other hand, are encouraged to adopt masculine norms, and they as a group tend to have more favorable attitudes toward mathematics (McGraw, Lubienski, & Strutchens, 2006). One practical concern is that this consistent gender difference in mathematics performance can lead to a gender gap in advanced mathematics courses and future mathematics-related occupations.

Parent aspiration had a significant effect on both types of parent involvement, having a higher coefficient for parent involvement in advising than for parent involvement in school. Making significant paths from parent aspiration to parent involvement in school and at home corresponds to prior research results showing that parents who had high aspirations for their adolescent children were more involved in their children's education both in school (Overstreet et al., 2005) and at home. The current study's finding that showed a stronger path from parent aspiration to parent involvement in advising than to parent involvement in school can be viewed as a new addition to the research field.

In addition, parent aspiration was significantly and indirectly linked to mathematics efficacy and mathematics performance. These findings support previous study results showing that parents who had high aspirations for their adolescent children had children with higher levels of mathematics efficacy (Jodl et al., 2001; Williams & Wolters, 2012) and higher achievement levels in mathematics (Williams & Wolters, 2012). Another important finding of the study was that parental aspiration was revealed to be the largest path coefficient leading to mathematics performance in the analytical model, which is consistent with the findings of Fan and Chen (2001) that parental education was one of the strongest predictors of children's academic achievement. Clearly, parents' aspirations for their adolescent children's educational attainment is a critical factor that is related to adolescents' academic achievement and deserves more attention from educational researchers to understand the nature and the correlates of the construct. According to Cerpa, Wentzel, and Matto (2009), parental aspiration varies across individual and familial backgrounds. Particularly, parental aspirations for their children aligns with their own educational attainment. Parents who have higher levels of educational attainment tend to have high aspirations for their children's academic pathways. The authors also reported that Asian American and Caucasian parents had significantly higher aspirations than did Hispanic or African American parents.

To summarize, the study found that students' gender and SES and parents' aspirations were significant variables in students' mathematics self-efficacy and mathematics performance. They

were also significant factors in parent involvement in school and in advising, drawing significant indirect paths to student's mathematics self-efficacy and mathematics performance. Importantly, the study showed that parent aspiration has a larger effect on parent involvement in advising than on parent involvement in school. Parent involvement in school failed to make significant direct paths to student's mathematics self-efficacy and mathematics performance. However, parent involvement in advising had a significant path to student's mathematics self-efficacy, making a significant indirect path to student's mathematics performance.

A limitation of the study concerns the issue of statistical and practical significance. Admittedly, the influence of the indirect effect of PI in advising on mathematics performance was statistically significant, but small in magnitude. Three points could be made about this small effect. First, the significant path could have been an artifact of the large sample size from the national samples. Second, a potential contributing factor to the small effect could be that mathematics performance was narrowly defined, as it was measured by a standardized test at one measurement point. Fan and Chen (2001) reported that the effect of parent involvement on achievement tends to be stronger on global indicators of achievement (such as GPA) than on achievement indicators of a specific subject. In this study, standardized mathematics score, not GPA, was used as an indicator of performance. Third, the measurement of parent involvement could also be a contributing factor to the small effect of parent involvement. Only three items for PI in advising and four items for PI in school were used as indicators of parent involvement, and these items did not cover the full range of parental involvement. It is conceivable that more global definitions of parent involvement might possibly have yielded somewhat different outcomes. Thus, caution in interpreting the results is in order.

Finally, another limitation is that the tested model is one of many possible models of parent involvement and did not include all possible related factors. For example, the study did not include school environmental factors, such as availability of parent–teacher organization or types of opportunities for parent volunteers at high schools. Ethnicity was another excluded factor in the hypothesized model due to the extreme discrepancy in the numbers of different ethnic groups, and some previous findings indicate that ethnicity plays an important role in studies of parent involvement. As Hill et al. (2004) reported, the relationship between SES and ninth graders' achievement in mathematics and language was positive and stronger for African American students than for Caucasian students after controlling for sixth-grade achievement, and ethnicity may play a role in the relationship patterns among variables. We recommend that future studies on parent involvement consider including ethnicity whenever appropriate.

References

Albert, K. A., & Luzzo, D. A. (1999). The role of perceived barriers in career development: Social cognitive process. Journal of Counseling and Development, 77, 431–436.

Bandura, A. (1997). Self-efficacy: The exercise of control. New York, NY: Freeman.

Bem, S. L. (1993). The lenses of gender. New Haven, CT: Yale University Press.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), Testing structural equation models (pp. 136–162). Newbury Park, CA: Sage.

Carter, R. S., & Wojkiewicz, R. A. (2000). Parental involvement with adolescents' education: Do daughters or sons get more help? Adolescence, 35, 29–44.

Cerpa, C., Wentzel, K. R., & Matto, H. C. (2009). Parental aspirations for their children's educational attainment: Relations to ethnicity, parental education, children's academic performance, and parental perceptions of school climate. Journal of Youth Adolescence, 38, 1140–1152.

Choi, N., & Chang, M. (2011). Interplay among school climate, gender, attitude toward mathematics, and mathematics performance of middle school students. Middle Grade Research Journal, 6, 15–28.

Crosnoe, R. (2001). Academic orientation and parental involvement in education during high school. Sociology of Education, 74, 210–230.

Davis, K. M., & Lambie, G. W. (2005). Family engagement: A collaborative, systemic approach for middle school counselors. Professional School Counseling, 9, 144–151.

DePlanty, J., Coulter-Kern, R., & Duchane, K. A. (2007). Perceptions of parent involvement in academic achievement. The Journal of Educational Research, 100, 361–368.

Deslandes, R., & Bertrand, R. (2005). Motivation of parent involvement in secondary-level schooling. Journal of Educational Research, 98, 164–175.

Domina, T. (2005). Leveling the home advantage: Assessing the effectiveness of parental involvement in elementary school. Sociology of Education, 78, 233–249.

Downs, A. (2001). It's all in the family: Middle schools share the secrets of parent engagement. Middle Ground, 4, 10–15.

Drummond, K. V., & Stipek, D. (2004). Low-income parents' beliefs about their role in children's academic learning. Elementary School Journal, 104, 197–213.

El Nokali, N. E., Bachman, H. J., & Votruba-Drzal, E. (2010). Parent involvement and children's academic and social development in elementary school. Child Development, 81, 988–1005.

Epstein, J. L., & Sanders, M. G. (2002). Family, school, and community partnerships. In M. H. Bornstein (Ed.), Handbook of parenting. Practical issues in parenting (vol. 5, pp. 407–437). Mahwah, NJ: Erlbaum.

Ewert, S. (2010). Male and female pathways through four-year colleges: Disruption and sex stratification in higher education. American Educational Research Journal, 47, 744–773.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. Educational Psychology Review, 13, 1–22.

Fan, W., Williams, C. M., & Wolters, C. A. (2012). Parental involvement in predicting school motivation: Similar and differential effects across ethnic groups. The Journal of Educational Research, 105, 21–35.

Grolnick, W. S., & Slowiaczek, M. L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. Child Development, 65, 237–252.

Halpern, D. F., Benbow, C. P., Geary, D. C., Gur, R. C., Hyde, J. S., & Gernsbacher, M. (2007). The science of sex differences in science and mathematics. Psychological Science in the Public Interest, 8, 1–51.

Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. Child Development, 75, 1491–1509.

Hill, N. E., & Craft, S. A. (2003). Parent-school involvement and school performance: Mediated pathways among socioeconomically comparable African-American and Euro-American families. Journal of Educational Psychology, 95, 74–83.

Hoover-Dempsey, K. V., Battiato, A. C., Walker, J. M. T., Reed, R. P., DeJong, J. M., & Jones, K. P. (2001). Parent involvement in homework. Educational Psychologist, 36, 195–209.

Ice, C. L., & Hoover-Dempsey, K. V. (2011). Linking parental motivations for involvement and student proximal achievement outcomes in homeschooling and public schooling settings. Education and Urban Society, 43, 339–369.

Jimerson, S., Egeland, B., & Teo, A. (1999). A longitudinal study of achievement trajectories: Factors associated with change. Journal of Educational Psychology, 91, 116–126.

Jodl, K. M., Michael, A., Malanchuk, O., Eccles, J. S., & Sameroff, A. (2001). Parents' roles in shaping early adolescents' occupational aspirations. Child Development, 72, 1247–1265.

Jöreskog, K. G., & Sörbom, D. (2006). LISREL 8.8 for Windows. Skokie, IL: Scientific Software International, Inc.

Keith, T. Z., Keith, P. B., Quirk, K. J., Sperduto, J., Santillo, S., & Killings, S. (1998). Longitudinal effects of parent involvement on high school grades: Similarities and differences across gender and ethnic groups. Journal of School Psychology, 36, 335–363.

Kline, R. B. (1998). Principals and practice of structural equation modeling. New York: Guilford.

Liu, O. L. (2009). An investigation of factors affecting gender differences in standardized math performance: Results from U.S. and Hong Kong 15 years olds. International Journal of Testing, 9, 215–237.

Marchant, G. J., Paulson, S. E., & Rothlisberg, B. A. (2001). Relations of middle school students' perceptions of family and school contexts with academic achievement. Psychology in the School, 38, 505–519.

McGraw, R., Lubienski, S. T., & Strutchens, M. E. (2006). A closer look at gender in NAEP mathematics achievement and affect data: Intersections with achievement, race/ethnicity, and socioeconomic status. Journal for Research in Mathematics Education, 37, 129–150.

Meelissen, M., & Luyten, H. (2008). The Dutch gender gap in mathematics: Small for achievement, substantial for beliefs and attitudes. Studies in Educational Evaluation, 34, 82–93.

Okpala, C. O., Okpala, A. O., & Smith, F. E. (2001). Parental involvement, instructional expenditures, family socioeconomic attributes and student achievement. Journal of Educational Research, 95, 110–115.

Overstreet, S., Devine, J., Bevans, K., & Efreom, Y. (2005). Predicting parental involvement in children's schooling within an economically disadvantaged African American sample. Psychology in the Schools, 42, 101–111.

Pajares, F. (2006). Self-efficacy during childhood and adolescence. In F. Pajares & T. Urdan (Eds.), Self-efficacy beliefs of adolescents (pp. 339–367). Greenwich, CT: Information Age.

Pomerantz, E. M., Moorman, E. A., & Litwack, S. D. (2007). The how, whom, and why of parents' involvement in children's academic lives: More is not always better. Review of Educational Research, 77, 373–410.

Reynolds, A. J. (1992). Comparing measures of parental involvement and their effects on academic achievement. Early Childhood Research Quarterly, 7, 441–462.

Skaalvik, S., & Skaalvik, E. M. (2004). Gender differences in math and verbal self-concept, performance expectations, and motivation. Sex Roles, 50, 241–252.

Sui-Chu, E. H., & Willms, J. D. (1996). Effects of parental involvement on eighth-grade achievement. Sociology of Education, 69, 126–141.

Tate, W. F. (1997). Race-ethnicity, SES, gender, and language proficiency trends in mathematics achievement: An update. Journal for Research in Mathematics Education, 28, 652–679.

Tsui, M. (2007). Gender and mathematics achievement in China and the United States. Gender Issues, 24, 1–11.

Tucker-Drob, E. M., & Harden, P. (2012). Intellectual interest mediates gene x socioeconomic status interaction on adolescent academic achievement. Child Development, 83, 743–757.

Turney, K., & Kao, G. (2009). Barriers to school involvement: Are immigrant parents disadvantaged? The Journal of Educational Research, 102, 257–271.

U.S. Department of Education, National Center for Education Statistics. (2007). Parent and family involvement in education survey (PFI:2003–2007) of the National Household Education Surveys Program: 2002–2003. Retrieved from http://nces.ed.gov/programs/digest/d12/tables/dt12_066.asp

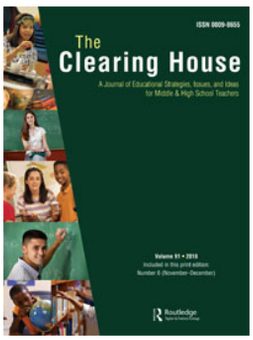
Wai, J. Cacchio, M., Putallaz, M., & Makel, M. C. (2010). Sex differences in the right tail of cognitive abilities: A 30 year examination. Intelligence, 38, 412–423.

Williams, W., & Wolters, C. (2012). Parental involvement in predicting school motivation: Similar and differential effects across ethnic groups. Journal of Educational Research, 105, 21–35.

Wong, S. W., & Hughes, J. N. (2006). Ethnicity and language contributions to dimensions of parent involvement. School Psychology Review, 35, 645–662.

Yun, M., & Kusum, S. (2008). Parents' relationship s and involvement: Effects of students' school engagement and performance. Research in Middle Level Education Online, 31, 1–11.

Copyright of Psychology in the Schools is the property of John Wiley & Sons, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.



The Clearing House: A Journal of Educational Strategies, Issues and Ideas

ISSN: 0009-8655 (Print) 1939-912X (Online) Journal homepage: https://www.tandfonline.com/loi/vtch20

Fostering Family Engagement in Middle and Secondary Schools

Stephanie N. DeSpain, Greg Conderman & Lydia Gerzel-Short

To cite this article: Stephanie N. DeSpain, Greg Conderman & Lydia Gerzel-Short (2018) Fostering Family Engagement in Middle and Secondary Schools, The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 91:6, 236-242, DOI: 10.1080/00098655.2018.1524743

To link to this article: https://doi.org/10.1080/00098655.2018.1524743

Published online: 27 Dec 2018.

Submit your article to this journal

Article views: 51

View Crossmark data

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=vtch20

THE CLEARING HOUSE
2018, VOL. 91, NO. 6, 236–242
https://doi.org/10.1080/00098655.2018.1524743

Routledge
Taylor & Francis Group

Check for updates

Fostering Family Engagement in Middle and Secondary Schools

Stephanie N. DeSpain, Greg Conderman, and Lydia Gerzel-Short

Special and Early Education, Northern Illinois University, DeKalb, Illinois, USA

ABSTRACT
Family engagement is a critical component of school success for students. However, parents of middle and high school students are often less involved in home- and school-based activities than parents of elementary students. This article describes reasons for this decrease in parental engagement and offers specific ideas for fostering parental involvement at the middle and secondary levels.

KEYWORDS
Family engagement; parent involvement; collaboration; middle school; high school

Mr Navarro is a sixth-grade teacher at Crestwood Middle School, where he has been employed for nearly two decades. Crestwood has approximately 1200 students with an ethnically diverse student population that is 53% African American, 32% Hispanic, 13% White, 1% multi-racial, and 1% Asian. Student outcomes and family engagement have decreased significantly during the years that Mr Navarro has been employed at Crestwood. Mr Navarro believes that his students have the potential for excellent post-school outcomes, but he struggles with his students' poor attendance, homework completion, and rates of academic achievement as measured by formative and summative assessments. Mr Navarro understands that family engagement is a critical component of his students' education and one that needs improvement school-wide. He knows that increased family engagement at Crestwood will undoubtedly bolster academic achievement and graduation rates; however, he and his colleagues struggle to build partnerships with their students' families and actively engage them through home- and school-based activities. Mr Navarro, his colleagues, and Crestwood administrators wonder what they can do to increase family engagement and student achievement.

For the past several decades, researchers have regarded family engagement as a vital factor in the education and academic success of school-age students (Hornby and Lafaele 2011). Engagement is a shared collaborative approach that considers the multidimensional aspects of home and school (McWayne et al. 2016) and goes beyond a single school year (Ferrara 2011). In family engagement, families are considered a vital component of the school team and bring value to the learning environment. For example, researchers have linked family engagement to increased student academic performance and motivation, decreased dropout rates, and greater post-school outcomes (Avvisati et al. 2014; Bhargava and Witherspoon 2015). Other benefits include improved rates of student homework completion, better school attendance, increased self-esteem, and improved in-school behavior (Bhargava and Witherspoon 2015; Hirano et al. 2016; Van Voorhis 2011). Educators also benefit from improved student achievement, attendance, classroom behavior, social functioning, and mental health (Hornby and Lafaele 2011; Pomerantz et al. 2007). When students regularly attend, achieve at a higher rate, and have improved social and emotional health, educators can navigate through the curriculum with greater efficiency and ease. Educators also report improved job satisfaction and morale.

Parents and families also benefit from engaging in their child's education. Engaged parents understand their children's emotional and academic needs, gain confidence in their parenting skills, and recognize the needs of school personnel. Engaged families understand the curriculum and classroom expectations and are more likely to reinforce learning at home. Also, engaged

CONTACT Stephanie N. DeSpain sdespain@niu.edu 162 C Gabel Hall, Northern Illinois University, DeKalb, IL 60115, USA.
© 2018 Taylor & Francis Group, LLC

Table 1. Promoting parental engagement across three domains.

Type of parental engagement	Recommendations for promoting engagement
School-based engagement	Assess parent needs and tailor events based on those needs Make personal invitations (phone calls, emails, etc.) in family's preferred language Suggest groups of parents attend events together based on their location, knowledge of each other, and shared needs Combine PTO or PTA meetings with other events (i.e., fine arts performance, athletic event) to increase attendance Allow parents to participate from their own home through electronic means Capitalize upon parents' unique talents by offering a menu of engagement activities Encourage students to write invitations to school events to family members Invite parents and students to transition meetings (for students advancing to middle school and those advancing to high school) to inform them of policies and procedures at the new school
Home-based engagement	Communicate frequently and provide parental updates on student progress Provide parents thorough examples of how to complete homework assignments (e.g., brief demonstrations streamed through the class website or personal demonstrations, homework guides) Send home links to websites that provide support for families Provide materials and detailed examples of homework in home language Suggest ways for structuring the home environment to promote homework completion (i.e., designated work space, materials) Offer ideas and resources to promote high-quality student engagement at home (i.e., age-appropriate and high-quality literature, web resources)
Academic socialization	Ask parents open-ended questions about their goals for their child and their child's goals Suggest strategies for parents for discussing academic aspirations with their child Develop assignments that require students to investigate a possible career, develop future plans, and share those with their parents Provide resources for parents (e.g., on the school website, in the school library, or school parent center) that facilitate knowledge of and discussion around the student's career, postsecondary education, and independent living options Make time available for parents and their student to meet with school guidance counselor or vocational counselor

families assume active roles in policy making at school and in the community (Bhargava and Witherspoon 2015).

Although benefits to family engagement are evident across age and grade bands, they are perhaps even more important during adolescence when dropout rates begin to increase and student school performance begins to decrease (Wang and Eccles 2012). Noel et al. (2016) reported that about 94% of parents of children in kindergarten through 2nd grade helped their children with home-based activities such as assisting and checking homework, 93% attended parent–teacher organization (PTO) or parent teacher association (PTA) meetings, 92% attended parent–teacher conferences, and 79% attended school or class events. In contrast, only 58% of parents of middle-level children helped with home-based activities, 87% attended PTO or PTA events, 71% attended parent–teacher conferences, and 70% attended school or class events. Family engagement in middle and secondary level students is vital in student achievement and success. In light of the decreasing numbers of families who engage in school activities and instruction in middle and secondary schools, this article presents strategies that teachers and school administrators can use to enhance family engagement at the middle school and secondary school levels.

Parental engagement

Reynolds et al. (2015) found differing perspectives of engagement between teachers and families. Teachers felt that parents were not interested or engaged in student learning and that any involvement was due solely to their efforts to encourage parental engagement. However, families reported that they wanted to be involved, but that teachers called home only when there was an issue or concern. This disconnection in perception often determines whether families become a vital partner in the school community. Consequently, one goal for school staff could be to increase the number of positive calls and correspondences given to parents over a specified time.

Parent engagement in education comes in many different forms. Middle or high school professionals sometimes only involve parents in limited and traditional ways, such as through weekly or monthly newsletters and field trips (Lawson 2003). However, to provide an inclusive approach for engaging families, educators should offer a variety of engagement activities. Researchers often distinguish between school-based and home-based types of engagement (Sheldon and Epstein 2005; Hill and Tyson 2009). School-based engagement activities include attending parent–teacher conferences, assisting with classroom activities o0r parties, and attending PTO or PTA meetings. Home-based engagement activities include assisting with homework, discussing school matters, and supporting grade level skills (Pomerantz et al. 2007). Academic socialization describes opportunities when parents share their thoughts about education and their goals for their children.

Bhargava and Witherspoon (2015) discovered that academic socialization actually increases as students' age. These authors expressed that "parents may reduce their involvement in strategies that may infringe upon adolescents' autonomy (e.g., assisting with homework, volunteering at school) but increase their involvement in strategies that allow them to scaffold independence in youth and promote youth's decision making ability (e.g., communicating the value of education"; p. 1702). Nevertheless, decreases in parental engagement in school and home-based activities negatively affect the academic success and trajectory for middle and high school students. Because all three components are important at the middle and high school levels, Table 1 includes ideas for middle and high school personnel for supporting parental engagement in these three domains.

When implementing strategies to promote parental engagement, such as those suggested in Table 1, it is important to keep in mind that communication with parents is critical.

Addressing barriers to family engagement

Addressing logistical issues

Many parents frequently cite language, culture, and economic circumstances as barriers to their school engagement (Altschul 2011). Work schedules (e.g., shift work) or a need to work multiple jobs may further confound engagement, resulting in difficulty with tasks such as assisting with homework that requires parent engagement and meeting with teachers. Consequently, educators may wonder how to address such barriers to create a more inclusive approach for family engagement. As an initial step, Padak and Rasinski (2010) emphasized that, "for families to become active participants in the life of the school, they must first feel welcomed, valued, and connected to each other, to school staff, and to what their children are doing in school" (294). Families who feel welcome in school exhibit higher rates of engagement. Additionally, we offer the following ideas for middle and high school personnel for facilitating a welcoming atmosphere and school community:

- Contact families before an issue arises to convey a positive and trusting partnership
- Provide families with contact information for school staff (e.g., teachers, principal, secretary, guidance counselor, coach, school nurse)
- Send home classroom and school calendars
- Greet families on the phone and as they enter the building in a welcoming and respectful tone
- Provide a parent resource library
- Encourage families to share their thoughts on specified topics through parent groups
- Determine how families want to communicate (e.g., mailings, internet, phone calls, home visits)
- Reach out to new families
- Provide contact information for school and community resources
- Use various preferred communication tools with families (i.e., newsletter, email, blog, social media, text messages, paper handouts, phone, visit) and remember that not all families have access to technology
- Hold open houses and other forums, so parents can interact with school and community personnel

Addressing language and cultural diversity barriers

School communities are becoming more heterogeneous due to the increasing numbers of

Table 2. Logical issues and possible solutions.

Logistical issue	Possible solutions
Family relationships	Make positive personal phone calls home to learn about family and share information Send regular updates on student progress and class happenings Be available during the week for parent drop-ins (i.e., school, electronically) Create a parent survey to understand their wants, needs, and availability. Update the survey at least twice during the school year Create a class website to share information and encourage communication between parent and teacher (i.e., blog) Use a home-school communication system Invite parents to share their knowledge with their student (i.e., what motivates a child, what works at home)
Language	Determine the preferred home language of family members Invite translators to every school event Have child invite parents to the event with a letter, email, text, etc. Ensure all communication and school signage represent languages spoken by families
Schedule	Determine best times for meeting per family Offer alternative times for events, including weekends Offer alternative forms of engagement (in person, Skype, teleconference, video chat, etc.) Respect special days associated with family culture
Transportation	Offer free transportation to the school site Make some pre-scheduled and mutually agreed upon home visits Hold events at a convenient neutral site (i.e., library, YMCA, community building) Provide homework help at neutral sites in the neighborhood with copies of textbooks at such locations Offer free transit/public transportation passes or taxi vouchers
Childcare	Offer free childcare during school events Encourage and invite extended family members Connect with and use local childcare agencies (i.e., YMCA, home- or center-based childcare center) Connect with and use services of local high school or college student organizations (e.g., Future Teachers of America)
Incentive for Attending	Provide a stipend for a course or professional development at a local community college or university (e.g., computer course, math course) Provide gift cards for food/gas Offer passes to local children's museum Provide bag of books or school supplies Enter parent name into a raffle for prize drawing Provide a small meal during the event/activity

students who are English language learners (Araujo 2009). Establishing family–school partnerships with culturally and linguistically diverse (CLD) families can be challenging, especially when considering the multitude of home languages a teacher might encounter. School professionals can use supports such as Google Translate, but these should be used with caution as sometimes translations are translated verbatim from English to other languages and are not always accurate. Providing human translators is usually the best option, particularly for specialized meetings such as parent–teacher conferences and special education meetings. Often university communities have professors from a wide range of countries who can assist with translation. Teachers might also consider communicating through text message apps which translate messages written in English to a variety of home languages (i.e., http://talkingpts.org/, https://www.remind.com/) when sharing important school information.

Family engagement increases with a family's access to "cultural capital" which refers to the abilities and experiences families have to support their child's education (Lee and Bowen 2006). According to Lee and Bowen, "cultural capital is the advantage gained by middle-class, educated European American parents from knowing, preferring, and experiencing a lifestyle congruent with the culture that is dominant in most American schools" (198). CLD families may not have these same kinds of educational experiences and successes compared to culturally dominant families. Some CLD families work several jobs and might not have access to transportation or child care. Therefore, these families might not be as involved in school-based culture and activities such as parent nights and PTO or PTA organizations or in home-based activities that extend learning beyond the school day (Lee and Bowen 2006; McNeal 1999). Specifically, these families might engage less because they do not understand educational terms, feel uninformed when

speaking with teachers, are unavailable during the typical school-scheduled activities times, or had poor educational experiences as a student and choose to disengage from their child's education (McNeal 1999). Some of these issues are especially unique at the middle or high school. For example, middle and high schools are organized differently than elementary schools, tend to be larger, and often have a specific chain of command to follow for reporting absences, requesting information, and paying student fees. Similarly, student earned credits now count toward graduation. Explicitly sharing these topics with all parents begins to develop important "cultural capital" which helps parents understand school expectations.

These obstacles can be further exacerbated by low social or economic status and diversity (Murray et al. 2014). A family–school advocate (volunteer or paid position) can problem solve with families to engage them in school and home-based activities. In addition, ideas noted in Table 2 address some logistical issues and provide additional suggestions for promoting parental engagement.

Specific ideas

In addition to the general ideas described earlier, school personnel can also consider specific ways to increase family attendance and engagement. This section will describe student-led conferences, student-led Individual Education Program (IEP) meetings, and community resource involvement.

Student led conferences

Student-led conferences shift much of the responsibility for facilitating a parent–teacher meeting from teacher to student. One purpose of student-led conferences is for students to assume more ownership of their learning and goals (Benson and Barnett 2005). This is especially appropriate as adolescents benefit from assessing their strengths, developing goals, and taking ownership of their learning (Steinberg 2016). Students often lead the conference by welcoming and introducing meeting participants, describing their quarterly, semester, or annual goals; detailing progress toward their goals, and sharing portfolio artifacts. To prepare for the event, students need class time (during homeroom or in selected courses) to practice and receive feedback on their presentation, develop goals, and assemble purposeful portfolio items. Electronic (or three-ring binder) portfolios can include test scores, written compositions, selected artifacts from various courses, teacher comments, and student reflections. Students can share academic, social, emotional, extracurricular, and physical fitness goals and progress toward those goals.

Researchers have discovered that student-led conferences significantly increase family participation and attendance (Benson and Barnett 2005; Conderman, Ikan, and Hatcher 2000). However, some parents still desire time just with the teacher. Therefore, for some parents, student-led conferences do not replace traditional parent–teacher conferences.

Students with disabilities

A slight variation of student-led conferences that involve students with disabilities, their family members, and members of their support team is student-led IEP or transition meetings. To the extent possible and appropriate, in these meetings, students share their goals and progress within certain pre-targeted skill areas. For example, during an IEP meeting, students share their strengths and needs in identified goal areas (i.e., reading, behavior, or writing) and help craft their goal in those areas. In preparation for the meeting, students practice answering questions such as (1) What are my strengths? (2) What areas do I need help? (3) How do I learn best? (4) How can my teachers help me? (5) How can my parents help me? Similarly, in transition-meetings, students share their future goals in areas such as employment, housing, continuing education, leisure and recreation, and community involvement. In some cases, students share their transition goals through a PowerPoint presentation that they have developed with the support of their teacher, paraprofessional, or student teacher.

Researchers and practitioners have discovered that student-led IEP and transition meetings increase parental engagement, promote self-

determination and self-advocacy skills for students with disabilities, and promote positive perceptions of students with disabilities by team members (Hawbaker 2007). Researchers have recommended that teachers provide a structured approach for students by providing a template, practice frequently with students, and have students write invitations to their family members and other team guests.

Involving community partners

Middle or high school personnel can also encourage family engagement by hosting workshops on topics such as educational options after high school, financing college, preparing for college, and local employment options (Henderson and Mapp 2002). Alternatively, they can invite representatives from various agencies or educational institutions to display tables during traditional school events. For example, before or after athletic, fine arts, or other school-scheduled events, family members can meet with representatives from local colleges or universities, community agencies, or local businesses to learn about services, employment possibilities, and requirements for higher education. Providing tables with literature and representatives from these sources encourage family attendance, saves family time, and connects families with immediate information.

Concluding thoughts

Family engagement at all educational levels is essential; however, engagement decreases in the middle and secondary levels. Therefore, middle and secondary school personnel need to be creative when developing ways to engage parents. First, all school personnel need to be purposeful in making school a welcoming place for all families. They can also strategically address logistical challenges associated with transportation, scheduling, and childcare by collaborating with community and school-based organizations and agencies. Making school a place where parents and family members find helpful resources often motivates them to engage more frequently. Making parental engagement a priority in middle and high schools takes a big commitment. However, the effort can result in strong family--school partnerships that help develop successful students.

References

Altschul, I. 2011. Parental involvement and the academic achievement of Mexican American youth: What kinds of involvement in youths' education matter most? *Social Work Research* 35 (30):159–70.

Araujo, B. E. 2009. Best practices in working with linguistically diverse families. *Intervention in School and Clinic* 45 (2): 116–23.

Avvisati, F., M. Gurgand, N. Guyon, and E. Maurin. 2014. Getting parents involved: A field experiment in deprived schools. *Review of Economic Studies* 81 (1):57–83. doi: 10.1093/restud/rdt027

Benson, B., and S. Barnett. 2005. *Student-led conferencing using show-case portfolios*. Thousand Oaks, CA: Corwin Press.

Bhargava, S., and D. P. Witherspoon. 2015. Parent involvement across middle and high school: Exploring contributions of individual and neighborhood characteristics. *Journal of Youth and Adolescence* 44 (9):1702–19. doi: 10.1007/s10964-015-0334-9

Conderman, G., P. Ikan, and R. Hatcher. 2000. Student-led conferences in inclusive settings. *Intervention in School and Clinic* 36 (1):22–6.

Ferrara, M. M. 2011. Phrase versus phase: Family engagement. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas* 84 (5):180–3.

Hawbaker, B. W. 2007. Student-led IEP meetings: Planning and implementation strategies. *TEACHING Exceptional Children Plus* 3(5):4.

Henderson, A., and K. Mapp. 2002. *A new wave of evidence: The impact of school, family, and community connections on student achievement*. Austin, TX: Southwest Educational Development Laboratory.

Hill, N. E., and D. F. Tyson. 2009. Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology* 45 (3):740–63. doi: 10.1037/a0015362.

Hirano, K. A., S. A. Garbacz, L. Shanley, and D. A. Rowe. 2016. Parent involvement in secondary special education and transition: An exploratory psychometric study. *Journal of Child and Family Studies* 25 (12):3537–53. doi: 10.1007/s10826-016-0516-4

Hornby, G., and R. Lafaele. 2011. Barriers to parental involvement in education: An explanatory model. *Educational Review* 63:37–52. doi: 10.1080/00131911.2010.488049

Lawson, M. A. 2003. School-family relations in context. Parent and teacher perceptions of parent involvement. *Urban Education* 38 (1):77–133.

Lee, J. S., and N. K. Bowen. 2006. Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal* 43 (2):193–218.

McNeal, R. B. 1999. Parental involvement as social capital: Differential effectiveness on science achievement, truancy, and dropping out. *Social Forces* 78 (1):117–44.

McWayne, C. M., G. Melzi, M. C. Limlingan, and A. Schick. 2016. Ecocultural patterns of family engagement among low-income Latino families of preschool children. *Developmental Psychology* 52 (7):1088–102.

Murray, K. W., N. Finigan-Carr, V. Jones, N. Copeland-Linder, D. L. Haynie, and T. L. Cheng. 2014. Barriers and facilitators to school-based parent involvement for parents of urban public middle school students. *SAGE Open* 4 (4):215824401455803. doi: 2158244014558030.

Noel, A., P. Stark, and J. Redford. 2016. *Parent and family involvement in education, from the National Household Education Surveys Program of 2012 (NCES 2013-028.REV2)*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences, US Department of Education. Retrieved [February 21, 2018] from http://nces.ed.gov/pubsearch.

Padak, N., and T. V. Rasinski. 2010. Welcoming schools: Small changes that can make a big difference. *The Reading Teacher* 64:294–7. doi: 10.1598/RT.64.6.12

Pomerantz, E. M., E. A. Moorman, and S. D. Litwack. 2007. The how, whom, and why of parents' involvement in children's academic lives: More is not always better. *Educational Research* 77:373–410.

Reynolds, A. D., T. M. Crea, J. Medina, E. Degnan, and R. McRoy. 2015. A mixed-methods case study of parent involvement in an urban high school serving minority students. *Urban Education* 50 (6):750–75.

Sheldon, S. B., and J. L. Epstein. 2005. Involvement counts: Family and community partnerships and mathematics achievement. *Journal of Educational Research* 98: 196–207.

Steinberg, L. 2016. *Adolescence*. Columbus, OH: McGraw Hill.

Van Voorhis, F. L. 2011. Costs and benefits of family involvement in homework. *Journal of Advanced Academics* 22 (2):220–249.

Wang, M., and J. S. Eccles. 2012. Adolescent behavioral, emotional, and cognitive engagement trajectories in school and their differential relations to educational success. *Journal of Research on Adolescence* 22 (1):31–9. doi: 10.1111/j.1532-7795.2011. 00753.x

Parent Involvement in Reading

Laurie Elish-Piper

About This Column

Parents play a key role in their children's literacy development and school success. To support educators in building positive working relationships with their students' parents, this column offers practical suggestions to promote parent communication, involvement, and partnerships.

Flipping Parent-Teacher Conferences

I was always optimistic about parent-teacher conferences, but generally I found them less than ideal. Usually we ran out of time, I did too much talking, or I never got to say what I really wanted and needed to share. My conferences never seemed to help me build relationships with my students' parents. Moreover, as a parent, I usually felt like I was on an assembly line as we proceeded through a tightly structured 15-minute conference. What can teachers do to update and enhance parent-teacher conferences so they are more productive? Could flipping parent-teacher conferences be a viable idea?

The flipped classroom has become common in many schools. In this approach, teachers provide instruction in online formats so students can access it outside of class time; and during class, teachers facilitate discussions, application activities, and projects. This approach is the opposite or the flipped version of teaching wherein instruction is provided in the classroom and homework is assigned for students to apply what they have independently at home. The benefits of flipping the classroom include improved student learning and increased engagement (Bergmann & Sams, 2015). Some schools are even flipping their faculty meetings by providing materials beforehand for teachers to read and consider so time at the faculty meeting can be spent on discussions, professional development, and sharing (McKibben, 2014). Is it possible that parent-teacher conference could benefit from being flipped too?

While conferences are an important part of your communication and collaboration with families, they are not a substitute for ongoing communication about what is happening in your classroom, and the successes and challenges that their children are experiencing. That ongoing communication may take many forms, including phone calls, newsletters, e-mails, and other digital formats, as well as face-to-face conversations and notes sent home. Parent-teacher conferences should then be a natural extension of this ongoing, regular communication with families.

If you have been able to build that foundation of ongoing communication, you are probably ready to consider flipping your parent-teacher conferences to be more engaging, informative, and relevant. In this column, I will provide specific examples of how you can flip your parent-teacher conferences.

Getting Started with Flipped Conferences

If you want to flip your parent-teacher conferences, where should you begin? Peter DeWitt (2013) suggests that you demystify the process and simply think about flipped conferences as giving parents access to the information they will

need to prepare for conferences. He challenges the common practice of distributing report cards or progress reports at parent-teacher conferences, recommending instead that sending these materials home in advance will allow parents to prepare questions, consider concerns and goals, and come to the conference ready to engage in meaningful dialogue with the teacher about their children. When you send these reports home (or share them in your school's online parent portal), he suggests that you include a letter helping parents understand the reports so they can digest the information as well as develop questions they want to discuss with you.

Student-led conferences have become more common in recent years. Taking a flipped approach is a great next step to get parents prepared for conferences as well. With student-led conferences, you will generally need to help students prepare about two weeks prior to the conference. You will want to invite them to reflect on their growth, identify areas where they need further development, and set goals. If you use portfolios in your classroom, they will be very helpful to this process. Otherwise, you can help students look at multiple samples of their work, recent assessment results, and learning standards or "Can Do" statements that clarify expectations. The first time you go through this process with students, they may need quite a bit of support. Therefore, you may find that scheduling brief one-to-one conferences with students will be necessary to guide them through this process. The next step is to get parents involved in preparing for conferences. You can do this by asking students to share the insights they gained from their conference preparation with their parents about a week before the scheduled conference. Then, you can request that parents and children work together to develop a few questions or topics that they want to discuss at the conference. Request that they share these questions and/or topics with you at least a few days prior to the conference so you have time to prepare. You can do this by having them fill out a hard copy form or complete an online form (e.g., Google Forms; see next section of this column). You can then take their questions and topics, add anything else that you want to discuss at the conference, and share the conference agenda with parents and students in advance so everyone knows what to expect.

As you prepare for each conference, you will want to review the agenda and consider how to respond to their questions. You will also want to gather relevant artifacts to support or explain your responses more fully, as well as to identify and secure appropriate resources to share (Stockman, 2015). This preparation will allow you to ensure that each of your flipped parent-child-teacher conferences is productive, informative, and successful.

Using Google Forms to Flip Your Parent-Teacher Conferences

Technology offers many tools and opportunities for teachers to connect with families. One useful tool to help you flip your parent-teacher conferences is Google Forms (Coor, n.d.). If you are not familiar with Google Forms, you can easily create an online questionnaire and then send an e-mail to families that provides a link to the Google Form that they can fill out online. A sample pre-conference questionnaire is shown in Figure 1 (to see this pre-conference questionnaire as a Google Form, visit *https://goo.glforms/bcNGpK96GchnSAH92*). Google Forms will allow you to easily organize all of the parents' responses into a spreadsheet that you can sort by date and time of conference. You can type and highlight your responses into each column and add notes about resources and strategies you want to share to address parents' concerns. You can then use the spreadsheet as a guide when you hold your conferences. Because you know what parents want to discuss, and you have prepared responses and resources in advance, you will be able to make your conferences very relevant and useful for families.

Figure 1. Sample Questions for Google Form Pre-Conference Questionnaire

Please fill out this form at least 3 days before the conference.

E-mail address:

Child's name:

Date of conference:

Time of conference:

What makes you the most proud about your child?

What areas of concern would you like to discuss at our conference?

What is a goal you have for your child?

What things do you do at home to support your child's learning?

What suggestions do you have for how I can support your child's learning?

Thank you!

Academic Parent-Teacher Teams

A very bold way to flip conferences is to transform them into Academic Parent-Teacher Teams (APTT). This approach was developed by Maria Paredes, a researcher at WestEd nonprofit research and consulting group. She began implementing APTTs in Phoenix, Arizona, almost a decade ago, and now over 600 schools in 22 states implement them (Iasevoli, 2017). Many of these schools were very diverse, with large percentages of students identified as low-income and culturally and linguistically diverse. In her dissertation examining the efficacy of the APTT model, Paredes (2010) found positive results in terms of parent perceptions of their involvement in their children's schooling, attitudes toward school, and student performance in target skill areas. The APTT approach swaps traditional one-to-one parent-teacher conferences for three 75-minute group meetings and one 30-minute individual meeting over the course of a school year (WestEd, n.d.). You are probably wondering what these meetings look like and how you can implement them in your classroom.

At the first meeting, teachers meet with the parents of all of their students in a large group. They facilitate a team-building activity so parents get to know one another and feel comfortable in the group. Next, the teacher shares the most important skills that students are expected to demonstrate by the end of the school year. Then, the teacher shares a graph, with all of the names and other identifying information removed, showing all of the students' performance levels to date on these specific skills so parents can see how the class is performing. The teacher also shares with each parent an individual form that shows how their child is performing on these skills. Next, the teacher models activities and games parents can do with their children to develop and practice these specific skills. Parents then have time to practice the activities and games with other parents and the teacher to get comfortable doing them as well as to consider how they would use them with their own children at home. Each parent receives all of the materials needed to do the activities and games with their child. Finally, with support from the teacher, parents set a specific goal for their child's performance on the target skills in 60 days—when the next APTT session will be scheduled. In addition, parents are asked to develop a plan for what they will do at home to help their child work toward the goals. This same approach is used for the next two large group meetings. Finally, the teacher will schedule a 30-minute individual meeting with each child's parent(s) to review the child's performance and develop an action plan for next steps. If this approach sounds complicated or difficult to implement, you may find the videos in Figure 2 helpful to get a better sense of how you could implement this approach in your classroom.

Figure 2. Videos About Academic Parent-Teacher Teams

What Is APTT?
This video provides an overview of the APTT approach:
https://youtu.be/Wx0u7UH6p68

Academic Parent-Teacher Teams #1
This video shows APTT being implemented at the 1st-grade level:
https://youtu.be/C7UPA_F-AWU

Stanton APTT Workshop
This video shows an APTT workshop at the elementary level:
https://youtu.be/1YNsWrFiYfY

Academic Parent-Teacher Teams #3
This video shows an APTT workshop at the middle school level:
https://youtu.be/KjKXSbM8-1c

APTT Middle School Teacher
This video is a short interview with a middle school teacher about how and why she uses APTT at the middle school level:
https://youtu.be/VQSQ4ODwOMk

Next Steps

I hope that these examples of how to flip parent-teacher conferences provide useful ideas to help you move your conferences forward to be more relevant, engaging, and productive. Of course, you will need to consider your school context, grade level, and other relevant information before you determine how to proceed with your own plan to flip your parent-teacher conferences.

References

Bergmann, J., & Sams, A. (2015). *Flipped learning: Gateway to student engagement*. Arlington, VA: International Society for Technology in Education.

Coor, M. (n.d.). *Flip your parent-teacher-student conferences with Google Forms* [Blog post]. Retrieved from https://thecornerstoneforteachers.com/flipped-conferences

DeWitt, P. (2013, December 6). *Flipping parent conferences?* [Blog post]. Retrieved from http://blogs.edweek.org/edweek/finding_common_ground/2013/12/flipping_parent_conferences.html

Iasevoli, B. (2017, July 12). *This isn't your mom's parent-teacher conference* [Blog post]. Retrieved from http://blogs.edweek.org/edweek/teacherbeat/2017/07/redesigned_parent_teacher_conference.html

McKibben, S. (2014). Mastering the flipped faculty meeting. *Education Update*, *56*(1), 2-4.

Paredes, M. C. (2010). *Parent involvement as an instructional strategy: Academic parent-teacher teams* (Order No. 3444760). Available from ProQuest Dissertations & Theses Global (859003646). Retrieved from https://search.proquest.com/docview/859003646?accountid=12846

Stockman, A. (2015, May 13). *6 ways to flip your parent-teacher conferences* [Blog post]. Retrieved from http://www.brilliant-insane.com/2015/05/6-ways-to-flip-your-parent-teacher-conferences.html

WestEd. (n.d). *What is APTT?* Retrieved from https://www.wested.org/wp-content/uploads/2017/03/services-appt-brochure.pdf

About the Author

Laurie Elish-Piper is Dean of the College of Education at Northern Illinois University. She is also a Distinguished Teaching Professor and Presidential Engagement Professor in the Department of Literacy and Elementary Education at NIU. Prior to her work in higher education, Laurie was an elementary and middle school teacher, and an educational therapist in a clinical setting. Her research, publications, and presentations focus on family literacy, parent involvement, literacy assessment, and literacy coaching.

Copyright of Illinois Reading Council Journal is the property of Illinois Reading Council and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Necessary but Not Sufficient: The Role of Policy for Advancing Programs of School, Family, and Community Partnerships
Author(s): Joyce L. Epstein and Steven B. Sheldon
Source: *RSF: The Russell Sage Foundation Journal of the Social Sciences*, Vol. 2, No. 5, The Coleman Report and Educational Inequality Fifty Years Later (September 2016), pp. 202-219
Published by: Russell Sage Foundation
Stable URL: https://www.jstor.org/stable/10.7758/rsf.2016.2.5.10
Accessed: 19-11-2018 19:23 UTC

REFERENCES
Linked references are available on JSTOR for this article:
https://www.jstor.org/stable/10.7758/rsf.2016.2.5.10?seq=1&cid=pdf-reference#references_tab_contents
You may need to log in to JSTOR to access the linked references.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

TOR archive indicates your acceptance of the Terms & Conditions of Use, available at org/terms

This article is licensed under a Attribution-NonCommercial-NoDerivs 3.0 Unported. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-nd/3.0/.

Russell Sage Foundation is collaborating with JSTOR to digitize, preserve and extend access to *RSF: The Russell Sage Foundation Journal of the Social Sciences*

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

Necessary but Not Sufficient: The Role of Policy for Advancing Programs of School, Family, and Community Partnerships

JOYCE L. EPSTEIN AND STEVEN B. SHELDON

Since the release of Equality of Educational Opportunity, *researchers have emphasized the importance of applying the results of research to policies for school improvement. Policies tell educators* to *do something, but not* how *to enact specific laws. This study analyzes data from 347 schools in 21 districts to identify variables that support the enactment of policies for parental engagement. We address research questions on how school and district practices affect the quality of school-based partnership programs. Our results indicate that a policy on parental involvement may be a good first step, but other factors—principals' support for family and community engagement and active facilitation of research-based structures and processes by district leaders—are important for establishing a basic partnership program. These factors promote programs that engage all students' families. Schools that take these steps have higher percentages of engaged families and report higher rates of average daily attendance among their students.*

Keywords: district leadership, school leadership, family and community involvement, partnership program development

There are interesting questions to ask about the role of federal, state, and local policies in improving programs of school, family, and community partnerships. For instance, though policies are important for promoting school improvement, how much do policies affect school change? This study explores the responses of schools and districts to policy recommendations for partnership programs and the connections between these programs and family engagement and student attendance.

THE HISTORICAL CONTEXT

The *Equality of Educational Opportunity* (*EEO*) report (Coleman et al. 1966) focused attention on the importance of families in children's education, based mainly on analyses of measures of family socioeconomic status. Its findings about the strong connections of family background and weak contributions of school resources to student achievement sparked a decade-long argument among social scientists on the question: which is more important for student learning—the school or the family? The debate spurred the field of education research into action that has continued to this day. To study influences on student learning, researchers began collecting new and better data on school and classroom environments, students' opportunities and motivation to learn, family factors, and the connections between home, school, and community.

Joyce L. Epstein is research professor of education and sociology at Johns Hopkins University and director of the Center on School, Family, and Community Partnerships. **Steven B. Sheldon** is associate professor of education at Johns Hopkins University and associate director of the Center on School, Family, and Community Partnerships.

Direct correspondence to: Joyce Epstein at jepstein@jhu.edu, 2701 N. Charles St., Suite 300, Baltimore, MD 21218; and Steven Sheldon at ssheldon@jhu.edu, 2701 N. Charles St., Suite 300, Baltimore, MD 21218.

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

We and our colleagues were inspired by the controversy to change our research question away from the "contest" of family versus school and away from the seemingly fixed inequities in family involvement linked to parents' socioeconomic status (SES). We posed a new question: *if* families are so important for student success in school, how can all schools engage all families so that more students benefit from their parents' support and encouragement to do their best in school? This new, more difficult question required research on school policies, school organization, leadership, and the alterable variables that might produce more equitable programs in family and community engagement for the success of more students.

Historically, family engagement has been treated as about the parents, that is, as external to schools. Our new question asked whether and how teachers and administrators could work with all students' parents and with community partners from the earliest years on to ensure students' readiness for school, grade-level learning, progress and promotion to the next grade, and on-time graduation from high school. This approach, in making school, family, and community partnerships a component of school organization—one that is central to other school improvements—ultimately was about the students.

THE PRESENT POLICY CONTEXT

The Elementary and Secondary Education Act (ESEA) lists requirements for parent and family engagement at the school, district, and state levels, building on guidelines in ESEA reauthorizations since 1988.[1] Schools are required to engage all families in ways that support student achievement. Districts are told to assist all schools in developing partnership programs. States are expected to collect and review district policies on parental involvement, and the requirements are monitored for compliance to justify the continuation of Title I funds (Cowan 2003). The policy tells educators to engage families, but does not specify how to meet these requirements or how to improve the quality of their partnership programs. There is, then, a critical gap between the intent and enactment of the law.

THEORETICAL PERSPECTIVES ON LEADERSHIP DEVELOPMENT

We have drawn on three theoretical perspectives to guide our research questions and analyses. Sociocultural and organizational learning theories posit that districts and schools learn from each other when they share leadership and responsibilities for school improvement, including family and community engagement (Honig 2006, 2008; Huber 1991; Spillane and Diamond 2007; Stein and Coburn 2008). *Sociocultural learning theory* asserts that good communication between and among colleagues who gain knowledge, exchange ideas, and take actions to develop a "culture of collaboration" affects the organization as a whole (Knapp 2008; Wenger 1998).

Organizational learning theory states that organizations improve when leaders share knowledge, plan actions, conduct evaluations, gather evidence, make sense of data, and identify best practices (Elmore 2004; Senge 1990; Supovitz 2006; Weick 1995). In combination, the two theories reinforce each other with expectations that organizations and individuals will learn and advance. That is, the interpersonal exchanges at the heart of sociocultural learning theory are informed by attention to useful data, which is central to organizational learning theory (Honig 2008; Leithwood and Prestine 2002; Louis 2008; Mayrowetz 2008).

A third theory calls attention to the *content* of leadership for developing programs for school, family, and community partnerships. The *theory of overlapping spheres of influence* asserts that children learn and grow at school, at home, and in the community, and that they benefit when parents, teachers, and others in

1. Section 1010 on "parent and family engagement" specifies that districts ([local education agencies] LEAs) must have a policy and must "(B) provide the coordination, *technical assistance, and other support necessary to assist and build the capacity of all participating schools* in planning and implementing effective parent and family involvement activities to improve student academic achievement and school performance" (U.S. Department of Education 2015, emphasis added).

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

the community collaborate in ways that encourage learning and development (Epstein 1987, 2011). Goal-linked involvement activities implemented by educators, parents, students, and community members should reduce the distance and potential discord between home, school, and community and increase the quality of school-based partnership programs. Outreach and information from schools should increase the number of involved families and improve goal-linked results for students.

This interdisciplinary theory of overlapping spheres of influence specifies an external model that represents the degree of the shared interests and actions of home, school, and community concerning student learning and school success. An internal model recognizes that the student is the central actor in learning and specifies the complex relationships and interactions of parents, teachers, and community partners.

In research on the practices that occur in the overlapping contexts of home, school, and community, we identified a *framework of six types of involvement* that helps categorize separable practices of partnership that pose unique challenges to engaging all families and that produces different results for student achievement and behavior. The six types of involvement—*parenting, communicating, volunteering, learning at home, decision-making,* and *collaborating with the community*—can be activated to engage families with children on specific school improvement goals (such as improving students' reading skills and attitudes, attendance, or health) (Epstein et al. 2009).

Programs based on this theory change family involvement from an external factor unrelated to schools to an essential component of school and classroom organization (Bryk et al. 2010; Epstein and Sheldon 2006). Partnership programs require leaders to set policy, select or customize and conduct practices, and evaluate progress in engaging all families. In each school, an Action Team for Partnerships (ATP) provides the structure for planning, implementing, and evaluating a site-based program of family and community engagement linked to goals for student learning and development (Epstein et al. 2009).

The three theories support the *process* of side-by-side leadership (Epstein, forthcoming). In contrast to top-down directives from districts to schools or bottom-up reports of good practice, side-by-side leadership recognizes the importance of multidirectional learning that is enriched—not restricted—by the dissimilar roles of participants in diverse learning communities. Rather than focusing only on prescribed procedures or narrow monitoring for compliance (as in top-down vertical networks), or only on atheoretical trial-and-error approaches (as in bottom-up networks), side-by-side leaders customize communications, develop tools, collect and analyze data, and take action to continually improve school programs (as in Continuous Progress Learning Communities; see Bryk et al. 2015). Researchers, district leaders, principals, teachers, parents, and others work side by side to exchange information and ideas and raise questions to improve research and practice.

We draw from these theories to test whether and how school-based actions, district assistance, and the simultaneous and joint work of school team members with district leaders improve the nature and extent of family and community engagement and results for parents and students.

BRIDGING THE GAP BETWEEN POLICY STATEMENTS AND ENACTMENTS

The National Network of Partnership Schools (NNPS) at Johns Hopkins University was established in 1995 to close the gap between written policies with directives for family and community engagement and actions taken at the school, district, and state levels to engage all families in ways that contribute to student success in school. In NNPS, results of research on the structures and processes for organizing effective and equitable programs of partnership are translated into training, tools, and publications for educators and parents. Leaders who join NNPS are guided to use the research-based approaches to enact policy and improve practices so that all families are involved in their children's education in age- and grade-appropriate ways from preschool through high school.

In NNPS, each district must identify a leader for partnerships who facilitates and

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

encourages school-based ATPs to build their capacities to plan, implement, and continually improve their programs to create a welcoming school climate and support site-specific goals for student success. At the end of each academic year, district leaders and schools in NNPS complete *UPDATE* surveys to evaluate their work and progress. NNPS developed reliable scales and measures on these surveys to assess district and school progress on essential elements that affect the quality of partnership programs from one year to the next. The data are collected and analyzed for annual reports for NNPS members and for the public (Epstein and Ames 2016; Sheldon and Ames 2016).

PRIOR RESEARCH ON PARTNERSHIP PROGRAM DEVELOPMENT

Prior studies based on data collected separately from districts and from schools in NNPS explored factors that affected the quality of school-based and district-level partnership programs and practices. Research on schools found that those with well-functioning ATPs, strong support from principals, and positive ratings of the assistance received from district leaders were more likely than other schools to have higher-quality programs of family and community involvement (Hutchins and Sheldon 2013; Sanders and Sheldon 2009; Sheldon 2005, 2008; Van Voorhis and Sheldon 2004). Research on districts found that leaders who directly and actively facilitated school ATPs were more likely than other district leaders to report that their schools were making more progress in developing and improving programs of family and community involvement (Epstein 2008; Sanders 2008, 2009).

One study went further, studying schools nested within districts to understand the simultaneous efforts of district leaders and school teams to work together to improve school-based partnership programs (Epstein, Galindo, and Sheldon 2011). In that study, which combined independently collected school and district data, schools with at least three years of assistance from district leaders developed more advanced family engagement activities and engaged more families than did schools without consistent district support.

RESEARCH QUESTIONS

This study builds on the prior work with extended analyses of schools nested within districts to learn whether and how district assistance to school-based teams affects partnership program development and results for parents and students. We set four research questions:

1. How do *school factors* affect the implementation of:
   a. Basic structures and processes to implement school-based programs of family and community involvement?
   b. Advanced outreach activities to involve families who are typically uninvolved or "hard to reach"?
2. How do *district factors* affect schools' basic and advanced partnership programs?
3. How do basic and advanced partnership programs affect the percentage of parents who are good partners with the school in their children's education?
4. How do basic and advanced programs and the percentage of parents who are good partners with their schools affect school reports of students' average daily attendance?

Figure 1 presents the research model and hypothesized paths of influence to address the research questions. Analyses were conducted to learn whether and how school and district practices affected the quality of schools' basic partnership program implementation and advanced outreach to involve more families, and whether the quality of these programs measurably predicted the percentage of involved parents and students' average daily attendance.

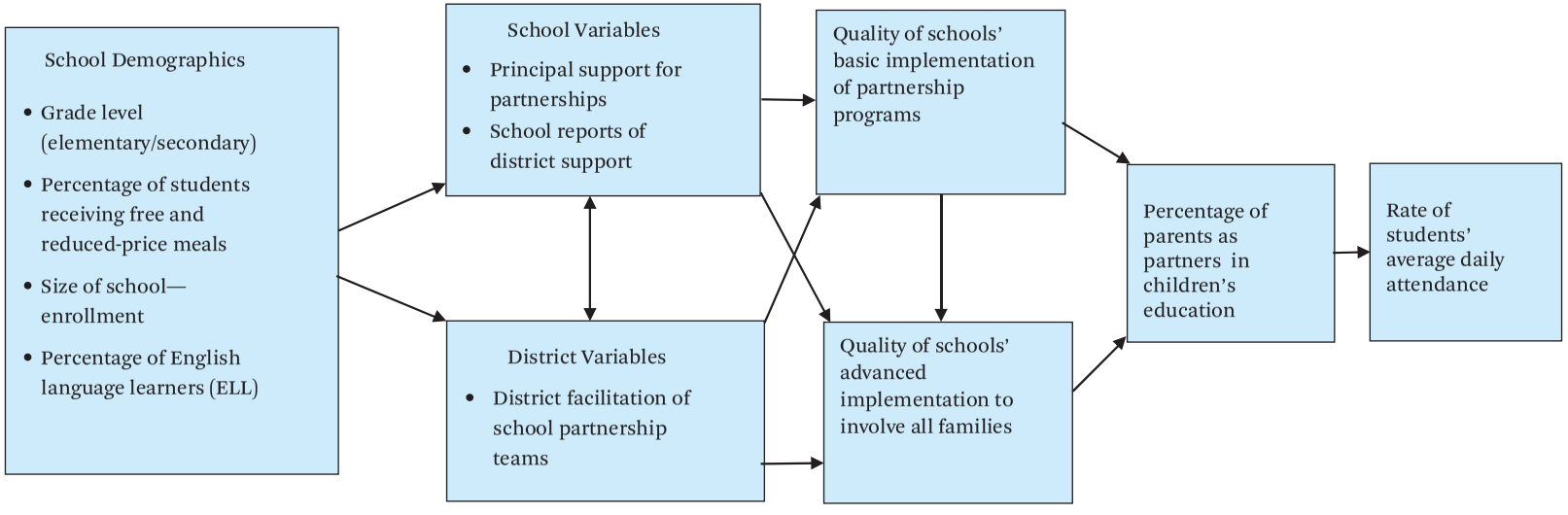
SAMPLE

Survey data were collected in 2014 from 347 schools in 21 districts that were members of NNPS at Johns Hopkins University. The schools were located in large urban (20.9 percent), small urban (32.2 percent), suburban (26.6 percent), and rural (20.3 percent) areas across the country. The majority of schools (67.7 percent) served elementary and K–8 students; the rest were middle and junior high schools (18.4 percent) and high schools (13.9 percent). A few schools with mixed-grade organizations were

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

Figure 1. Theoretical Effects Model: Connections Between School and District Leadership on the Quality of School-Based Partnership Programs, Parent Participation, and Rates of Student Attendance



Source: Authors' compilation.

excluded from the analyses. The sample closely matches the proportion of elementary and secondary schools in the nation as a whole (National Center for Education Statistics 2015).

Most schools (69.9 percent) received Title I funds. Within schools, on average, 67.8 percent of students were eligible for free or reduced-price lunches. About 39.9 percent of students were African American, 41.1 percent white, 14.9 percent Latino/Hispanic, and 2.6 percent Asian American, and a small percentage of students had other backgrounds. Across schools, an average of 5.1 languages other than English were spoken at home by students' families, ranging from only English to over 38 languages. The schools enrolled an average of 628 students, with school size ranging from under 50 to over 3,000 students. The variation in the demographics of this sample generally reflects the diversity in the nation's schools.

In addition to diverse demographics, districts and schools in NNPS varied in how long they had worked on research-based approaches to partnership program development, ranging from one to nineteen years. Some had joined recently, whereas others had become expert leaders on partnerships.[2]

Because all districts and schools join NNPS to obtain guidance and support to implement the structures and processes that enable them to organize effective partnership programs, the sample eliminates one kind of selection bias. However, each site enters the network with a unique history and works to improve its program at its own pace. In this way, the variations among sites make it possible to study whether and how district and school leaders' actions affect the quality of partnership programs.

MEASURES

Dependent Variables

Two measures of the quality of partnership program implementation at the school level are of interest in this study: basic program implementation and advanced program outreach. Two measures of the results of partnership programs extend prior studies: the percentage of involved parents and students' average daily attendance.

The Quality of Basic Program Implementation

This twelve-item scale (α = 0.92) measured whether and how well schools organized the basic components of a partnership program. The items were scored from 1 (did not do) to 4 (did very well) to reflect low-to-high implementation of structures and processes such as whether the school established an action team; wrote an action plan; implemented activities for six types of involvement; implemented involvement activities linked to school improvement goals for student success; evaluated the activities that were implemented; and conducted other basic organizational activities. Schools averaged 3.22 on this scale (standard deviation = 0.59), indicating that most teams viewed their work on the basics as "okay," with clear variation among the schools in the sample.

Advanced Implementation

This nine-item scale (α = 0.85) measured whether and how well a school implemented activities to solve challenges to engage all families, including those who are typically hard to reach, and to improve the implementation of activities for six types of involvement. The items were scored from 1 (not yet working on this challenge) to 4 (solved this challenge) and averaged to reflect low-to-high attention to engaging all students' families. For example, teams reported on whether they worked to get information from workshops to families who could not attend; communicated with families who did not speak English at home; involved major demographic groups of families in school decisions; recruited and trained volunteers; and addressed other challenges that might limit family and community involvement. Schools averaged 2.76 on this scale (standard deviation = 0.56), indicating that most were making fair-to-good progress in addressing challenges, whereas others were not yet focused on advanced implementations to engage uninvolved families.

Percentage of Involved Parents

This five-item scale (α = 0.82) measured school reports on the percentage of parents who at-

2. See the award-winning sites in the section on "Success Stories" at www.partnershipschools.org.

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

tended back-to-school nights, attended parent-teacher conferences, volunteered at school, monitored children's homework, and were considered "good partners" in children's education. The items ranged in six increments from 0 percent (none) to 100 percent (all) and were averaged to reflect low-to-high parental participation.

Students' Average Daily Attendance

This single item reported students' average daily attendance (ADA), which ranged from as 31 to 100 percent across schools.

Independent Variables

School Variables (Level 1): Principal's Support

This ten-item scale (α = 0.92) measured how strongly the principal supported the work of the ATP. Items were scored from 1 to 4 to indicate whether a principal never, seldom, often, or always provided time for team meetings; encouraged families to participate in involvement activities; encouraged teachers to work on partnerships; allocated funds for involvement activities; and offered other support for the school's program of family and community involvement. The average sum for this scale was 3.5 (standard deviation = 0.54), indicating that most principals were positive about teamwork for partnerships, but varied in the kind and extent of their support.

School Variables (Level 1): School Reports of District Support

This seven-item scale (α = 0.90) measured ATP reports on the extent and helpfulness of assistance from district Leaders for Partnership in program development. The items, which were scored 1 (no district support provided), 2 (not helpful), 3 (helpful), or 4 (very helpful), focused on district leaders' training teams for partnerships, funding, recognition, help with evaluations, ideas for best practices, and other assistance. The average school report on district assistance was 3.12 (standard deviation = 0.75), indicating that most teams acknowledged some support from district leaders, but varied in which facilitative actions they experienced and how helpful they rated these actions to have been.

District Variables (Level 2): District Facilitation

This seven-item scale (α = 0.89) measured the reports of district Leaders for Partnerships on whether and how well they facilitated school-based Action Teams for Partnerships to organize and improve their partnership programs. The items, which were scored 1 (not conducted), 2 (need to improve), 3 (okay), or 4 (conducted very well), focused on assistance to schools on basic actions to establish their partnership programs. This included help forming an Action Team for Partnerships, understanding and using the framework of six types of involvement, writing a One-Year Action Plan for Partnerships, collecting the schools' plans to follow work and progress, helping to develop a budget, meeting with the principal about teamwork and partnerships, and helping to evaluate work and progress. The average facilitation score was 3.05 (standard deviation = 0.80), indicating that most district leaders provided some direct assistance to schools in ways they deemed "okay," but varied in how well facilitation was progressing.

Background Measures

Analyses statistically controlled school demographic variables, including grade level (elementary = 0, secondary = 1), size of school enrollment, percentage of students receiving free or reduced-price lunch, and percentage of English language learners (ELL). In prior studies, grade level was a significant variable, whereas the poverty level of the school and students' language services were less consistently important for the development or quality of a partnership program (Epstein 2008; Epstein, Galindo, and Sheldon 2011; Sheldon 2008). The background variables remain of interest in studies of parental involvement and were included in all major analyses in this study.

ANALYSIS

Using Stata, we analyzed two-level hierarchical linear models (HLM) that permitted attention to the independent and simultaneous relation-

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

ships of key explanatory variables at the district and school levels.[3] HLM accounts for the fact that schools within a district are guided by the same policies and leaders and are likely to be more similar to one another in many ways than schools selected at random. HLM techniques, which adjust for the impact of clustered errors (Raudenbush and Bryk 2002), produce less-biased and more accurate estimates than do less rigorous methods for studying school (level 1) and district (level 2) effects on the quality of partnership program implementation and outreach.

To address this study's first two research questions, we analyzed a series of HLM models focused on two dependent variables—the quality of *basic program implementation* and the extent of *advanced outreach* to all families. First, we estimated a fully unconditional model with no predictors to identify within- and between-district variance for each outcome. Then we analyzed conditional models that tested the relationships of school-level variables and the district-level variable with each outcome.

In all models, the intercept was defined as random, slopes were fixed, and continuous measures were grand-mean-centered so that each level 1 coefficient represented the average effect across schools. Significant coefficients for level 1 variables indicate that school-based actions and experiences affected the quality of basic program implementation and advanced outreach to involve all families. Significant coefficients for the level 2 variables indicate that district leaders' assistance to ATPs independently affected the quality of schools' basic organization and the advanced outreach of their partnership programs.

To address the third and fourth research questions, we conducted ordinary least squares (OLS) regression analyses in step-wise progression to examine whether the school variables in the HLM analyses (principal and school reports of district support for partnerships) were associated with parents' participation in their children's education and students' average daily attendance. We also explored a constellation of district variables to see whether the duration (years) of districts' membership in NNPS was associated with leadership qualities and with district leaders' reports about their schools' progress on partnership program development.

RESULTS

The initial HLM unconditional analyses showed that 12.1 percent of the variance in basic program implementation and 11.4 percent of the variance in advanced outreach to involve all families were between districts. There was, then, enough between-district variance to explore the relationships between district characteristics and the two program outcome variables at the school level.

Basic Program Implementation

In table 1, school-level data in model 1 show that schools with a greater percentage of students receiving free or reduced-price meals reported lower levels of basic program implementation ($B = 0.003$, $p \leq 0.006$). Model 1 also shows that, with demographic characteristics statistically controlled, schools were more likely to implement a partnership program at a basic level when there was strong principal support for partnerships and when schools' ATPs reported receiving helpful support from their district leaders ($B = 0.466$, $p \leq 0.000$, and $B = 0.201$, $p \leq 0.000$, respectively). With poverty level, principal support, and schools' reports of district support taken into account, elementary and secondary schools in NNPS, large and small schools, and those with more or fewer ELLs did not differ significantly on the nature and extent of their basic program implementation.

Model 2 shows the two-level model for basic partnership program implementation that adds district leaders' reports of the extent and quality of their facilitation of schools' ATPs to the equation in place of the schools' reports of district support. The analysis confirms the results reported for model 1 indicating that schools had stronger basic partnership pro-

3. The authors thank Sol Bee Jung, graduate student at Johns Hopkins University's School of Education, for her assistance with these analyses.

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

Table 1. Multilevel Models Predicting Basic and Advanced Partnership Program Implementation

	Basic Implementation		Advanced Implementation	
	Model 1	Model 2	Model 3	Model 4
School-level predictors				
School level (elementary/secondary)	−0.075	−0.090	−0.078	−0.080
Total enrollment	0.050	−0.059	0.004	−0.007
Percent free or reduced-price meals	−0.003*	0.002	0.000	0.000
Percent English language learners (ELL)	0.002	0.002	0.002	0.001
Principal support	0.466***	0.550***	0.361***	0.465***
School reports of district support	0.201***	—	0.177***	—
District-level predictors				
Active facilitation of schools	—	0.108**	—	−0.017

Source: 2014 NNPS School *UPDATE* Survey and 2014 District *UPDATE* Surveys.
Notes: N = 290 schools in 21 districts. Unstandardized coefficients are reported.
*$p < .05$; **$p < .01$; ***$p < .001$

gram implementation when there was greater principal support for family and community engagement ($B = 0.550$, $p \leq 0.000$). Model 2 extends knowledge by showing that district leaders' reports of the nature and quality of their active facilitation of schools' partnerships programs were associated with schools' stronger implementation of basic partnership program elements ($B = 0.108$, $p \leq 0.003$). These findings spotlight the independent important impact of both school leadership and district leadership on the extent to which schools organize, plan, and implement efforts to engage families in their children's education.

Advanced Program Implementation

In table 1, models 3 and 4 report results of HLM analyses predicting advanced implementation of partnership programs that aimed to engage all students' families, especially those who were previously uninvolved or "hard to reach." In these models, the demographic characteristics of school populations are not significant explanatory variables. In model 3, principal support and schools' reports of district support are significantly and positively associated with more active outreach to engage all families ($B = 0.361$, $p \leq 0.000$, and $B = 0.177$, $p \leq .001$, respectively). In model 4, only principal support remains an important variable for meeting challenges to engage all families ($B = 0.465$, $p \leq 0.000$).

Results for Parents and Students

Table 2 uses OLS regression to extend the results of the HLM analyses by exploring the temporal nature of schools' partnership program development. Column 1 reproduces the school-level HLM analyses indicating that low-poverty schools reported stronger basic partnership program implementations. With demographic variables accounted for, schools with strong principal support for partnerships and school teams' reports of helpful district support were significantly associated with strong partnership programs.

In column 2, analyses indicate that in addition to principal support ($\beta = 0.140$, $p \leq 0.016$), the nature and quality of schools' basic program implementation was positively and significantly linked to advanced implementation to engage all students' families in productive ways ($\beta = 0.471$, $p \leq 0.000$).

Following potential influence paths, column 3 shows that elementary schools and low-poverty schools had greater percentages of parents engaged than did secondary schools ($\beta = -0.351$, $p \leq 0.000$, and $\beta = -0.463$, $p \leq 0.000$, respectively). Additionally, with all background variables statistically controlled, schools with more advanced program implementations had more parents engaged in their children's education ($\beta = 0.286$, $p \leq 0.000$).

Column 4 indicates that when more families were engaged, students attended school on

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

Table 2. OLS Regression Analyses of School-Level Predictors of Partnership Program Implementation, Parent Participation, and Student Average Daily Attendance

Variables	Basic Implementation	Advanced Implementation	Parent Participation	Average Daily Attendance
School level (elementary/secondary)	−0.067	−0.067	−0.351***	−0.043
Total enrollment	0.014	−0.077	0.024	0.076
Percent free or reduced-price meals	−0.162***	0.060	−0.463***	−0.083
Percent ELLs	0.073	0.017	0.069	−0.004
Principal support	0.443***	0.140*	0.049	−0.031
School report of district support	0.265***	0.084	−0.036	−0.033
Basic implementation		0.471***	−0.014	−0.037
Advanced implementation			0.286***	0.052
Parent participation				0.172*

Source: 2014 NNPS School *UPDATE* Survey.
Notes: N = 303 schools. Standardized coefficients are reported.
*p < .05; **p < .01; ***p < .001

a more regular basis, as reported in rates of average daily attendance ($\beta = 0.172$, $p \leq 0.023$). Table 2 suggests the stage-wise development of partnership programs. Plans and actions to implement a basic partnership program to address challenges to engage all families were likely to have taken place before advanced work and to have contributed to it. More parents in these schools became engaged and more engaged parents contributed to better student attendance.

The results reported in tables 1 and 2 suggest that programs of partnership can be strengthened and improved over time. Some schools do more than others to organize the structures and processes of a basic partnership program. The stronger the basic program, the more likely a school is to address challenges to engage parents who typically are under- or uninvolved, including fathers and parents who speak languages other than English.

Qualities of District Leadership

To delve deeper into the finding that district leadership matters for schools' programs and progress on partnerships, we used an independent measure from NNPS records that was separate from the survey data. District leaders had been members of NNPS for one to nineteen years, with an average of 6.8 years. Using this indicator for all districts that reported *UPDATE* data in 2014 (N = 39, including the twenty-one districts with four or more schools in the HLM sample), we explored whether the number of years in NNPS affected the nature and extent of district leadership and reports of whether schools were making good progress versus no or little progress in their programs of family and community engagement.[4]

Table 3 reports a constellation of informative correlates. Years in NNPS was not significantly related to general leadership qualities (for example, for establishing a district office for partnership program development, planning a budget, and writing work plans, $r = 0.127$ NS). This reflects the fact that districts joined NNPS with a common goal to get some assistance in improving their partnership programs. By contrast, years in NNPS was significantly correlated with major measures of how

4. In addition to the district facilitation scale explained in the section on measures and used in the HLM analyses in table 1, measures explored in table 3 include a fourteen-item *leadership* scale ($\alpha = 0.66$) on efforts to establish an office for partnerships; a seven-item *emphasis on evaluation* scale ($\alpha = 0.66$) on whether district leaders evaluated their own and schools' partnership programs; and a thirteen-item *collegial support* scale ($\alpha = 0.84$) on cooperation for partnership program development from district, school, family, and community members (Epstein and Ames 2016).

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

Table 3. Constellation of Correlates of Years of Membership in NNPS with District Leadership, Facilitation, Evaluation, Support, and Schools' Progress on Partnerships

	Leadership	Facilitation	Emphasis on Evaluation	Collegial Support	Percent Schools Making Good Progress
Duration of district effort on partnerships (years in NNPS)	0.127 (NS)	0.482**	0.373*	0. 395*	0.384*

Source: 2014 NNPS District *UPDATE* Survey.
Notes: N = 39 districts. Zero-order correlation coefficients are reported.
*$p < .05$; **$p < .01$

well district leaders facilitated school teams ($r = 0.483$, $p < 0.01$), emphasized the evaluation of progress on partnerships ($r = 0.373$, $p < 0.05$), and worked with colleagues on the partnership agenda ($r = 0.395$, $p < 0.05$). The duration variable also was related to district leaders' reports of the percentage of schools making good progress on partnership program development ($r = 0.384$, $p < 0.01$). The consistent pattern of correlates in table 3 suggests that NNPS plays a role in guiding district leaders to increasingly take action to assist their schools in implementing research-based approaches to program development with the goal of increasing the number and diversity of families who become engaged in their children's education.

SUMMARY AND DISCUSSION

We drew from organizational learning and leadership theories to study the development of school-based programs of family and community engagement. The study extended prior research with new evidence that school and district attention to partnership program development is associated with outreach to families, responses from parents, and results for students.

Independent reports from school-based ATPs and from district leaders identified a likely progression in program development. Results suggest that strong principal support and active guidance from district leaders—for example, in forming teams and writing plans—helped school teams establish their basic partnership programs. School teams with strong principal support and helpful district leaders progressed to more advanced implementation activities to engage families who often are hard to reach (for example, multicultural families, fathers, volunteers). Stronger school programs increased the prevalence of parents who were partners in education, and schools with more engaged families reported higher rates of students' average daily attendance. These well-organized, goal-linked partnership programs that increased the involvement of more and different parents helped improve student attendance as well as other academic and behavioral outcomes.

The interactions of school principals, partnership teams, and district Leaders for Partnerships reflected the assumptions of sociocultural and organizational learning theories and activated the content of the theory of overlapping spheres of influence for school, family, and community partnerships. The nonsurvey measure of district leaders' years of NNPS membership suggested that these leaders benefited over time from participating in the research-based network. Longer experience was linked to various leadership qualities—active facilitation of school teams, strong collegial support, attention to evaluation—and to reports that more schools were making good progress in developing programs of family and community engagement.

It should be noted that all schools in NNPS are guided by handbooks, tools, evaluation requirements, professional development workshops and webinars, and frequent communica-

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

tions to help them establish, implement, and continually improve their programs of family and community engagement. District leaders are guided to prepare and motivate school-based teams to organize and improve their school-based programs to engage students' families and community partners.

The variable "years in NNPS" reminds us that districts and schools join NNPS with different histories and experiences conducting family and community engagement activities. No school—whether an NNPS member or not—is at "ground zero" in connecting with families. All schools conduct at least a few traditional activities (for example, sending home report cards, having some parent-teacher conferences, distributing a school newsletter, conducting a favorite activity such as a spring fair or a family reading night). Most schools, however, do not plan, evaluate, and improve their programs and practices of partnerships in systematic ways. Districts and schools join NNPS to learn to work systematically to organize partnership programs as a component of good school organization and to engage all students' families—not just a few—as partners in children's education. Good plans, evaluations, and continuous improvements are needed by district leaders and school teams to change what may be haphazard or random family and community engagement activities (Weiss, Lopez, and Rosenberg 2010) into more effective and equitable partnership programs (Epstein et al. 2009).

This study supports and extends other studies that have linked family engagement with improved student attendance (Sheldon 2007; Sheldon and Jung, 2015). Student attendance is a leading indicator of student learning, achievement test scores, and graduation from high school (Balfanz et al. 2007; Mac Iver and Messel 2013). This study suggests that systematic efforts by district leaders and school teams to engage families in their children's education can help, albeit indirectly, to improve attendance.

Countless other studies, reviews, and meta-analyses have shown that goal-linked family engagement significantly improves student learning in specific academic subjects across the grades (Catsambis 2001; Fan and Chen 2001; Galindo and Sheldon 2012; Jeynes 2003, 2012; Sénéchal and LeFevre 2002; Van Voorhis 2011; Van Voorhis et al. 2013). This study extends knowledge by identifying a sequence of program development actions that help schools strengthen their programs to engage more and different families and contribute to results for students.

Tables 1 and 2 raise an interesting question about whether schools face challenges in engaging subgroups of families. Results show that the percentage of students who are English language learners is not significantly associated with schools' basic or advanced program implementations. Results also show that the measure of poverty—the percentage of students eligible for free or reduced-price meals—is a more serious challenge for programs of family engagement. There are typically fewer ELL students in schools—under 10 percent, except in a few states—than students in poverty, who make up about 48 percent of the student body in the average school in the United States (National Center for Education Statistics 2015) and over 65 percent, on average, in this sample.

Federal law (U.S. Department of Education 2015) requires educators to communicate with all families in languages they understand. Most districts and schools in NNPS are taking this regulation seriously and report that immigrant and refugee families are responsive to outreach activities (Epstein and Ames 2016; Sheldon and Ames 2016). Having relatively few ELL students and specific goals to communicate with families who speak languages other than English at home may help to explain why the ELL variable is not a significant determinant of schools' partnership programs.

By contrast, schools with a large number of students in families with low income often face many challenges and are themselves underresourced. Educators may be challenged to give attention to family and community engagement at the same time that they are working to improve academic, behavioral, and health-related programs for children in poverty. This is understood, but the most important coefficients in table 1 show that with all other variables statistically controlled, schools that serve diverse students in any community can organize basic and advanced partnership

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

programs if they have strong principal support for family engagement and helpful assistance from district leaders.

The results of this study are of interest because, across the country, districts and schools are becoming more diverse economically, racially, culturally, and linguistically (Fortuny and Hernandez 2010). Most educators still struggle to communicate with and engage all students' families at all grade levels (Markow and Pieters 2012). At the same time, most parents still struggle with remaining engaged in their children's education at each grade level to help them do their best in school (Harris and Robinson, this issue). Schools in this study served diverse populations of students and families, with the majority in high-poverty communities. It is important to note that the schools that did more to apply research-based structures and processes to their work on partnerships were more likely to conduct basic and advanced activities that engaged more families in their children's education, regardless of the families' demographics.[5]

LIMITATIONS

Although this study extends knowledge on partnership programs with new analyses of nested data from schools and their district leaders, it has limitations that need attention in future research. The limited number of districts in the sample seriously restricted the HLM analyses at the district level in table 1 to one key variable—district facilitation of schools. Future studies with larger samples of districts will be able to more fully explore the dynamics of district leaders' influence on schools' partnership programs. Table 3 introduced other measures of district leadership that may affect the quality of schools' programs of family and community engagement.

The data in this study were cross-sectional. It was possible to frame analyses with measures that represented early and later time periods to explore potential paths of influence from initial basic organization of programs to advanced outreach, to parents' responses, and to rates of student attendance. However, these were proxies for measures taken over time. The suggested step-wise progress in program development must be tested in future studies with longitudinal school, district, parent, and student data to confirm or correct the reported results. Future longitudinal studies of districts and their schools will permit more complex and better-specified multilevel models to understand the temporal order of actions in the development of district leadership and school programs of family and community engagement.

This study relied on survey data, which, like all research methods, have strengths and weaknesses. One strength, which permitted our HLM analyses, was having data from multiple reporters at the district and school levels. Another strength was having data at the school level on the percentage of engaged parents and rates of average daily student attendance, which extended our ability to focus on the results of partnership programs beyond prior studies. We also introduced an independent measure, years in NNPS, to explore how the duration of their efforts affected district leaders' support for and guidance of schools' partnership programs. Still, the reported results would be strengthened by nonsurvey data, such as site visits for independent observations of district leaders' work with schools and action team meetings, or in-depth interviews with purposeful samples of district leaders, school principals, teachers, parents, and students to confirm or refute the survey results.[6] Similarly, the survey data on students' average daily attendance would be stronger if official records on attendance were collected, and the scope of the study could also be enlarged with data on student achievement, behavior, and other indicators of students' success in school.

The study worked to minimize shared reporter bias and mono-source bias (Spector

5. See evidence of how these processes work in economically advantaged and disadvantaged districts and schools that serve families with diverse socioeconomic, cultural, racial, and linguistic backgrounds in Thomas et al. (2015) and in "Success Stories" at the NNPS website, www.partnershipschool.org.

6. See Sanders (2008, 2009) for prior qualitative studies on how district leaders' facilitative actions helped ATPs improve the quality of their partnership programs and engagement of families.

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

2014) with independent reports from multiple reporters—namely, district leaders and school-based ATPs. This permitted us to check whether school reports about district leaders' assistance matched the reports from the district leaders themselves. These features of the multilevel sample strengthened the credibility of results indicating the importance of district leadership for schools' progress on partnerships. However, although districts and schools in this study varied in their demographics and the duration of their work on partnerships, they all were active members of NNPS. Thus, they could carry a shared bias to emphasize their positive work on partnerships.

Future studies should guard against shared reporter bias by collecting multiple sources of information (for example, school records of parent participation in parent-teacher conferences, workshops, or other events) to double-check school and district reports on the extent of parents' participation. Comparisons of the patterns of program development in NNPS-member schools with non-NNPS sites will clarify whether research-based approaches result in more effective and more equitable partnership programs. Multiple reporters, multiple records, case and control situations, and useful artifacts will minimize the biases that are inherent in survey data and help to validate or refute the findings of this study.

CONCLUSION

At the time of the EEO report, family involvement was reported for and expected from those with high income and more formal education. This study suggests that family involvement is not a prescribed or "fixed" behavior, but a matter of school and district organization to promote equitable connections between the home, the school, and the community that benefit more—or all—students. Our results show that when schools and districts successfully plan and implement programs of partnerships, they can change old patterns that limit involvement to some parents and engage more and different families in children's education.

We started research on the design, development, and implementation of partnership programs in the early 1980s by recognizing the social fact repeated in EEO and other studies in the 1960s and1970s that children whose parents are involved in their education tend to do better in school. If families are so important in children's education, we asked, how can all schools engage all families in ways that increase student success in school? How can all schools engage those families with fewer educational and economic advantages in their children's education across the grades? And in schools that succeed in engaging these families, do the families respond and are there improvements in their children's attendance, achievement, and other indicators of success in school?

Although there is value in ongoing research on what parents do on their own to increase their children's learning and development, such studies are likely to continue to report that some parents are engaged and others are confused or waiting for guidance on how to be productively engaged in their children's education. We believe that it is critical to extend research on whether and how district and school leadership and programs of partnership increase the number and diversity of involved parents and whether and how their engagement affects student success in school. This study suggests that when effective and equitable school organizational practices are in place, more parents become involved and students benefit.

The results of this study have implications for policy and practice. Education policy is not an end in itself. In complex, multilevel systems, an official policy cannot be enacted without establishing a leadership structure, professional development, a budget, evaluations, incentives, and consequences. This study suggests that even though it may be necessary to have a policy on the books to encourage attention to parental involvement, it is not enough to tell schools or districts just to do something to engage families. Rather, it is critical to have knowledgeable leaders, research-based structures and processes, and strong content in place at the school and district levels to establish and improve plans and practices that promote more equitable and meaningful partnerships with all students' families. When policy is accompanied by factors that support enactment, more schools do more to engage all

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

families in goal-linked practices that may contribute to improved attendance and student success in school.

Since the time of the EEO report—and indeed, spurred by it—sociologists, psychologists, and education researchers have built a field of study that goes well beyond the "contest mentality" of the 1960s and 1970s. The question once phrased as a competition—which is more important, the family or the school?—is no longer useful and instead has become one about an ongoing research agenda: what are the contributions of collaborative relationships among schools, families, and the community to student learning and development?

There are some in research and in education who still hold the old view that family engagement is about the parents and that it is up to parents to get involved—or not—in their children's education. This view omits the concept of *partnership* and ignores the benefits of a strong agreement among educators, parents, and policy leaders that education is a shared responsibility of home, school, and community. NNPS aims to help districts and schools understand that partnerships are a means to help more students succeed and as such should be part of school organization—not external to the school. With this view, it is possible for districts and schools to fulfill the intent of written policies for parental involvement with effective actions that promote more equal educational opportunities for more students.

It is a social fact that families are important in children's lives. The new question that we pose for research, policy, and practice focuses on whether it is possible to change the distribution of involved families from a few economically advantaged families to all families, so that more students benefit from family support, encouragement, and participation in their education. This study suggests that this challenge is being met, incrementally, by districts and schools that apply research-based approaches to organize and continually improve programs and practices of family and community engagement as an essential component of school organization.

REFERENCES

Balfanz, Robert, Liza Herzog, and Douglas J. Mac Iver. 2007. "Preventing Student Disengagement and Keeping Students on the Graduation Path in Urban Middle-Grades Schools: Early Identification and Effective Interventions." *Educational Psychologist* 42(4): 223–35.

Bryk, Anthony S., Louis M. Gomez, Alicia Grunow, and Paul G. LeMahieu. 2015. *Learning to Improve: How America's Schools Can Get Better at Getting Better.* Cambridge, Mass.: Harvard Education Press.

Bryk, Anthony S., Penny B. Sebring, Elaine Allensworth, Stuart Luppescu, and John Q. Easton. 2010. *Organizing Schools for Improvement: Lessons from Chicago.* Chicago: University of Chicago Press.

Catsambis, Sophia. 2001. "Expanding Knowledge of Parental Involvement in Children's Secondary Education: Connections with High School Seniors' Academic Success." *Social Psychology of Education* 5(2): 149–77.

Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James M. McPartland, Alexander M. Mood, Frederick D. Weinfeld, and Robert L. York. 1966. *Equality of Educational Opportunity.* Washington: U.S. Department of Health, Education, and Welfare, Office of Education.

Cowan, Kristen Tosh. 2003. "Parental Involvement." In *The New Title I: The Changing Landscape of Accountability* by Kristen Tosh Cowan. Washington, D.C.: Thompson Publishing.

Elmore, Richard F. 2004. *School Reform from the Inside Out: Policy, Practice, and Performance.* Cambridge, Mass.: Harvard Education Publishing Group.

Epstein, Joyce L. 1987. "Toward a Theory of Family-School Connections: Teacher Practices and Parent Involvement." In *Social Intervention: Potential and Constraints,* edited by Klaus Hurrelmann, Franz-Xaver Kaufmann, and Friedrich L. Lösel. New York: DeGruyter.

———. 2008. "Research Meets Policy and Practice: How Are School Districts Addressing NCLB Requirements for Parental Involvement?" In *No Child Left Behind and the Reduction of the Achievement Gap: Sociological Perspectives on Federal Educational Policy,* edited by Alan R. Sadovnik, Jennifer O' Day, George Bohrnstedt, and Kathryn Borman. New York: Routledge.

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

———. 2011. *School, Family, and Community Partnerships: Preparing Educators and Improving Schools.* 2nd ed. Boulder, Colo.: Westview Press.

———. Forthcoming. "Creating a National Network on School, Family, and Community Partnerships: Multi-level Goals, Challenges, and Successes." In *Proceedings of the Projecto ESCXEL—Rede de Escolas de Excelência.* First International Conference, New University of Lisbon, Portugal (November 2014).

Epstein, Joyce L., and R. Tyler Ames. 2016. *Annual NNPS Report: 2015 District Data.* Baltimore: Johns Hopkins University, Center on School, Family, and Community Partnerships.

Epstein, Joyce L., Claudia Galindo, and Steven B. Sheldon. 2011. "Levels of Leadership: Effects of District and School Leaders on the Quality of School Programs of Family and Community Involvement." *Educational Administration Quarterly* 47(3): 462–95.

Epstein, Joyce L., and Steven B. Sheldon. 2006. "Moving Forward: Ideas for Research on School, Family, and Community Partnerships. In *SAGE Handbook for Research in Education: Engaging Ideas and Enriching Inquiry,* edited by Clifton F. Conrad and Ronald C. Serlin. Thousand Oaks, Calif.: Sage Publications.

Epstein, Joyce L., et al. 2009. *School, Family, and Community Partnerships: Your Handbook for Action.* 3rd ed. Thousand Oaks, Calif.: Corwin.

Fan, Xitao, and Michael Chen. 2001. "Parental Involvement and Students' Academic Achievement: A Meta-analysis." *Educational Psychology Review* 13(1): 1–22.

Fortuny, Karina, and Donald J. Hernandez. 2010. "Characteristics of Children of Immigrants." Paper presented to the conference "Young Children in Immigrant Families and the Path to Educational Success." Urban Institute, Washington, D.C. (June 28).

Galindo, Claudia, and Steven B. Sheldon. 2012. "School and Home Connections and Children's Kindergarten Achievement Gains: The Mediating Role of Family Involvement." *Early Childhood Research Quarterly* 27(1): 90–103.

Harris, Angel L., and Keith Robinson. 2016. "A New Framework for Understanding Parental Involvement: Setting the Stage for Academic Success." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(5). doi: 10.7758/RSF.2016.2.5.09.

Honig, Meredith I. 2006. "Street-Level Bureaucracy Revisited: Frontline District Central Office Administrators as Boundary Spanners in Education Policy Implementation." *Educational Evaluation and Policy Analysis* 28(4): 357–83.

———. 2008. "District Central Offices as Learning Organizations: How Sociocultural and Organizational Learning Theories Elaborate District Central Office Administrators' Participation in Teaching and Learning Improvement Efforts." *American Journal of Education* 114(4): 627–64.

Huber, George P. 1991. "Organizational Learning: The Contributing Processes and the Literatures." *Organizational Science* 2(1): 88–115.

Hutchins, Darcy J., and Steven B. Sheldon. 2013. *Annual Report: 2012 School Update Data.* Baltimore: Johns Hopkins University. Center on School, Family, and Community Partnerships.

Jeynes, William H. 2003. "A Meta-analysis: The Effects of Parental Involvement on Minority Children's Academic Achievement." *Education and Urban Society* 35(2): 202–18.

———. 2012. "A Meta-analysis of the Efficacy of Different Types of Parental Involvement Programs for Urban Students." *Urban Education* 47(4): 706–42.

Knapp, Michael S. 2008. "How Can Organizational and Sociocultural Learning Theories Shed Light on District Instructional Reform?" *American Journal of Education* 114(4): 521–39.

Leithwood, Kenneth, and Nona A. Prestine. 2002. "Unpacking the Challenges of Leadership at the School and District Level." In *The Educational Leadership Challenge: Redefining Leadership for the 21st Century,* edited by Joseph Murphy. Chicago: University of Chicago Press.

Louis, Karen Seashore. 2008. "Learning to Support Improvement: Next Steps for Research on District Practice." *American Journal of Education* 114(4): 681–89.

Mac Iver, Martha A., and Matthew Messel. 2013. "The ABCs of Keeping on Track to Graduation: Research Findings from Baltimore." *Journal of Education for Students Placed at Risk* 18(1): 50–67.

Markow, Dana, and Andrea Pieters. 2012. *The MetLife Survey of the American Teacher: Teachers, Parents, and the Economy.* New York: MetLife, Inc.

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

Mayrowetz, David. 2008. "Making Sense of Distributed Leadership: Exploring the Multiple Usages of the Concept in the Field." *Educational Administration Quarterly* 44(3): 424–35.

National Center for Education Statistics (NCES). 2015. "Fast Facts: Educational Institutions." *Digest of Educational Statistics 2013* (NCES 2015-011). Available at: https://nces.ed.gov/fastfacts/display.asp?id=84 (accessed October 12, 2015).

Raudenbush, Steven, and Anthony Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods.* Thousand Oaks, Calif.: Sage Publications.

Sanders, Mavis G. 2008. "Using Diverse Data to Develop and Sustain School, Family, and Community Partnerships: A District Case Study." *Education Management, Administration, and Leadership* 36(4): 530–45.

———. 2009. "Collaborating for Change: How an Urban School District and Community-Based Organization Supports and Sustains School, Family, and Community Partnerships." *Teachers College Record* 111(7): 1693–1712.

Sanders, Mavis G., and Steven B. Sheldon. 2009. *Principals Matter: A Guide to School, Family, and Community Partnerships.* Thousand Oaks, Calif.: Corwin Press.

Sénéchal, Monique, and Jo-Anne LeFevre. 2002. "Parental Involvement in the Development of Children's Reading Skill: A Five-Year Longitudinal Study." *Child Development* 73(2): 455–60.

Senge, Peter. 1990. *The Fifth Discipline: The Art and Practice of the Learning Organization.* New York: Doubleday.

Sheldon, Steven B. 2005. "Testing a Structural Equations Model of Partnership Program Implementation and Parent Involvement." *The Elementary School Journal* 106(5): 171–87.

———. 2007. "Improving Student Attendance with a School-Wide Approach to School-Family-Community Partnerships." *Journal of Educational Research* 100(5): 267–75.

———. 2008. "Getting Families Involved with NCLB: Factors Affecting Schools' Enactment of Federal Policy." In *No Child Left Behind and the Reduction of the Achievement Gap: Sociological Perspectives on Federal Educational Policy,* edited by Alan R. Sadovnik, Jennifer O' Day, George Bohrnstedt, and Kathryn Borman. New York: Routledge.

Sheldon, Steven B., and R. Tyler Ames. 2016. *Annual NNPS Report: 2014 School Data.* Baltimore: Johns Hopkins University, Center on School, Family, and Community Partnerships.

Sheldon, Steven B., and Sol Bee Jung. 2015. "Exploring How School-Family Partnerships Improve Attendance: Principals, Teachers, and Program Organization." Paper presented to the annual conference of the American Educational Researchers Association. Chicago (April).

Spector, Paul E. 2014. "Survey Design and Measure Development." In *Oxford Handbook of Quantitative Methods in Psychology,* edited by Todd D. Little. Oxford: Oxford University Press.

Spillane, James P., and John B. Diamond. 2007. *Distributed Leadership in Practice.* New York: Teachers College Press.

Stein, Mary Kay, and Cynthia E. Coburn. 2008. "Architectures for Learning: A Comparative Analysis of Two Urban School Districts." *American Journal of Education* 114(4): 583–626.

Supovitz, Jonathan A. 2006. *The Case for District-Based Reform.* Cambridge, Mass.: Harvard University Press.

Thomas, Brenda G., Marsha D. Greenfeld, Courtney R. Sender, and Joyce L. Epstein. 2015. *Promising Partnership Practices 2015.* Baltimore: Johns Hopkins University, National Network of Partnership Schools.

U.S. Department of Education. 2015. Elementary and Secondary Education Act (ESEA), also known as Every Student Succeeds Act (ESSA). Public Law 114-95. Washington: U.S. Government Printing Office.

Van Voorhis, Frances L. 2011. "Costs and Benefits of Family Involvement in Homework." *Journal of Advanced Academics* 22(2): 220–49.

Van Voorhis, Frances L., Michele Maier, Joyce L. Epstein, and Chrishana M. Lloyd. 2013. *The Impact of Family Involvement on the Education of Children Ages 3–8.* New York: MDRC.

Van Voorhis, Frances L., and Steven B. Sheldon. 2004. "Principals' Roles in the Development of U.S. Programs of School, Family, and Community Partnerships." *International Journal of Educational Research* 41(1): 55–70.

Weick, Karl E. 1995. *Sensemaking in Organizations.* Thousand Oaks, Calif.: Sage Publications.

Weiss, Heather, M. Elena Lopez, and Heidi Rosenberg. 2010. *Beyond Random Acts: Family, School,*

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

and Community Engagement as an Integral Part of Education Reform. Cambridge, Mass.: Harvard Family Research Program. Information available at: http://www.hfrp.org/publications-resources/browse-our-publications/beyond-random-acts-family-school-and-community-engagement-as-an-integral-part-of-education-reform (accessed October 6, 2015).

Wenger, Etienne. 1998. *Communities of Practice: Learning, Meaning, and Identity.* Cambridge: Cambridge University Press.

This content downloaded from 76.21.72.155 on Mon, 19 Nov 2018 19:23:14 UTC
All use subject to https://about.jstor.org/terms

Universal Journal of Educational Research 4(12A): 151-159, 2016 http://www.hrpub.org
DOI: 10.13189/ujer.2016.041319

Principals' and Teachers' Practices about Parent Involvement in Schooling[*i]

Mehmet Akif Erdener

Faculty of Necatibey Education, Balıkesir University, Turkey

Copyright©2016 by authors, all rights reserved. Authors agree that this article remains permanently open access under the terms of the Creative Commons Attribution License 4.0 International License

Abstract Parent involvement has an influence on children's educational engagement for all school levels. The objective of this study was to examine public school principals' and teachers' practices for improving parent involvement in schooling. This study used a mixed method to identify the school administrators' and teachers' perceptions about parent involvement in schooling. Data was collected from 64 public schools' administrators and teachers of elementary, middle and high schools. Six hundred and sixty one (55%) of surveys returned from 28 elementary schools, 27 middle schools, and 9 high schools. Data was analyzed with Confirmatory Factor Analysis (CFA) and Multivariate Analysis of Variance (MANOVA) using the Statistical Package for Social Sciences (SPSS). For qualitative part, phenomenological research method was used to investigate principals' and teachers' experiences to promote parent involvement. Findings indicated that school levels and teachers' education levels had a statistically significant impact on combined factors of parent involvement. No significant differences were found in parent involvement among principals and teachers who are from different major, gender, and seniority groups. This study showed that educator' attitudes is the most significant factor on parental involvement in schooling. Additionally, this study claimed when principals offer different time schedule for parent and teacher meetings, parent involvement is increased. One of parents is selected by Parent Teacher Organization for each grade so parents might use social media for all of meetings, offers, events, and announcements.

Keywords Parent Involvement, Teacher Attitudes, Schooling, Principals' Practices

1. Introduction

Educational researchers have been interested in how parental involvement affects on students' academic achievement and success [23]. Studies have shown that parent involvement increases students' academic achievement and self-esteem [12,25] while decreasing absenteeism and behavioral problems [21,33]. Children learn from their families, teachers, peers, relatives, part-time employers, and other adults in the community, so relationship among home, school, and community are very significant [17]. Michael et al., [33] said that if family and community involve in schooling, students' academic achievement and school attendance might increase, and it improves school programs and quality.

Epstein [17] clarified the following points: 1) many parents need more information from schools to be productively involved in their children's education; 2) learning at home, at school, and in the community is very important for students; 3) peers, families, and the organization of activities in schools and classrooms promote students achievement positively or negatively; and 4) community-based programs might be supported to increase home, school and the community collaboration. Principal, teachers, school council and parents who are accountable for their plans and work might design these activities [17]. Epstein conducted research over several decades using a model of parent involvement [14,15]. She categorized parent involvement into six major types: (1) parenting, (2) communicating, (3) volunteering, (4) learning at home, (5) decision making, and (6) collaborating with the community.

Parenting is to have information about student needs and interests, as well as families' responsibilities for child growth and development [20]. Communicating is to increase two way communications from home to school and from school to home in order to develop understanding and cooperation between school and home [20]. Volunteering is that parents share their time and talents to help schools, teachers, and students. They might assist schools in the library, playground, and cafeteria for after school activities, celebrations, sport activities and other events [20]. Learning at home activities guide parents to help their children for homework and prepare a study field at home [20]. Decision Making is that parents involve in the decision making process about school programs, activities, support students for post-secondary school selection [20]. Collaborating with the community is

to help cooperation among schools, families, organizations, community groups, and agencies [20].

Parents' demographic characteristics and parent involvement directly affect student achievement in schooling [1,7,8,10,13,19,27,38]. Rosenberg and Lopez [35] claimed that families support children's learning and growth from cradle to career. Many studies have investigated how parental involvement affects student achievement. In addition, many studies carried out that school administrators and teachers need to provide parent involvement.

However, investigations about educators practices and attitudes towards to parent to increase their involvement in schooling is minimal in Turkey. Erdener[24] said that the extant knowledge about cultural influences on Turkish parents' perceptions of their involvement in schooling is limited. In his previous study, parents said that teachers' attitudes affect their involvement, and teachers might guide parents how to involve their children schooling. Therefore, this study analyzed school administrators and teachers practices about parent involvement in schooling.

Many studies have shown that parent involvement in schooling affect students' academic achievement [16,17]. Determining the effective level of parent involvement may be associated with educators' attitudes. The primary purpose of this study was to investigate what public school principals' and teachers' practices for improving parent involvement in schooling in Turkey. The second purpose of this study was to explore which school level parent involvement is appropriate in schooling. Thirdly, this study examined the differences of teachers' attitudes among their major (administrators, early childhood and elementary teachers, science, and social science) about parent involvement in Turkey. Understanding principals' and teachers' perceptions about parent involvement may help to see the weaknesses and strengths of the relationship among home, school, and the community. Therefore, school administrators and teachers may more effectively promote parent involvement in schooling. For this purpose, the following problems and sub-problems were questioned:

- What is the difference among principals' and teachers' perceptions when grouped their education level, seniority, major, gender and school level on Epstein's six factors of parent involvement as described (parenting, communicating, volunteering, learning at home, decision making, and collaborating with the community) in public schools?
- What major factors contributed or limited to the success of your school's parental involvement?
- What are the practices of principals and teacher about parent involvement?

One of the key components for students' academic success is parent involvement in education [24]. Many studies claimed that there is a positive correlation between parental involvement and student achievement [17,31,36]. The significance of this study was to examine the perceptions of school principals and teachers regarding effective parental involvement in public schools based on Epstein's [16] six types of parental involvement. Therefore, this study's results may indicate more effective means of parental involvement for practices of principal and teachers in schooling progress. The findings of this study provided significant information that will extend knowledge about the phenomenon of parent involvement in Turkey.

Bronfenbrenner's Bioecoloogical theory and Epstein's Overlapping Spheres theory drove this study. Bronfenbrenner [3] stated that the changing environment affects human development. Bioecological Theory [3,4] included five systems: 1) Microsystems, 2) Mesosystem, 3) Exosystem, 4) Macrosystem, and 5) Chronosystem [3,4]. The child is at the center of the systems and each system directly and indirectly affects the learning of individuals. The relationship existing between the family and the school is a powerful factor affecting the capacity of a child to learn in the classroom [4]. One of the processes of child development in social and educational environments is parent involvement. Furthermore, Epstein's [18] overlapping spheres of influence model demonstrates the relationships of the school, family, and community about child development. Epstein [18] said that the child is at the center as the focus within the family, school, and community. Child has interactions with his/her families, schools, and the communities [16]. Families, schools, and the communities influence a child's academic achievement and success[16], and each component of the external structure of the overlapping spheres also might act and interact with others so these actions influence student learning and development [18].

2. Method

2.1. Instrument

This research study used a mixed method to identify the school administrators' and teachers' perceptions about parent involvement in schooling. The researcher adapted a survey that is developed by Epstein et al. ([20], p. 324-329). The survey included Epstein's six categories of parental involvement with an additional category of the school administrators' and teachers' expectations. The survey contained 51 parent involvement statements distributed among six categories of parental involvement. The survey questions were based on 5-point Likert scale for perceptions ranging from a low score of 1 (*never*) to a high score of 5 (*frequently*). Additionally, the instrument included a section on participants' demographic information. This section helped the researcher investigate the differences between teachers' school level, majors, seniority, education level, and gender and their perceptions about parent involvement as measured by Epstein's model of parent involvement.

2.2. Participants

The targeted populations in this study were public school

administrators and teachers of elementary, middle and high schools in Turkey. One thousands and two hundred paper copies of survey were sent to 64 public schools. Six hundred and sixty one (55%) of surveys returned to the researcher. Two hundred thirty three (35.2%) participants were from 28 elementary schools, two hundred sixty (39.3%) participants were from 27 middle schools, and one hundred sixty eight (25.4%) participants were from 9 high schools in the city of Bursa, Turkey. Participants were not required to provide any identifying information. The anonymity of the subjects strengthens the validity of the instrument and the study. The means and standard deviations of participants demographic are represented in Table 1.

In this study, there were three hundred and forty two (51.7%) male participants and three hundred and five (46.1) female participants. Nevertheless, fourteen (2.1%) participants did not specify their gender. Sixty four (9.7%) participants had some college degrees, 567 (85.8%) participants had bachelor's degrees, and 30 (4.5%) participants had graduate degrees. One hundred sixty three (24.7%) participants have taught between 0-5 years; one hundred and twenty (18.2%) participants have taught between 5-10 years; one hundred thirty one (19.8%) participants have taught between 10-20 years; one hundred and fifteen (17.4%) participants have taught between 20-25 years; and one hundred and thirteen (17.1%) participants have taught between 26 and more years. Nineteen (2.9%) participants did not state about their seniority. Seventy seven (11.6%) participants were school administrators; one hundred and twenty four (18.8%) participants were social science teachers; two hundred and fifteen (32.5%) participants were early childhood and elementary teachers; one hundred seven (16.2%) participants were science teachers; and one hundred twenty seven (19.2%) participants were teaching other courses. Nevertheless, eleven (1.7%) participants did not explain their majors.

2.3. Data Analysis

After surveys were returned, qualitative data analysis followed. Qualitative data were analyzed using the Lisrel 8.5 to conduct Confirmatory Factor Analysis (CFA) and using the Statistical Package for Social Sciences (SPSS) [37] to conduct Multivariate Analysis of Variance (MANOVA). Factor analysis provided the researcher with the ability to reduce and cluster the complexity of the variables, so it was easier for the researcher to investigate the question [30,32]. Mertler and Vannaatta [32] said that confirmatory factor analysis is usually applied to test a theory about latent processes that might occur among variables. As such, Davidov and Beuckelaer [11] suggested that the researcher needed to evaluate the reliability of the survey instrument. There were six dependent and five independent variables in this study, so MANOVA included many dependent variables in the same analysis [26] and incorporated two or more dependent variables in the same analysis with nominal and ordinal independent variables [32]. For qualitative part, phenomenological research method was used to investigate principals' and teachers' experiences to promote parent involvement. Phenomenological research emphasizes a focus on participants' subjective experiences and interpretations about phenomena[6]. The authors clarified that primary goal of phenomenological research method is to return to embodied, and experiential meanings of participants.

3. Results

The data were collected from 661 elementary, middle and high school teachers in Turkey. Confirmatory factor analysis was to confirm Epstein's survey that explains the six types of parental involvement factors by using LISREL 8.5 that is the analytical computer program. Cronbach's alpha was used to check the reliability of the study; the reliability was 0.968 of 51 items. After Confirmatory Factor Analysis was conducted, the factors were determined according to Epstein's typology labels. Factor 1 was labeled Parenting, and contained seven items. The reliability of the Parenting factor was 0.841 of 7 items by using Cronbach's alpha. Factor 2 was labeled the Communicating, and contained fourteen items. The reliability of Communicating factor was 0.880 of 14 items. Factor 3 was labeled the Volunteering, and contained eight items. The reliability of the Volunteering factor was 0.890 of 8 items. Factor 4 was labeled the Learning at Home and contained seven items. The reliability of the Learning at Home factor was 0.898 of 7 items. Factor 5 was labeled the Decision Making, and contained eleven items. The reliability of the Decision Making factor was 0.891 of 11 items. The last factor was labeled the Collaborating with the Community and contained four items. The reliability of the Collaborating with the Community factor was 0.880 of 4 items.

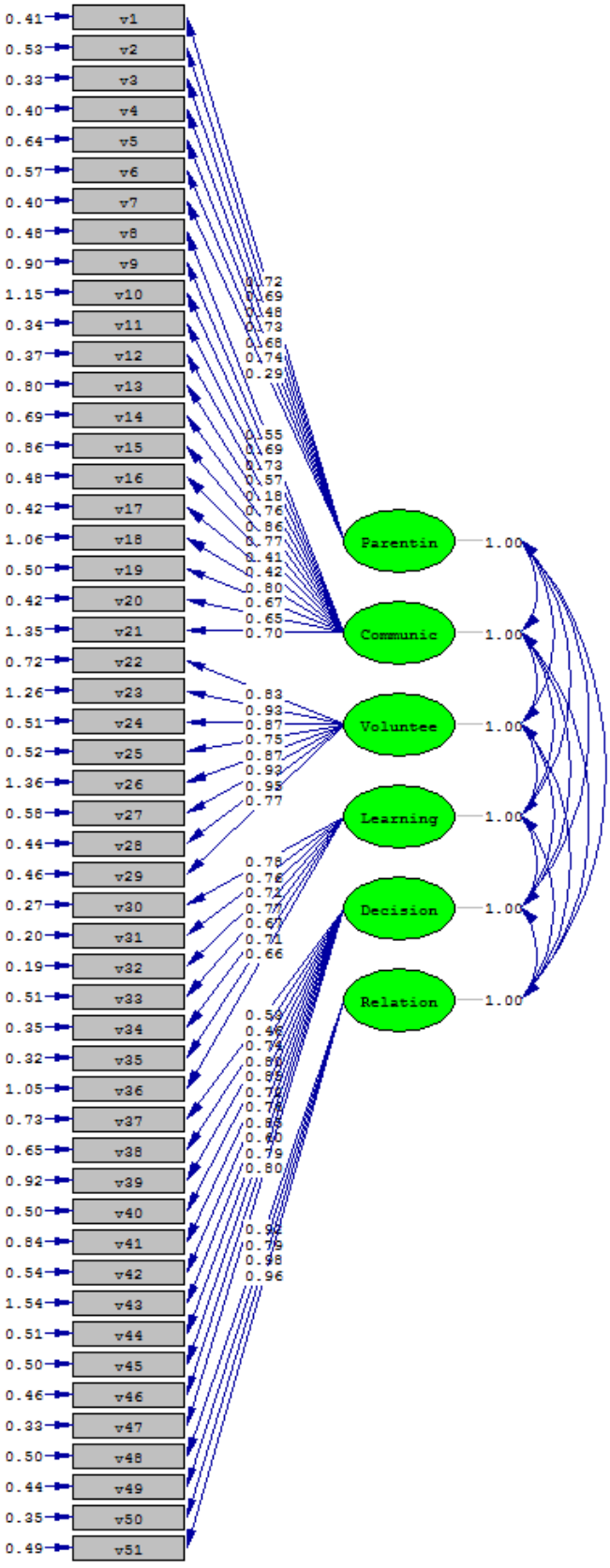
Büyüköztürk, Şekercioğlu and Çokluk [5] described that factor analysis patterns factors by using existing model and variables. There are different good fit indexes about the decision of the good fit indexes of models. For this indexes, the values are excellent and acceptable ([2,29,39]). The figure of the survey's confirmatory factor analysis is shown in Figure 1 and the results of the survey's confirmatory factor analysis are shown in Table 2.

Table 1. Participants' Demographic

		School	Major	Gender	Education Level	Seniority
N	Valid	661	650	647	661	642
	Missing	0	11	14	0	19
Mean		1.90	3.13	1.47	1.95	2.84
SE of Mean		.030	.050	.020	.015	.057
Median		2.00	3.00	1.00	2.00	3.00
Mode		2	3	1	2	1
SD		.773	1.264	.500	.374	1.436
Variance		.598	1.597	.250	.140	2.062
Minimum		1	1	1	1	1
Maximum		3	5	2	3	5
Sum		1257	2033	952	1288	1821

Table 2. Confirmatory Factor Analysis Good Fit Indexes

	Good fit Values	Results	Decision
χ^2		3265.97	
sd		1139	
χ^2/sd	<3= Excellent	2.867	Accepted
GFI	>.95= Excellent	0.84	Acceptable
AGFI	>.90 (AGFI).95< = Good fit	0.81	Acceptable
CFI	>.95= Excellent	0.99	Accepted
NFI	>.95= Excellent	0.98	Accepted
NNFI	>.95= Excellent	0.99	Accepted
SRMR	<.05= Excellent	0.057	Accepted
RMR	>.05=RMR<.081= Good fit	0.067	Accepted
RMSEA	<.05= Excellent	0.053	Accepted
RFI	>.95= Excellent	0.98	Accepted
IFI	>.95=Excellent	0.99	Accepted



Chi-Square=3265.97, df=1139 , P-value=0.00000 , RMSEA=0.053

Figure 1. The Path Diagram of Parent Involvement Model

Confirmatory Factor Analysis (CFA) presented that the results of the values for good fit indexes of parent involvement survey were excellent or acceptable. According to the good fit indexes, the model is practical. Then, the full Multivariate Analysis of Variance (MANOVA) was conducted. The output interpretations begin with the results of Box's test [32]. The results of the Box's test of equality of variance, F (588, 15479.3) = 1.158, p = 0.006. The Box's test was significant and the groups were unequal, so the Pillai's Trace was chosen. A violation of this assumption of homoscedasticity will not prove fatal to analysis; despite this, a more robust multivariate test statistics, Pillai's Trace, was used to interpret the multivariate results [32].

The results of the multivariate test of the perceptions of school administrators and teachers about parent involvement indicated that school level [Pillai's Trace = 0.054, F (12, 994) = 2.316, p = 0.006, partial η2 = 0.027] is significantly affecting the combined dependent variables of Parenting, Communicating, Volunteering, Learning at Home, Decision-Making, and Collaborating with the Community. Education level of participants [Pillai's Trace = 0.043, F (12, 994) = 1.810, p = 0.042, partial η2 = 0.021] is significantly affecting the combined dependent variables of Parenting, Communicating, Volunteering, Learning at Home, Decision-Making, and Collaborating with the Community. Education level by Gender interaction [Pillai's Trace = 0.06, F (12, 994) = 2.541, p = 0.003, partial η2 = 0.030] is significantly affecting the combined dependent variables of Parent Involvement. Education level by Seniority interaction [Pillai's Trace = 0.087, F (30, 2500) = 1.473, p = 0.047, partial η2 = 0.017] is significantly affecting the combined dependent variables of Parent Involvement. Major by Gender by Seniority interaction [Pillai's Trace = 0.190, F (66, 3006) = 1.489, p = 0.007, partial η2 = 0.032] is significantly affecting the combined dependent variables of Parent Involvement. Major, Gender, and Seniority do not statistically affect the combined dependent variables of Parenting, Communicating, Volunteering, Learning at Home, Decision-Making, and Collaborating with the Community. The results of multivariate test of the perceptions of school administrators and teachers about parent involvement are presented in Table 3.

A Univariate Analysis of Variance (ANOVA) was conducted as a follow-up test. Education by Gender interaction F (5, 501) = 4.483, p = 0.012, significantly affects the Parenting. A post-hoc analysis was conducted using the Tukey procedure, to determine where the differences were within the parent involvement factors for education level and school level of public school administrators and teachers. Post-hoc test compare significant differences between the high school level, middle school level and elementary school level on parenting, communicating, volunteering, learning at home, decision-making and the community collaboration. There are no significant differences between the high school level, middle school level and elementary school level on parenting, and decision-making. Nevertheless, communicating of parent involvement scores is higher on high school administrators and teachers than middle school and elementary school administrators and teachers. Moreover, volunteering and learning at home of parent involvement scores is higher on elementary school administrators and teachers than middle school administrators and teachers and also volunteering is higher on middle school administrators and teachers than high school administrators and teachers. Furthermore, the post hoc comparison yielded a significant difference between high school level, middle school level and elementary school level, with the community collaboration scoring higher on high school administrators and teachers than middle school and elementary school administrators and teachers.

There are no significant differences between the education level of school administrators and teachers on parenting, and learning at home. In addition, the post hoc comparison yielded a significant difference between the education level of school administrators and teachers, with the communicating, volunteering, and decision-making scores higher on school administrators and teachers who have some college degrees than school administrators and teachers who have Bachelor's degrees. Furthermore, communicating, and the collaboration with community of parent involvement scores is higher on school administrators and teachers who have Master's degrees than school administrators and teachers who have Bachelor's degrees.

Table 3. Multivariate Test

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[d]
Intercept	Pillai's Trace	.865	530.28	6.000	496.000	.000	.865	3181.679	1.000
School	Pillai's Trace	.054	2.316	12.000	994.000	.006	.027	27.795	.963
Major	Pillai's Trace	.055	1.160	24.000	1996.000	.268	.014	27.842	.895
Gender	Pillai's Trace	.009	.728	6.000	496.000	.627	.009	4.367	.290
Ed. Level	Pillai's Trace	.043	1.810	12.000	994.000	.042	.021	21.724	.894
Seniority	Pillai's Trace	.058	1.230	24.000	1996.000	.203	.015	29.523	.917
Gender * Ed. Level	Pillai's Trace	.060	2.541	12.000	994.000	.003	.030	30.490	.978
Seniority * Ed. Level	Pillai's Trace	.087	1.473	30.000	2500.000	.047	.017	44.176	.986
Major * Gender * Seniority	Pillai's Trace	.190	1.489	66.000	3006.000	.007	.032	98.286	1.000

Note. Computed using alpha = .05

4. Conclusion and Discussion

After Confirmatory Factor Analysis (CFA) was applied, the six factors of parent involvement were confirmed as (1) parenting, (2) communicating (3) volunteering (4) learning at home (5) decision making, and (6) collaborating with the community. Epstein et al.,[20] described the parent involvement factors as the following: parenting is an awareness of every step of child growth and development so parents might be supported with more information from teachers about parenting. In addition, parent should attend school activities as a volunteer to increase relationship with teachers and principals so parents might be a part of the decision-making process for school programs, events and their children career plans. Moreover, teachers might support parents to be aware of their child's talents, skills, and abilities. In this manner, parents monitoring and discussing the schooling process at home with their children.

The six factors were used as dependent variables to conduct the Multivariate Analysis of Variance (MANOVA). The findings indicated that school level and administrators' and teachers' education level significantly affected the combined parent involvement factors of Parenting, Communicating, Volunteering, Learning at Home, Decision-Making, and Collaborating with the community. On the other hand, major, gender and seniority of administrators and teachers did not significantly affect the combined dependent variables of Parenting, Communicating, Volunteering, Learning at Home, Decision-Making, and Collaborating with the community. Child's cognitive development and academic achievement are affected by parents[28].

The interaction between education level and gender significantly affected the combined dependent variables of parent involvement. Also, the interaction between seniority and education level significantly affected the combined dependent variables of parent involvement. In addition, the interaction among major, gender and seniority significantly affected the combined dependent variables of parent involvement. Moreover, the results of the follow-up test, the Univariate Analysis of Variance (ANOVA), indicated that the interaction between gender and education level of independent variables affected the Parenting factor. The profile of plot is also going be presented about the significant the interaction between gender and education level on parenting factor. According to the plot, female teachers who have some college degrees and male teachers who have masters and doctoral degrees are more likely effective on parenting of parent involvement factors.

According to Creswell [9], qualitative research method focuses on an essential phenomenon and is established via participants' perceptions. Yıldırım and Şimşek [40] said that data analysis in phenomenological study represent participants' background and experiences. In this study, quantitative questionary was not enough to explore the perspectives of principals and teachers about parent involvement, so it was supported by qualitative part with phenomenological research questions. According to principals and teachers, the primary factors which contribute parent involvement are parent education level, parents' perspectives about schooling, students' choice of profession, teachers' attitudes and willingness about collaboration with family, communication, and social & cultural activities. In addition, participants also emphasized that student achievement, community where family lives, child growth and development, well-educated teachers, communication among family members, income and school community are other factors to increase parent involvement in schooling. Parent education level is highly stressed by principals and teachers. Erdener [24] carried a research out about parent involvement by collecting data from 578 parents and found that educated parents and society affect student achievement because these groups of people have better communication with teachers and principals. They were attending school activities and events. Educated parents are involved in the decision making process about their children's post-secondary education plans, career plans [24].

On the other hand, principals and teachers said that the primary factors which limited parent involvement are low income, parent education level, indifference about schooling, family disturbance, unsuccessful students, teachers' attitudes, heavy workloads of both parents or single parents, and Turkish education system. Moreover, participants explained that intolerance, prejudice of families about school and teachers, social media, and bullying are other factors to limit parent involvement in schooling. Teachers said that income is most important factor for families, because schools budgets are not enough and they need family support to increase education quality. Low income families have to work lots of hours, so they are not involved social events at school. They have not even attended parent-teacher meeting yet. The finding is consistent with previous studies indicated that parents who work in minimum wage jobs and long hours might not be involved in many school activities because they lack the time [7,25,27,34]. Turkish education system is changed a few times and some educators think that the changes are not planned very well. The Ministry of National Education is the biggest government department which has more than a million employees and 18 million students. For this reason, the education system might require professional development for the school administrators and teachers about increasing parent involvement in their children's schooling.

Finally, principals and teachers said that they make effort to increase parent involvement. Parent-teacher meetings, home visiting, communication, guide families about schooling and social-cultural activities like reading, drama, celebrating national days, tea hours, and festivals are arranged by schools. Principals sometimes use different time schedule to increase parent attendance. Because, the attendance rate usually is not higher than fifty percent (50%). Educators stressed parents' guidance to monitor students' activities, growth and development. By the way, teachers make student coaching which are described as to guide

individual learning methods, abilities and skills for each student. In addition, reading activities with parents and students together help to promote parents willingness for schooling process and increase communication among teacher, parent and student. Principal especially remark the importance of seminars about home, school and the community collaboration.

Note

*The abstract of this paper was presented at 2nd International Conference on Lifelong Learning and Leadership for All (ICLEL-16), in Liepaja on July, 21-23, 2016.

REFERENCES

[1] Baroody, A., & Dobbs-Oates, J. (2009). Child and parent characteristics, parental expectations, and child behaviors related to preschool children's interest in literacy. *Early Child Development and Care, 181*(3), 345–359.

[2] Bollen, K. A. & Curran, P. J. (2006). *Latent Curve Models: A Structural Equation Perspective.* New Jersey, NJ: Wiley-Interscience.

[3] Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32,* 513 - 531.

[4] Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22*(6)*,* 723 - 742.

[5] Büyüköztürk, Ş., Şekercioğlu, G. & Çokluk, O. (2014). *Sosyal Bilimler İçin Çok Değişkenli İstatistik: SPSS ve LISREL Uygulamaları.* Ankara: Pegem Akademi Yay.

[6] Büyüköztürk, Ş., Çakmak, E., Akgün, Ö., Karadeniz, Ş. & Demirel, F. (2015). *Bilimsel Araştırma Yöntemleri* (17. Baskı). Ankara:Pegem Yayınları

[7] Cooper, C. E. (2010). Family poverty, school-based parental involvement, and policy-focused protective factors in kindergarten. *Early Childhood Research Quarterly*, *25*(4), 480-492.

[8] Cooper, C. E., Crosnoe, R., Suizzo, M. A., & Pituch, K. A. (2010). Poverty, race, and parental involvement during the transition to elementary school. *Journal of Family Issues*, *31*(7), 859-883. doi: 10.1177/0192513X09351515

[9] Creswell, J. W., (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4.th ed.). Los Angeles, SAGE Publications.

[10] Crosnoe, R. (2001). Academic orientation and parental involvement in education during high school. *Sociology of Education, 74*, 210-230.

[11] Davidov, E., & Beuckelaer, A. D. (2010). How harmful are survey translations? A test with Schwartz's human values instrument. *International Journal of Public Opinion Research, 22*(4), 487-510.

[12] Desimone, L. (1999). Linking parent involvement with student achievement: Do race and income matter? *The Journal of Educational Research*, *93*(1), 11-30.

[13] Englund, M. M., Luckner, A. E., Whaley, G. J. L., & Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology, 96*, 723-730.

[14] Epstein, J.L. (1985). Home and school connections in schools of the future: Implications of research on parent involvement, *Peabody Journal of Education, 62* (2), 18-41. doi: http://dx.doi.org/10.1080/01619568509538471

[15] Epstein, J. L. (1987). Toward a theory of family-school connections: Teacher practices and parent involvement. In K. Hurrelmann, F. Kaufmann, and F. Lösel (Eds.). *Social intervention: Potential and constraints*, (pp. 121-136). New York: Walter de Gruyter.

[16] Epstein, J. L. (1995). School/family/community partnerships: Caring for the children we share. *The Phi Delta Kappan*, *76*(9), 701-712.

[17] Epstein, J. L. (2001). Building bridges of home, school, and community: The importance of design. *Journal of Education for Students Placed at Risk*, *6*(1/2), 161-168.

[18] Epstein, J. L. (2010). *School, family, and community partnerships: Preparing educators and improving schools* (2nd ed.). Boulder, CO: Westview Press.

[19] Epstein, J. L., & Sanders, M. G. (2002). Family, school, and community partnerships. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 5. Practical issues in parenting* (pp. 407-437). Mahwah, NJ: Lawrence Erlbaum.

[20] Epstein, J. L., Sanders, M. G., Sheldon, S. B., Simon, B. S., Salinas, K., Jansorn, N., Van Voorhis, F. L., Martin, C. S., & Williams, K. J. (2009). *School, family, and community partnerships: Your handbook for action (3rd ed.)*. Thousand Oaks, CA: Corwin Press.

[21] Epstein, J. L., & Sheldon, S. B. (2002a). Improving student behavior and school discipline with family and community involvement**.** *Education and Urban Society, 35*(4), 4-26.

[22] Epstein, J. L., & Sheldon, S. B. (2002b). Present and accounted for: Improving student attendance through family and community involvement. *Journal of Educational Research, 95*(5), 308-318.

[23] Erdener, M. A. (2013). *Turkish Parents Perceptions of Their Involvement in Schooling.* Retrieved from: http://tigerprints.clemson.edu/all_dissertations. (Paper 1153)

[24] Erdener, M. A. (2014). The Factors Which Contribute or Limit Parent Involvement in Schooling. *NWSA-Education Sciences, 9*(1), 36-47.

[25] Erdoğan, Ç., & Demirkasımoğlu, N. (2010). Ailelerin eğitim sürecine katılımına ilişkin öğretmen ve yönetici görüşleri [Teachers' and school administrators' views of parent involvement in education process]. *Kuram ve Uygulamada Eğitim Yönetimi [Educational Administration: Theory and Practice], 16*(3), 399-431.

[26] Field, A. (2009). *Discovering statistics using SPSS.* Thousand Oaks, CA: Sage.

[27] Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development, 75*(5), 1491-1509.

[28] Hortacsu, N. (1995). Parents' education levels, parents' beliefs, and child outcomes. *The Journal of Genetic Psychology, 156*(3), 373-383.

[29] Hu, L. T. & Bentler, P. M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. *Structural Equation Modeling, 6* (1), 1-55. DOI: 10.1080/10705519909540118.

[30] Huck, S. W. (2011). *Reading statistics and research* (6th ed.). Boston, MA: Pearson.

[31] Jeynes, W. H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education*, *40*(3), 237-269. doi:10.1177/0042085905274540

[32] Mertler, C. A., & Vannaatta, R. A. (2010). *Advanced and multivariate statistical methods: Practical application and interpretation* (4th ed.). Glendale, CA: Pyrczak Publishing.

[33] Michael, S., Dittus, P., & Epstein, J. (2007). Family and community involvement in schools: Results from the school health policies and programs study 2006. *Journal of School Health*, *77*(8), 567-587. doi:10.1111/j.1746-1561.2007.00236.x

[34] Reynolds, A. J. (1991). Comparing measures of parental involvement and their effects on academic achievement. *Early Childhood Research Quarterly, 7*(3), 441-462.

[35] Rosenberg, H., & Lopez, M. E. (2010, April). Family engagement from cradle to career. *Family Involvement Network of Educators (FINE) Newsletter, 2*(1). Retrieved from http://www.hfrp.org/publications-resources/browse-our-publications/family-engagement-from-cradle-to-career

[36] Shaw, C. A. (2008). *A study of the relationship of parental involvement to student achievement in a Pennsylvania career and technology center*. (Unpublished doctoral dissertation). The Pennsylvania State University. State College, PA.

[37] SPSS Inc. (2011). SPSS Base 20.0 for Windows. IBM inc., Chicago, IL.

[38] Suizzo, M.-A., & Soon, K. (2006). Parental academic socialization: Effects of home-based parental involvement on locus of control across U.S. ethnic groups. *Educational Psychology, 26*, 827-846.

[39] Tabachnick, B. G. & Fidell, L. S., (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson/ Allyn & Bacon

[40] Yıldırım, A. ve Şimşek, H. (2005). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri* (5. Baskı). Ankara: Seçkin Yayıncılık.

[i] The study is supported by Balikesir University: *BAP Project No: 2015/001*



ISSN: 2148-9955

International Journal of Research in Education and Science (IJRES)

www.ijres.net

Parents' Perceptions of Their Involvement in Schooling*

Mehmet Akif Erdener[1], Robert C. Knoeppel[2]
[1]Balıkesir University
[2]Clemson University

To cite this article:

Erdener, M.A., & Knoeppel, R.C. (2018). Parents' perceptions of their involvement in schooling. *International Journal of Research in Education and Science (IJRES), 4*(1), 1-13. DOI:10.21890/ijres.369197

This article may be used for research, teaching, and private study purposes.

Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

Authors alone are responsible for the contents of their articles. The journal owns the copyright of the articles.

The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of the research material.

IJRES International Journal of Research in Education and Science
Volume 4, Issue 1, Winter 2018 DOI:10.21890/ijres.369197

Parents' Perceptions of Their Involvement in Schooling

Mehmet Akif Erdener, Robert C. Knoeppel

Article Info

Article History

Received:
5 November 2017

Accepted:
20 December 2017

Keywords

Parent involvement
Family studies
Schooling
Family income
Parent education level

Abstract

Parent involvement has an influence on children's educational engagement during the elementary years. The objective of this study was to examine the perceptions of rural Turkish parents about their involvement in schooling with elementary school students based on Epstein's (1995) six types of parental involvement (parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community). This study also investigated the differences among parent demographic characteristics (education level, income, marital status, and age) and parent involvement at the elementary grade level in rural areas of Turkey. 742 parents of elementary schools in three rural settings in the city of Konya, Turkey completed questionnaires and assessments. A quantitative analyze method is used to analyze verified data. Findings indicated that family income had a statistically significant impact on combined factors of parent involvement. Education level by Age interaction, Income by Age interaction, and Education level by Income by Age interaction had a statistically significant impact on combined factors of parent involvement. No significant differences were found in parent involvement among parents who are from different education levels, marital status, and age groups in Turkey. This study showed that family income is the most significant factor on parental involvement in schooling for Turkish parents in all regions.

Introduction

In the last two decades, educational researchers have been interested in the positive effects parental involvement can have on students' academic achievements and successes. Parent involvement increases students' academic achievement and self-esteem (Erdoğan & Demirkasımoğlu, 2010; Desimone, 1999) while decreasing absenteeism and behavioral problems (Epstein & Sheldon, 2002a; Epstein & Sheldon, 2002b; Michael, Dittus, & Epstein, 2007; Sezer & İşgör, 2010; Sezer, 2016). Epstein (2005b) emphasized "parental involvement as an essential component of school improvement, linked to the curriculum, instruction, assessments, and other aspects of school management" (p. 179).

Parent involvement is defined as requires asking about their children's homework, contacting a teacher, and also, watching every single move a student makes (Knisely, 2011). In addition, parent involvement includes parent-student communication, family rules with consequences, parental support of academics, parent-school communication initiated at a school level versus the teacher level as well as parents checking on homework (Knisely, 2011). The level of parental involvement in education is a significant concern among educators, because there is a strong relationship established between parental involvement and student success (Knisely, 2011). So, countless research studies have shown a consistent relationship between parental involvement overall and academic achievement (Jeynes, 2005a).

Furthermore, parental involvement is an important ingredient for the remedy for many problems in education and it has positive influences on students' academic achievements (Fan & Chen, 2001). On the other hand, Fan and Chen (2001) said that parental supervision had a weak relationship with students' academic achievement; though parental aspiration or expectation for children's educational achievement had a considerably stronger relationship with students' academic achievement. Additionally, Coleman and McNeese (2009) claimed that "the relationships between parental involvement and student motivation and parental involvement and academic achievement both showed a negative correlation, which was unexpected" (p. 468).

On the contrary, parental involvement is an important factor in promoting the successful transition of youth with disabilities (Geenen & Powers, 2001), and influences not only student's motivation but also teacher's

willingness to increase their performance (Jeynes, 2005a). Parent involvement is an efficient social investment with a payoff far greater than its costs and it provides students equity and equal opportunity in education (Currie, 1997; Desimone, 1999). Moreover, parent involvement promotes a strong belief about children's well-being (Desimone, 1999; Heclo, 1997; Sezer, 2013). Michael et al. (2007) explained that family, school, and the community partnerships increase resources for student learning, strengthen families, and sustain healthier communities.

Education policies support parent involvement, and the partnerships of home, school, and the community. The Turkish Ministry of Education was supporting the Convention on the Rights of the Child (UNICEF) started a project that is called "Haydi Kızlar Okula." The purpose of the project was to provide girls, between the ages of 6 and 14 years, who did not go to school, had chronic absenteeism, and high drop-out rates, the opportunity to go school with the goal closing the gender gap (Haydi Kızlar Okula, 2009; Tezci, 2005). The second purpose of the campaign was to inform parents about the importance of education, and to provide them the opportunity to be involved in the education process. To achieve this goal, teams were created by the Ministry of Education that visited families door to door. The campaign was started in 2003 and in four years, it successfully enrolled 222,800 of the 273,447 girls in elementary and middle schools among who were not previously enrolled in any school (The Ministry of Education, 2011). The project required collaboration among parents, schools, and the community including local governors, religious leaders, journalists, and intellectuals.

Families influence their children's educational engagement, and occupational aspirations (Rosenberg & Lopez, 2010), and they are their children's first teachers (Erdoğan & Demirkasımoğlu, 2010). Epstein (2001) explained that children learn from their families, teachers, peers, relatives, part-time employers, and other adults in the community, so bridges among home, school, and community are certainly important. Additionally, family and community involvement in schools might increase the academic achievement of students, ensure better school attendance, and improve school programs and quality (Michael et al., 2007). Research by Epstein (2001) stressed the following points: 1) families care about their children's success; nevertheless, most parents need more information from schools to be productively involved in their children's education; 2) students learn more than academic skills at home, at school, and in the community; 3) peers, families, and the organization of activities in schools and classrooms positively or negatively influence students; and 4) community-based programs supporting school and families might effectively increase students' chances of success. Additionally, Epstein (2005a) suggested that educators, parents, and community partners might work collaboratively to design and conduct activities, so these activities improve student achievement, promote school goals for student attendance and behavior, and create a positive climate of partnership. She also described how these activities might be designed by teams including the principal, teachers, school council and parents who are accountable for their plans and work. Such activities are also influential in the acquisition of self-regulatory learning skills that also contribute to the lifelong learning of students (Aktan & Tezci, 2013).

Epstein conducted research over several decades using a model of parent involvement that she based on Bronfenbrenner's (1977) social ecological model (Epstein, 1985; 1987). She categorized parent involvement into six major types: (1) parenting, (2) communicating, (3) volunteering, (4) learning at home, (5) decision making, and (6) collaborating with the community. These types are parenting involvement are defined below.

Parenting activities demonstrate how schools increase the understanding of families about student needs and interests, as well as assist families to meet their parenting responsibilities at each grade level to influence child growth and development (Epstein et al., 2009).

Communicating activities increase two way communications from home to school and from school to home in order to develop understanding and cooperation between school and home. It is important for school personnel to establish clear communication with families who speak languages other than English at home (Epstein et al., 2009).

Volunteering activities encourage parents and community members to share their time and talents to help schools, teachers, and students. These parents and community members might assist schools in the library, computer room, playground, and cafeteria for after school activities, celebrations, sport activities and other events (Epstein et al., 2009).

Learning at home activities guide parents to help their children with homework; to increase reading skills; to select courses and school programs; to plan postsecondary education, and to benefit from other learning opportunities (Epstein et al., 2009).

Decision Making activities encourage parents to become involved in the decision making process about school programs, activities, and their children's future academic plan. It informs all parents about school policies and provides opportunities for parents to support their school and students (Epstein et al., 2009).

Collaborating with the community activities help to increase the cooperation among schools, families, organizations, community groups, and agencies. Community resources include human, economic, material, and social resources. Such resources assist schools to improve student success and create a safe learning environment (Epstein et al., 2009).

In the light of this model, Epstein (Epstein, 2005a; Epstein et al., 2002; Epstein et al., 2009) gave recommendations about how schools should work with families and communities. Schools need to establish action teams that focus on reading, writing, math, behavior, a positive school climate and other school improvement goals. Each action team has a one year action plan (Epstein, 2005a), and these plans must emphasize all six types of family and community involvement to create productive involvement at school, at home, and in the community (Epstein et al., 2002). Also, Epstein's (2005a) study showed that the action teams for school improvement developed curriculum content and instructional approaches in classrooms as well as increased the number of families and community partners from diverse cultural groups who were involved in their students' education. Epstein and Sanders (1998) studied home-school and community partnership organizations to ensure all students have equal opportunities and to make families aware of children's development and the schooling process.

Moreover, Epstein (2005a) explained that home-school and community partnership programs help teachers and families focus on helping students learn positive character traits such as honesty, listening, respecting others, and being a friend. Well-designed programs build bridges among home, school, and the community and create a sustained school culture and positive school climate to increase students' achievement (Epstein, 2001; Tezci, 2011). Also important are home, school, and community advocacy efforts that encourage school health programs in states, districts, schools, and classrooms nationwide (Michael et al., 2007).

Parents' demographic characteristics (e.g., parents' education level, socioeconomic status, and marital status) have been found significantly related to parent involvement in education. Parents with post-secondary education have a positive effect on children's interest in literacy activities (Baroody & Dobbs-Oates, 2009). In addition, these parents encourage their young children's self-concept development (Ayhan, 2008). There is a correlation between parent's education level and student academic achievement (Hortacsu, 1995) and students with educated parents have less behavioral problems in the school (Hill et al., 2004). In addition, Cooper (2010) noted that families' socio-economic status during kindergarten may have an impact on their children's transition through the early years of schooling. Poverty negatively affects parent involvement because, these families lack the time, and money (Erdoğan & Demirkasımoğlu, 2010), which means that they may not provide cognitively stimulating materials for their children (Cooper, Crosnoe, Suizzo & Pituch, 2010).

Additionally, Epstein and Sanders (1998) reported that parents of elementary students are more involved than parents of children in secondary schools; mothers are more involved than fathers; and more educated parents are more involved than less educated parents. In addition, marital status is influential on student achievement (Jeynes, 2005b), and intact families have a positive impact on their children's academic achievement (Cooper, 2010). Epstein and Sanders (1998) said researchers in many nations are working to understand the relationship between school, home and community by using many different research methods to build knowledge in their field. While parent education level and parent income affect parental involvement, one of the important factors is to increase parental involvement is teachers' willingness and smiling faces during meetings with parents (Erdener, 2014). Parents everywhere care about their children and want them to be successful (Epstein & Sanders, 1998, p. 392). Snyder et al. (2009) said that all teachers and staff in the school, parents and the community developed to specifically target the positive development of student behavior and character. So, the interaction of family, teacher and the community assists students to gain not only the knowledge, attitudes, norms, and skills but also improves values, self-concept, family bonding, communication, and appreciation of school.

Statement of the Problem

Families support children's learning and growth from cradle to career, so they impact child development across all grades (Rosenberg & Lopez, 2010). Parents' demographics (e.g., parents' education level, socioeconomic status, and marital status) may be influential on parent involvement. There is a relationship between parents'

demographic characteristics and parent involvement (Baroody & Dobbs-Oates, 2009; Cooper, 2010; Cooper et al., 2010; Crosnoe, 2001; Englund et al., 2004; Epstein & Sanders, 2002; Erdoğan & Demirkasımoğlu, 2010; Hill et al., 2004; Hortacsu, 1995; Suizzo & Soon, 2006). Many studies have investigated the relationship between parental involvement and student achievement or success, and parent's demographics and parental involvement. Epstein and her colleagues have studied the effects of parent involvement which they categorized into six major types: (1) parenting, (2) communicating, (3) volunteering, (4) learning at home, (5) decision making, and (6) collaborating with the community on student academic achievement and behaviors.

In contrast, investigations into the relationship between parent's demographic characteristics and parent involvement in Turkey are minimal. The extant knowledge about cultural influences on parents' perceptions of their involvement in schooling is limited. Therefore, this study analyzed Turkish parents' perceptions of their involvement in schooling at elementary schools in Turkey. The research also analyzed the differences between Turkish parent's demographic characteristics (e.g., parents' education level, socioeconomic status, and marital status) and Epstein's six types of parental involvement.

Purpose of the Study

Studies have shown that parent involvement in schooling positively affect students' academic achievement (Epstein, 2001; Erdoğan & Demirkasımoğlu, 2010). Determining the effective level of parent involvement may be associated with parents' demographics. The primary purpose of this study was to investigate Turkish parents' perceptions of their involvement in schooling at elementary grades in rural areas of Turkey. The second purpose of this study was to explore the cultural influences on Turkish parents with their involvement in schooling. Thirdly, this study examined the differences among parent demographic characteristics (education level, income, marital status, and age) and parent involvement at the elementary grade level in rural areas of Turkey. The assessment of parent involvement was developed by Epstein using her model of parent involvement as six types: (1) parenting, (2) communicating, (3) volunteering, (4) learning at home, (5) decision making, and (6) collaborating with the community. Finally, this study explored the potential differences among Epstein's six aspects of parent involvement and rural parenting practices in Turkey. Understanding parents' perceptions about parent involvement may help educators understand the weaknesses and strengths of the relationship among home, school, and the community. So that school administrators and teachers may more effectively promote parent involvement in schooling.

This research explored following question: What is the difference among parents' perceptions when grouped parent education level, income, marital status, and age on Epstein's six factors of parent involvement as described (parenting, communicating, volunteering, learning at home, decision making, and collaborating with the community) in Turkey?

First of all, parent involvement in education is a key component for students' academic success. Many studies showed a positive correlation between parental involvement and student achievement (Epstein, 2001; Erdoğan & Demirkasımoğlu, 2010; Jeynes, 2005a; Shaw, 2008). The significance of this study was to examine the perceptions of rural Turkish parents regarding effective parental involvement with elementary school students based on Epstein's (1995) six types of parental involvement. Therefore, this study's results may indicate more effective means of parental involvement. The findings of this study provided significant information that will extend knowledge about the phenomenon of parent involvement.

Theoretical Framework

Human development is a process that is affected by interaction with changing environments (Bronfenbrenner, 1977). The theoretical framework used in this study is Bronfenbrenner's Bioecoloogical theory that focused on the interactions between the environment and the individual. Bronfenbrenner's Bioecological Theory (1977; 1986) included five systems: 1) Microsystems, 2) Mesosystem, 3) Exosystem, 4) Macrosystem, and 5) Chronosystem. Bronfenbrenner (1977) explained that the ecological theory is a lifespan theory and the mutual accommodation progressive happens between the individual and changing environment. There are reciprocal interactions between these systems and the child (Bronfenbrenner, 1977). The child is at the center of the systems (Bronfenbrenner, 1977); the relationship existing between the family and the school is a powerful factor affecting the capacity of a child to learn in the classroom (Bronfenbrenner, 1986).

According to Bronfenbrenner's theory, the microsystem includes the interactions between the developing person and environment (e.g., home, school, workplace, etc.). There is a direct interaction between the child and school, the child and family, and the child and peers. The mesosystem includes the interrelations among major settings containing the developing person (e.g., home, school, neighborhood, peers, religious affiliation, etc.). The exosystem includes the major institutions of the society such as the neighborhood, the mass media, agencies of government (local, state, and national), policies in education, communication and transportation facilities, and informal social networks (Bronfenbrenner, 1977). The exosystem is an extension of the mesosystem and it directly and indirectly affects the child. Finally, the macrosystem includes institutional patterns of the culture or subculture, such as the economic, social, educational, legal, and political systems, and also social interchanges (Bronfenbrenner, 1977). Bronfenbrenner (1977; 1986) explained that children are affected by parents and school independently and interactively. Each interaction between the child and the systems influences child development and characteristics (Bronfenbrenner, 1986).

Parent involvement is a process of child development in social and educational environments. Furthermore, Epstein's (2010) overlapping spheres of influence model demonstrates the relationships of the school, family, and community for a child's success in school. Epstein (2010) recognized the child at the center as the focus within the family, school, and community. Children have interactions with their families, their schools, and their communities (Epstein, 1995). Families, their schools, and communities influence a child's academic achievement and success (Epstein, 1995). Epstein (2010) stated that each component of the external structure of the overlapping spheres might act and interact with others and these actions influence student learning and development.

Method

Research Design

Instrument

This research study used a survey designed to identify the Turkish parents' perceptions of their involvement in schooling. The researcher adapted a survey by Epstein et al. (2009, p. 324-329). The survey included Epstein's six categories of parental involvement with an additional category of parental expectations. The survey contained 29 parent involvement statements distributed among six categories of parental involvement. The survey questions were based on 5-point Likert scale for perceptions ranging from a low score of 1 (*never*) to a high score of 5 (*frequently*). Additionally, the instrument included a section on parent demographic information. This section helped the researcher investigate the differences between parents' demographic characteristics and their school involvement as measured by Epstein's survey and model of parent involvement.

Participants

The targeted populations in this study were parents of elementary schools students (grades 1-5) currently enrolled in a public school system in rural areas of the city of Konya, Turkey. Participants were selected from these parents by a cluster sampling technique (Huck, 2011). The researcher delivered the survey to schools and schools sent the survey home with students to give to their parents. Both electronic as well as paper copies of surveys were made available. The parents received the survey and a request letter that explained the intent of the study and asked for their participation in the study. Parents were asked to complete the survey and return it to schools. Parents were not required to provide any identifying information. The anonymity of the subjects strengthens the validity of the instrument and the study. The means and standard deviations of participants' demographic characteristics in this study are represented in Table 1.

Three hundred sixty-eight (49.6%) participants did not have a high school diploma, 199 (26.8%) graduated from high school, 76 (10.2%) had some college coursework, 93 (12.5%) had bachelor's degrees, and 6 (0.8%) had graduate degrees. Moreover, three hundred ninety-one (52.7%) families were low income families, and had 1,000 Turkish liras (TL) or less monthly; 245 (33%) families had between 1,000 and 2,500 TL; 83 (11.2%) families have gotten between 2,500 and 5,000 TL; 15 (2%) families had between 5,000 and 10,000 TL; and 8 (1.1%) families had 10,000 or more TL monthly. The last two groups were high-income families.

Table 1. Parent demographics

	N	Min	Max	Sum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
ED_LEVEL	742	1	5	1396	1.88	.040	1.077
INCOME	742	1	5	1230	1.66	.031	.837
AGE	742	1	5	2394	3.23	.024	.651
MARITAL	742	1	5	832	1.12	.020	.536
Valid N	742						

Additionally, four (.5%) participants were 18 or 19 years old. These participants were probably the brother or sister of the students. Sixty (8.1%) participants were between 20 and 29 years of age; four hundred sixty two (62.3%) participants were between 30 and 39 years of age and this group had highest number of children who enrolled the elementary school in Turkey. One hundred ninety-six (26.4%) participants were between 40 and 49 years old, and 20 (2.7%) parents of guardians were in 50 years and older. Furthermore, six hundred ninety-six (93.8%) participants had been married once, and 20 (2.7%) participants were remarried. The cumulative number of married families was seven hundred sixteen (96.5%), which reflects the intact family structure is high in Turkey. Thirteen (1.8%) participants were separated, 8 (1.1%) participants were widowed, and 5 (0.7%) participants were never married.

Analysis Overview

Once all surveys were returned, data analysis followed. Data were analyzed using the Statistical Package for Social Sciences (SPSS) (version 21.0). The researcher interpreted data using Exploratory Factor analysis and Multivariate Analysis of Variance (MANOVA). Factor analysis provided the researcher with the ability to reduce and cluster the complexity of the variables, so it was easier for the researcher to investigate the problem (Huck, 2011; Mertler & Vannaatta, 2010). Davidov and Beuckelaer (2010) explained that some questions might have different meanings and content for individuals from different cultures or who speak languages. The survey's original language was English, and the researcher translated it into Turkish. As such, Davidov and Beuckelaer (2010) suggested that the researcher needed to evaluate the reliability of the survey instrument. Factor analysis was used in this study to test for equivalence of the survey questions across cultural groups. Field (2009) stated that MANOVA included many dependent variables in the same analysis and considered the relationship between outcome variables. In addition, Mertler and Vannaatta (2010) explained that MANOVA incorporated two or more dependent variables in the same analysis with nominal and ordinal independent variables. MANOVA is designed to test the significance of group differences, and dependent variables that share a common conceptual meaning should have some degree of linearity (Mertler & Vannaatta, 2010).

Results and Discussion

The data were collected from 742 elementary school students' parents in Turkey. A factor analysis was performed using the Principal Component extraction method and revealed the presence of 5 factors with eigenvalues exceeding 1, explaining a total of 57.897 percent of variance. The Kaiser Meyer Olkin (KMO) was 0.959 for sampling adequacy. Cronbach's alpha was used to check the reliability of the study; the reliability was 0.945 of 29 items. Despite these results indicating a strong model, one of the five factors was very weak, according to the Pattern Matrix. Questions 6, 11, 12, 27, 28, and 29 were removed and the factor analysis was rerun with Principal Component Analysis. An inspection of the scree plot displayed a clear break after the fourth factor. KMO was 0.948 with very good communalities, and the reliability was 0.934 of 23 items by using Cronbach's alpha. Direct Oblimin was used as a rotation method to interpret these four factors.

After the factor analysis was conducted, the factors were determined according to related questions and Epstein's typology labels. Factor 1 was labeled Parenting, and contained six items. The reliability of the Parenting factor was 0.836 of 6 items by using Cronbach's alpha. Factor 2 was labeled the Decision-Making, and contained six items. The reliability of Decision-Making factor was 0.828 of 6 items by using Cronbach's alpha. Factor 3 was a mix of three questions relating to Communicating and four questions relating to the Volunteering, and overall contained seven items. The researcher labeled this factor as School Interaction. The reliability of the School Interaction factor was 0.852 of 7 items by using Cronbach's alpha. The last factor was

labeled Learning at Home and contained four items. The reliability of the Learning at Home factor was 0.848 of 4 items by using Cronbach's alpha.

These four new factors were the dependent variables of this study. Then, the full Multivariate Analysis of Variance (MANOVA) was conducted. The output of MANOVA includes the test for homogeneity of variance (Box's test), so the interpretations begins with the results of Box's test (Mertler & Vannaatta, 2010). The results of the Box's test of equality of variance, F (360, 13082.290) = 1.228, p = 0.002. The Box's test was significant and the groups were unequal, so the Pillai's Trace was chosen. "The multivariate normality implies that the sampling distribution of the means of each dependent variable in each cell is normally distributed" (Mertler & Vannaatta, 2010, p. 122), because of the possible violation of normality might be assessed by interpreting the results of Box's test. Nonetheless, Mertler and Vannaatta (2010) explained that a violation of this assumption of homoscedasticity will not prove fatal to analysis; despite this, a more robust multivariate test statistics, Pillai's Trace, was used to interpret the multivariate results.

The results of the multivariate test of parent involvement indicated that family income [Pillai's Trace = 0.047, F (16, 2424) = 1.814, p = 0.024, partial η2 = 0.012] is significantly affecting the combined dependent variables of Parenting, Decision-Making, School Interactions and Learning at Home. Education level by Age interaction [Pillai's Trace = 0.08, F (28, 2424) = 1.765, p = 0.008, partial η2 = 0.020] is significantly affecting the combined dependent variables of Parenting, Decision-Making, School Interactions and Learning at Home. Income by Age interaction [Pillai's Trace = 0.079, F (28, 2424) = 1.738, p = 0.01, partial η2 = 0.020] is significantly affecting the combined dependent variables of Parenting, Decision-Making, School Interactions and Learning at Home. Education level by Income by Age interaction [Pillai's Trace = 0.064, F (24, 2424) = 1.652, p = 0.024, partial η2 = 0.016] significantly affect the combined dependent variables of Parenting, Decision-Making, School Interactions and Learning at Home. Education level, Marital status, and Age do not statistically affect the combined dependent variables of Parenting, Decision-Making, School Interactions and Learning at Home. The results of multivariate test of parent involvement are presented in Table 2.

Table 2. Multivariate test of parent involvement

Multivariate Tests[a] Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter
Intercept	.008	1.146[b]	4.000	603.00	.334	.008	4.585
ED_LEVEL	.036	1.377	16.000	2424.000	.143	.009	22.028
INCOME	.047	1.814	16.000	2424.000	.024	.012	29.021
AGE	.015	.585	16.000	2424.000	.898	.004	9.356
MARITAL	.037	1.402	16.000	2424.000	.131	.009	22.428
ED_LEVEL * AGE	.080	1.765	28.000	2424.000	.008	.020	49.411
INCOME * AGE	.079	1.738	28.000	2424.000	.010	.020	48.656
ED_LEVEL * INCOME * AGE	.064	1.652	24.000	2424.000	.024	.016	39.646

Note. Computed using alpha = .05

A Univariate Analysis of Variance (ANOVA) was conducted as a follow-up test. Income [F (4, 606) = 3.131, p = 0.015, partial η2 = 0.020] significantly affects the Parenting, and also [F (4, 606) = 2.62, p = 0.034, partial η2 = 0.017] significantly affects the School Interactions. Education by Income interaction [F (9, 606) = 2.45, p = 0.01, partial η2 = 0.035], and Education by Marital status interaction [F (3, 606) = 2.833, p = 0.038, partial η2 = 0.014] significantly affects the Learning at home. In addition, Education by Age interaction [F (7, 606) = 3.23, p = 0.002, partial η2 = 0.036] significantly affects the Decision-Making. The results of Univariate ANOVA are presenting on Table 3.

Four factors of parent involvement were found to exist after conducting the factor analysis. They were named: (1) parenting, (2) decision making, (3) school interactions, and (4) learning at home. Three of the factors contained almost the same questions that Epstein's factors had; as such, similar names were used for these factors. The collaborating with the community factor was not found to exist in this study. The cultural differences in the Turkish education system or decreased number of questions in the instrument might have been the cause of the change in the number of factors. The new factors are described as the following: First, parenting is an awareness of every step of child growth and development. Parents might be supported with more information from teachers about parenting. Second, Decision-Making is defined as being a part of Parent and Teacher Organizations at school so that parents are involved in the decision-making process for school

programs, and events. Involvement in Decision-Making may also be defined as parents discussing post-secondary and career plans with their children. Third, school-interactions are defined as communicating with schools and the community and volunteering for school activities and events. School-Interactions improve parents' and teachers' awareness about their child's talents, skills, and abilities. This helps teachers apply useful teaching methods and it helps parents to understand their children's capability so that they can better support them in their schooling. Last, learning at home is defined as parents monitoring and discussing the schooling process at home with their children. This can help parents to create better home conditions while sharing real life experience with their children.

Table 3. Parent demographics' effects on parent involvement

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter
Corrected Model	Parenting	180.133[a]	135	1.334	1.442	.002	.243	194.628
	Decision Making	172.679[b]	135	1.279	1.364	.008	.233	184.128
	School Interaction	207.104[c]	135	1.534	1.741	.000	.279	235.074
	Learning at Home	197.298[d]	135	1.461	1.629	.000	.266	219.905
Intercept	Parenting	.255	1	.255	.276	.600	.000	.276
	Decision Making	.319	1	.319	.341	.560	.001	.341
	School Interactions	.056	1	.056	.064	.801	.000	.064
	Learning at Home	2.070	1	2.070	2.307	.129	.004	2.307
INCOME	Parenting	11.591	4	2.898	3.131	.015	.020	12.523
	Decision Making	5.491	4	1.373	1.464	.212	.010	5.855
	School Interactions	9.231	4	2.308	2.620	.034	.017	10.478
	Learning at Home	3.733	4	.933	1.040	.386	.007	4.161
ED_LEVEL * AGE	Parenting	11.287	7	1.612	1.742	.097	.020	12.195
	Decision Making	21.203	7	3.029	3.230	.002	.036	22.609
	School Interactions	5.851	7	.836	.949	.468	.011	6.641
	Learning at Home	3.628	7	.518	.578	.774	.007	4.044
INCOME * AGE	Parenting	11.914	7	1.702	1.839	.077	.021	12.873
	Decision Making	11.001	7	1.572	1.676	.112	.019	11.730
	School Interactions	9.762	7	1.395	1.583	.138	.018	11.080
	Learning at Home	9.531	7	1.362	1.518	.158	.017	10.623
ED_LEVEL * INCOME * AGE	Parenting	5.356	6	.893	.964	.448	.009	5.787
	Decision Making	9.514	6	1.586	1.691	.121	.016	10.144
	School Interactions	8.850	6	1.475	1.674	.125	.016	10.046
	Learning at Home	9.940	6	1.657	1.846	.088	.018	11.079
Error	Parenting	560.867	606	.926				
	Decision Making	568.321	606	.938				
	School Interactions	533.896	606	.881				
	Learning at Home	543.702	606	.897				
Total	Parenting	741.000	742					
	Decision Making	741.000	742					
	School Interactions	741.000	742					
	Learning at Home	741.000	742					
Corrected Total	Parenting	741.000	741					
	Decision Making	741.000	741					
	School Interactions	741.000	741					
	Learning at Home	741.000	741					

Note. a. R Squared = .243 (Adjusted R Squared = .074)
b. R Squared = .233 (Adjusted R Squared = .062)
c. R Squared = .279 (Adjusted R Squared = .119)
d. R Squared = .266 (Adjusted R Squared = .103)
e. Computed using alpha = .05

The four factors were used as dependent variables to conduct the Multivariate Analysis of Variance (MANOVA). The findings indicated that family income level significantly affected the combined parent involvement factors of Parenting, Decision-Making, School Interactions and Learning at Home. On the other

hand, parent education level, marital status, and age did not significantly affect the combined dependent variables of Parenting, Decision-Making, School Interactions and Learning at Home. As earlier research indicated, educated parents have a positive effect on children's interest in literacy activities and motivation in early ages (Ayhan, 2008). In addition, in a study in of parents of fourth grade students in Ankara, Turkey, Hortacsu (1995) found that educated parents also affected children's cognitions, development, and their academic achievement. Nevertheless, this study was conducted in rural areas, and the number of parents who had bachelors and graduate degrees were low. More than 96% of participants had intact families, so the sample did not include a large enough number of participants who were separated, widowed, and never married.

Although, education level, marital status, and age did not significantly affect the combined parent involvement, there were some interactions among the independent variables that showed significant differences on parent involvement factors. The interaction between education level and age significantly affected the combined dependent variables of parent involvement. Also, the interaction between family income and age significantly affected the combined dependent variables of parent involvement. The finding is consistent with previous studies (Cooper, 2010; Erdoğan & Demirkasımoğlu, 2010; Hill et al., 2004; Reynolds, 1991) that indicated that parents who work in minimum wage jobs might not be involved in many school activities because they lack the time. Furthermore, poverty might limit these parents ability to obtain resources for their children's education. Finally, the interaction among education level, family income, and age, as well as the interaction among family income, and age significantly affected the combined dependent variables of parent involvement.

Moreover, the results of the follow-up test, the Univariate Analysis of Variance (ANOVA), indicated that some interactions of independent variables, and income separately affected the Parenting, the Decision-Making, the School Interactions and the Learning at Home factors. Income statistically affected the Parenting, and the School Interactions factors. The interaction between education and income, and also education and marital status statistically affected the Learning at Home factor. More than half of families earned the minimum wage, and almost 80% of families had low income in rural areas of the city of Konya. There are not private schools, so all parents send their children to public schools. Nevertheless, high income and middle income families might send their children to private learning centers and might also be able to afford tutoring expenses, and transportation. In addition, the government provides free textbooks for all children; however, there were many other schooling materials such as technology, the internet, new books etc. In the last decade, teachers have promoted the use of technology by students for their homework and projects. Although, high income and middle-income families might offer these materials to their children, low-income families cannot afford the internet, computers, and touchpad for their children.

Also, high income parents and one of the middle income levels were involved in school interactions for all three districts. These families had good communication with teachers. They were attending school activities and events. These parents also joined the school activities as volunteers. They were informed about how to monitor their children's schooling process.

In addition, the interaction between education and age statistically affected the Decision-Making factor. Educated parents in the Çumra district were involved in school interactions for all age groups except parents who had bachelor's degrees between the ages of 20-29 and 40-49. None of the parents in Akşehir had graduate degrees. The most involved parents in Cihanbeyli were in the age groups of 20-29 years and 40-49 years. All parents in this region were significantly involved in school interactions except those who had less than a high school degree. The most involved parents in this region had bachelor's degree and they were from the middle age groups. Therefore, highly educated parents from the middle and young age groups were involved in school activities and regularly communicated with teachers. The importance of education has increased among the Turkish people during the last two decades. Thus, educated parents paid attention to the significance of education for their children and they take the time to become involved in their children's schooling. In Çumra district, low income parents for all age groups were more likely to be involved in both the decision-making and the learning at home process more than high income families. High income and middle income parents who are in the 30-39 years of age were only involved in the decision-making process in Çumra. In addition, high income and middle income parents for different age groups were most likely to be involved in the decision-making and the learning at home process in Cihanbeyli and Akşehir districts. These parents joined the Parent and Teacher Organizations to make decision about school programs and activities. Also these parents discussed and monitored the schooling processes at home with their children. In the Çumra district, many people work at farming and breading livestock, so there are many low income families. This is an important finding because it was contrary to existing literature that low income parents are less involved in the decision making process at school than higher income families. Although this only happened in one region, the finding was noteworthy.

The study had several limitations. Survey research is a design that permits the collection of data from large numbers of participants, but depends on the participants' willingness to respond to a written data collection instrument (Pinsonneault & Kraemer, 1993). Surveys are useful in collecting participants' perceptions about behavior, but are limited by the participants' honesty, willingness to answer questions, and their recall of situations or events. All these limitations of the research design of surveys pertain to this study (Green, Camilli, & Elmore, 2006).

Conclusion

The findings of this study extended the work of previous research on parent involvement in the schooling process. This investigation revealed how the partnership between home and school is necessary in Turkey. Significant differences were found between family income levels on combined parent involvement factors. Also, there were significant differences between the parent demographic characteristics on combined or separate parent involvement factors.

Many parents agreed that educated parents and society affect student achievement because these groups of people have better communication with teachers and principals (Erdener, 2014). Parent involvement has an influence on children's educational engagement for all school levels (Erdener, 2016). Educated parents are involved in the decision making process about their children's post-secondary education plans, career plans, and parents think that students from high income families are more successful. In addition, parents claimed that family problems prevented their involvement in the schooling process. For the most part, poverty was the cause of these problems. The parent's comments suggested that parents agreed that parent involvement is definitely significant for students' academic achievement and behaviors problems, but they still believed that schools are responsible for schooling.

Therefore, the education system might require professional development for the school administrators and teachers about increasing parent involvement in their children's schooling. A school administrators' fairness and working in harmony can make it easier for teachers to increase their job motivation levels (Deniz & Erdener, 2016b). Principal might increase their instructional supervision about teachers' classroom activities and lead them to communicate with parents (Deniz & Erdener, 2016a). Also, teacher candidates might be informed about why parent involvement is necessary and how they can provide the partnership between home, school and the community in bachelor's degree. Some courses might be offered for educators by the school of education.

Recommendations

The significance of parent involvement in schooling has been occurred in Turkey. Next studies and researches will solve the problems which are the barrier of parent involvement. Future researches might be about teacher attitudes about parent involvement in different regions.

Acknowledgements

This study is a part of a doctoral dissertation. The research was supported by a grant from the Turkish Ministry of National Education. We sincerely thank Dr. Curtis Brewer, Dr. Bonnie Holaday, Dr. Jane Clark Lindle, and Dr. Russ Marion for their guidance.

References

Aktan, S., & Tezci, E. (2013). Matematikte öz düzenleyici öğrenme stratejileri ölçeğinin geçerlik ve güvenilirlik çalişmasi [The study of validity and reliability of self regulated learning strategies scale in mathematics]. *e-Journal of New World Sciences Academy*, (8),1, 46-62.

Ayhan, A. (2008). Altı yaş grubundaki çocukların kavram gelişimlerinin cinsiyete, anne-baba ögrenim düzeyine ve ana okuluna devam süresine göre incelenmesi [An examination of six-year-old children's concept development with respect to gender, parents' education level and time spent in preschool]. *Cagdas Egitim Dergisi*, (350), 33-38.

Baroody, A., & Dobbs-Oates, J. (2009). Child and parent characteristics, parental expectations, and child behaviors related to preschool children's interest in literacy. *Early Child Development and Care, 181*(3), 345–359.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*, 513 - 531.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22*(6), 723 - 742.

Coleman, B & McNeese, M.N. (2009). From home to school: The relationship among parental involvement, student motivations, and academic achievement. International Journal of Learning, 16 (7), 459-470.

Cooper, C. E. (2010). Family poverty, school-based parental involvement, and policy-focused protective factors in kindergarten. *Early Childhood Research Quarterly*, *25*(4), 480-492.

Cooper, C. E., Crosnoe, R., Suizzo, M. A., & Pituch, K. A. (2010). Poverty, race, and parental involvement during the transition to elementary school. *Journal of Family Issues*, *31*(7), 859-883. doi: 10.1177/0192513X09351515

Crosnoe, R. (2001). Academic orientation and parental involvement in education during high school. *Sociology of Education, 74*, 210-230.

Currie, J. M. (1997). Choosing among alternative programs for poor children. *The Future of Children, 7*, 113-131.

Davidov, E., & Beuckelaer, A. D. (2010). How harmful are survey translations? A test with Schwartz's human values instrument. *International Journal of Public Opinion Research, 22*(4), 487-510.

Deniz, Ü. ve Erdener, M. A. (2016a). Okul müdürlerinin sergilediği öğretimsel denetim davranışlarına ilişkin öğretmen görüşleri. Tüfekçi, Ö. K. (Ed.). *Sosyal bilimlerde stratejik araştırmalar* (ss. 69-81). Saarbrücken: Lambert Academic Publishing.

Deniz, Ü. ve Erdener, M. A. (2016). Öğretmenlerin iş motivasyonlarını etkileyen etmenler. Tüfekçi, Ö. K. (Ed.). *Sosyal bilimlerde stratejik araştırmalar* (ss. 29-41). Saarbrücken: Lambert Academic Publishing.

Desimone, L. (1999). Linking parent involvement with student achievement: Do race and income matter? *The Journal of Educational Research, 93*(1), 11-30.

Englund, M. M., Luckner, A. E., Whaley, G. J. L., & Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology, 96*, 723-730.

Epstein, J.L. (1985). Home and school connections in schools of the future: Implications of research on parent involvement, *Peabody Journal of Education, 62* (2), 18-41. doi: http://dx.doi.org/10.1080/01619568509538471

Epstein, J. L. (1987). Toward a theory of family-school connections: Teacher practices and parent involvement. In K. Hurrelmann, F. Kaufmann, and F. Lösel (Eds.). *Social intervention: Potential and constraints*, (pp. 121-136). New York: Walter de Gruyter.

Epstein, J. L. (1995). School/family/community partnerships: Caring for the children we share. *The Phi Delta Kappan*, *76*(9), 701-712.

Epstein, J. L. (2001). Building bridges of home, school, and community: The importance of design. *Journal of Education for Students Placed at Risk, 6*(1/2), 161-168.

Epstein, J. L. (2005a). A case study of the partnership schools comprehensive school reform (CSR) model. *Elementary School Journal*, *106*(2), 151-170.

Epstein, J. L. (2005b). Attainable goals? The spirit and letter of the No Child Left Behind Act on parental involvement. *Sociology of Education*, *78*(2), 179-182.

Epstein, J. L. (2010). *School, family, and community partnerships: Preparing educators and improving schools* (2nd ed.). Boulder, CO: Westview Press.

Epstein, J., & Sanders, M. G. (1998). What we learn from international studies of school-family-community partnerships. *Childhood Education*, *74*(6), 392-94.

Epstein, J. L., & Sanders, M. G. (2002). Family, school, and community partnerships. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 5. Practical issues in parenting* (pp. 407-437). Mahwah, NJ: Lawrence Erlbaum.

Epstein, J. L., Sanders, M. G., Simon, B. S., Salinas, K. C., Jansorn, N. R., & Van Voorhis, F. L. (2002). *School, family, and community partnerships. Your handbook for action* (2nd ed.). Thousand Oaks, CA: Corwin Press.

Epstein, J. L., Sanders, M. G., Sheldon, S. B., Simon, B. S., Salinas, K., Jansorn, N., Van Voorhis, F. L., Martin, C. S., & Williams, K. J. (2009). *School, family, and community partnerships: Your handbook for action (3rd ed.)*. Thousand Oaks, CA: Corwin Press.

Epstein, J. L., & Sheldon, S. B. (2002a). Improving student behavior and school discipline with family and community involvement**.** *Education and Urban Society*, *35*(4), 4-26.

Epstein, J. L., & Sheldon, S. B. (2002b). Present and accounted for: Improving student attendance through family and community involvement. *Journal of Educational Research, 95*(5), 308-318.

Erdener, M. A. (2014). The Factors Which Contribute or Limit Parent Involvement in Schooling. *NWSA-Education Sciences, 9*(1), 36-47.

Erdener, M. A. (2016). Principals and Teachers Practices about Parent Involvement in Schooling. *Universal Journal of Educational Research, 4*(12A), 151-159., doi: 10.13189/ujer.2016.041319 (Yayın No: 2981226)

Erdoğan, Ç., & Demirkasımoğlu, N. (2010). Ailelerin eğitim sürecine katılımına ilişkin öğretmen ve yönetici görüşleri [Teachers' and school administrators' views of parent involvement in education process]. *Kuram ve Uygulamada Eğitim Yönetimi [Educational Administration: Theory and Practice], 16*(3), 399-431.

Fan, X. & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. Educational Psychology Review, 13 (1), 1-22.

Field, A. (2009). *Discovering statistics using SPSS.* Thousand Oaks, CA: Sage.

Geenen, S., & Powers, L. E. (2001). Multicultural aspects of parent involvement in transition planning. *Exceptional Children*, 67(2), 265-282.

Green, J. L., Camilli, G., & Elmore, P. (Eds.). (2006). *Handbook of complementary methods in education research.* Philadelphia: Lawrence Erlbaum Associates.

Haydi Kızlar Okula. (2009). *The purpose of the girls' education campaign.* Retrieved from http://haydikizlarokula.meb.gov.tr/index.php

Heclo, H. H. (1997). Values underpinning poverty programs for children. *The Future of Children, 7*, 141-148.

Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development, 75*(5), 1491-1509.

Hortacsu, N. (1995). Parents' education levels, parents' beliefs, and child outcomes. *The Journal of Genetic Psychology, 156*(3), 373-383.

Huck, S. W. (2011). *Reading statistics and research* (6th ed.). Boston, MA: Pearson.

Jeynes, W. H. (2005a). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education*, *40*(3), 237-269. doi:10.1177/0042085905274540

Jeynes, W. H. (2005b). Effects of parental involvement and family structure on the academic achievement of adolescents. *Marriage & Family Review, 37*(3), 99-116. doi: 10.1300/J002v37n03_06

Knisely, K. (2011). *Literature Review: How much does parental involvement really affect the student's success?* Retrieved from http://kniselymtt.pbworks.com/f/EDCI6300_kknisely_LiteratureReview.pdf

Mertler, C. A., & Vannaatta, R. A. (2010). *Advanced and multivariate statistical methods: Practical application and interpretation* (4th ed.). Glendale, CA: Pyrczak Publishing.

Michael, S., Dittus, P., & Epstein, J. (2007). Family and community involvement in schools: Results from the school health policies and programs study 2006. *Journal of School Health*, *77*(8), 567-587. doi:10.1111/j.1746-1561.2007.00236.x

Pinsonneault, A., & Kraemer, K. L. (1993). Survey research methodology in management information systems: An assessment. *Journal of Management Information Systems, 10*(2), 75-105.

Reynolds, A. J. (1991). Comparing measures of parental involvement and their effects on academic achievement. *Early Childhood Research Quarterly*, *7*(3), 441-462.

Rosenberg, H., & Lopez, M. E. (2010, April). Family engagement from cradle to career. *Family Involvement Network of Educators (FINE) Newsletter, 2*(1). Retrieved from http://www.hfrp.org/publications-resources/browse-our-publications/family-engagement-from-cradle-to-career

Sezer, F., & İşgör, İ. Y. (2010). İlköğretim ve ortaöğretim kurumlarındaki öğrencilerin problem alanlarının tespiti (Erzurum ili örneği). *Millî Eğitim Dergisi*, *39*(186), 235-247.

Sezer, F. (2013). Factors that affect psychological wellbeing. *Education Sciences*, *8*(4), 489-504

Sezer, F. (2016). Causes of failure from students' point of view Öğrenci gözüyle başarısızlığının nedenleri. *Journal of Human Sciences*, *13*(3), 4818-4830.

Shaw, C. A. (2008). *A study of the relationship of parental involvement to student achievement in a Pennsylvania career and technology center*. (Unpublished doctoral dissertation). The Pennsylvania State University. State College, PA.

Snyder, F., Flay, B., Vuchinich, S., Acock, A., Washburn, I., Beets, M., & Li, K.K., (2009). Impact of a social-emotional and character development program on school-level indicators of academic achievement, absenteeism, and disciplinary outcomes: A matched-pair, cluster-randomized, controlled trial, *Journal of Research on Educational Effectiveness*, *3*(1), 26-55, DOI: 10.1080/19345740903353436

SPSS Inc. (2011). SPSS Base 20.0 for Windows. IBM inc., Chicago, IL.

Suizzo, M.A., & Soon, K. (2006). Parental academic socialization: Effects of home-based parental involvement on locus of control across U.S. ethnic groups. *Educational Psychology, 26*, 827-846.

Tezci, E. (2011). Turkish primary school teachers' perceptions of school culture regarding ICT integration. *Educational Technology Research and Development*, *59*(3), 429-443.

Tezci, E. (2015). Türkiye'de ilköğretim politikaları. (Ed.: Gümüş, Arife) Türkiye'de Eğitim Politikaları (s.237-272). Ankara: Nobel Yay.

The Ministry of National Education of the Republic of Turkey. (2011). *Haydi Kizlar Okula*. Retrieved from http://www.meb.gov.tr/

Turkish Statistical Institute. (2011). *Education statistics*. Retrieved from http://www.turkstat.gov.tr/PreTablo.do?tb_id=14&ust_id=5

Author Information

Mehmet Akif Erdener
Balıkesir University
Necatibey School of Education
Assistant Professor of Educational Leadership
Altıeylül, Balıkesir / Turkey
Contact e-mail: *erdener@balikesir.edu.tr*

Robert C. Knoeppel
Clemson University
Professor & Chair of Educational & Organizational Leadership Development
Clemson, SC / USA 29634

MIND, BRAIN, AND EDUCATION

Optimizing the Power of Choice: Supporting Student Autonomy to Foster Motivation and Engagement in Learning

Miriam Evans[1] and Alyssa R. Boucher[1]

ABSTRACT— Choice plays a critical role in promoting students' intrinsic motivation and deep engagement in learning. Across a range of academic outcomes and student populations, positive impacts have been seen when student autonomy is promoted through meaningful and personally relevant choice. This article presents a theoretical perspective on the motivational role of choice in learning, based on self-determination theory. Theoretical principles and current research on student motivation and engagement are described. Conditions under which choice promotes students' intrinsic motivation are then presented.

THE CHALLENGE OF MOTIVATING STUDENTS

The seemingly unmotivated student poses a particularly frustrating challenge for teachers, as every teacher knows how incredibly fun and engaging learning can be. The joy of learning is demonstrated to us by children beginning at the earliest ages. From the toddler with a blossoming vocabulary who wants to know the name of every object in sight, to the inquisitive preschooler's neverending questions, young children's natural curiosity and motivation to learn is abundantly evident. Yet, for some children, classrooms appear to act as a suppressant for their once insatiable appetite for learning. For too many students, motivation appears to decrease steadily as they progress through school (Anderman & Maehr, 1994; Harter, 1981). An important yet perhaps overlooked factor in students' decreasing motivation may be school environments that provide students progressively fewer opportunities for choice and decision making (Deci & Ryan, 2002; Otis, Grouzet, & Pelletier, 2005).

Most teachers believe that choice promotes motivation and learning (Flowerday & Schraw, 2000), a belief substantiated by much of the research on student motivation (e.g., Eshel & Kohavi, 2003; Hardre & Reeve, 2003). The positive impact of providing students with well-designed, meaningful choice has been demonstrated across academic domains and an array of student populations (e.g., Assor, Kaplan, & Roth, 2002; Martin, Mithaug, Peterson, Van Dyke, & Cash, 2003). And, yet, choice often plays a minimal role in students' learning experiences (Deci & Ryan, 2002; Otis et al., 2005). When choice is offered to students, it is typically in the areas of project topics, assessment, social arrangements, (e.g., seating and group membership) and classroom procedures (Flowerday & Schraw, 2000). However, many teachers feel threatened by the loss of control inherent in student choice (Flowerday & Schraw, 2000), or fear that offering students choice will reduce their productivity or lead to off-task behavior (Boggino, Flink, Shields, Seelbach, & Barrett, 1993). When teachers do provide students with choice, they often do so discriminately. Research shows that low-income and racial minority students, low-achieving students, and students with disabilities are least likely to be provided with opportunities for choice (Duke, 2000; Flowerday & Schraw, 2000; Wehby, Symons, & Shores, 1995). Unsure of how to most effectively incorporate choice in the classroom, some teachers may forego choice altogether. The present article provides a theoretical rationale for the importance of choice for student motivation, and describes the conditions under which choice is most motivating.

[1]Center for Applied Special Technology (CAST)

Address correspondence to Miriam Evans, Center for Applied Special Technology (CAST), 40 Harvard Mills Square, Suite 3, Wakefield, MA 01880; e-mail: mevans@cast.org

© 2015 International Mind, Brain, and Education Society and Wiley Periodicals, Inc.

THE SELF-DETERMINATION THEORY OF MOTIVATION

The role of choice in human motivation is best understood through the self-determination theory of motivation (SDT; Ryan & Deci, 2000), which places particular emphasis on the role of autonomy in promoting intrinsic motivation. According to SDT, an individual's sense of autonomy represents a feeling of full volition and "choicefulness" regarding one's activities and goals (Deci & Ryan, 1985). This feeling emerges from having opportunities to engage in self-direction, which includes setting goals based on personal values and interests, making decisions around the necessary steps to achieve those goals, and taking initiative in progressing toward those goals in order to determine one's own future (Deci & Ryan, 1985). According to SDT, autonomy is best supported through the provision of choice and the removal of external controls, such as pressures or rewards (Ryan & Deci, 2000). As such, choice plays a key role in models of student motivation. Applying the principles of SDT to instructional practice, Katz and Assor (2007) propose that motivating choices are those that fulfill the students' need for autonomy, competence, and relatedness.

Translating the importance of autonomy to instructional design has led to increasing emphasis on enabling students to take an active role in their learning. This is reflected in instructional practices that focus on allowing students to set their own goals, make choices around their learning activities, and base decisions on self-identified needs and preferences (Schunk, 1992). Such practices are based on a growing recognition that students must be given opportunities to experience autonomy to enhance their intrinsic motivation to engage in learning activities. When students feel autonomous, they are more likely to see the value in a given learning task and thus be more engaged in the activity (Deci, Ryan, & Williams, 1996; Grolnick, Ryan, & Deci, 1991).

THE POWER OF CHOICE

Despite evidence for the effectiveness of choice in promoting student motivation and engagement, there has been little impact on instructional practice (Katz & Assor, 2007). Failure to translate research findings on the effectiveness of choice to instruction may lie in the lack of clarity among the literature regarding when, how, and for whom to provide choices in the classroom. Confusion among educators is unsurprising, given the growing debate over the benefits and drawbacks of offering choice in the classroom, as well as some of the inconsistent findings in the research literature regarding the effects of choice in various settings (Katz & Assor, 2007). Studies exploring the impact of choice on student motivation and performance have yielded mixed results, with some finding positive effects (e.g., Cordova & Lepper, 1996; Jolivette, Wehby, Canale, & Massey, 2001), and others finding negative effects (e.g., Flowerday, Schraw, & Stevens, 2004) or no effect (e.g., Reeve, Nix, & Hamm, 2003).

To make sense of the conflicting information regarding the impact of choice on student outcomes, it is helpful to understand that there are two primary ways in which choice can benefit learners. First, consider choice as a noun. Here it can be understood as the presence of options, as illustrated in the principles of Universal Design for Learning (UDL; Rose & Meyer, 2002). UDL is a framework for curriculum development that seeks to give all individuals equal opportunities to learn. The UDL framework emphasizes the importance of providing options to address the wide range of skills, needs, and interests that students bring to learning. By providing multiple options for accessing information, expressing knowledge, and becoming engaged in learning, teachers can ensure that the learning environment is equipped to meet the needs of the widest possible range of learners. Second, consider choice as in the verb of choosing. It is the act of choosing itself that fosters an individual's sense of free will, a necessary component of autonomy. To fully understand the role of choice in supporting students' autonomy, it is necessary to recognize both the choice and the choosing as essential components. Based on the principles of SDT and UDL, and evidence-based practices for supporting student autonomy and self-determination, the following sections describe factors that influence how effective providing choice can be in promoting intrinsic motivation and engagement in learning. As in previous efforts to describe how to incorporate effective choice making in instruction (Katz & Assor, 2007), we focus on marrying SDT and classroom practice, and we articulate how the UDL framework might serve as a bridge in this effort.

CHOICE SHOULD BE RELEVANT AND MEANINGFUL

According to SDT, an individual's sense of autonomy comes from opportunities to make choices that reflect one's personal goals, interests, or values (Deci & Ryan, 1985). Consistent with this view, research on student choice and motivation suggests that what students perceive as highly motivating is not merely the act of choosing, but mostly the extent to which the available choices relate to the students' personal values and goals (e.g., Assor et al., 2002). Although there is some evidence to show positive effects of choices that appear to be trivial or irrelevant (e.g., Cordova & Lepper, 1996), these effects tend to be minimal and short-lived (Assor et al., 2002; Schraw, Flowerday, & Reisetter, 1998), suggesting that the major motivating property of choice is not solely the act of choosing. Instead, to be experienced as autonomy-supportive, choice must be perceived

as being personally relevant and meaningful to the chooser (Flowerday & Schraw, 2000; Katz & Assor, 2007). Giving students access to meaningful choice by providing options that are culturally relevant, age-relevant, and personalized and contextualized to students' lives will promote intrinsic motivation (Rose & Meyer, 2002). Of course, not all students will find the same tasks or activities equally relevant to their personal values and goals. Thus, it is important teachers are able to provide a variety of options that can appeal to a range of individuals.

It is important to note that self-determination theorists do not necessarily assume that most school activities should or can be inherently valuable to students. Rather, it is posited that under autonomy-supportive conditions, extrinsically motivating activities can be internalized, and therefore transformed into intrinsically motivating activities (Deci et al., 1996). This process of internalization occurs when teachers engage in behaviors that clarify the relevance of schoolwork for students, behaviors that Assor et al. (2002) refer to as fostering relevance. This category of autonomy-supportive behaviors involves teachers helping students to understand and recognize learning activities as relevant to and supportive of their self-determined goals. Thus, when offering students choices of various learning tasks, teachers can be most supportive of student's autonomy by demonstrating and explaining the relevance of those tasks to the personal interests and goals of their students (Assor et al., 2002; Reeve, Jang, Hardré, & Omura, 2002).

CHOICE SHOULD BE COMPETENCE-ENHANCING

The perceived value of available choices is a critical component of autonomy support; however, it is not the only factor that determines whether choice is intrinsically motivating. To be intrinsically motivated to engage in a learning task, especially one that requires prolonged effort and focus, a student must feel that they are capable of achieving success and competence within that task (Deci & Ryan, 1985). Thus, an important motivating factor of choice is the degree to which the choice is competence-enhancing.

Competence-enhancing choice is determined by the extent to which the various options constitute an optimal challenge to students (Katz & Assor, 2007). To experience an optimal challenge, students should be provided with choices of intermediate difficulty, as determined by each student's abilities and developmental level (Katz & Assor, 2007). Research finds that students are most motivated by tasks at this intermediate level of difficulty (Deci & Ryan, 1985; Pintrich & Schunk, 2002). In contrast, choices that are too easy or too difficult can lead to boredom (in the former case) or frustration (in the latter case), and therefore undermine motivation. Aligning choices with students' developmental levels is closely related to Vygotsky's (1978) concept of teaching within a student's zone of proximal development. To ensure that choices are optimally challenging and thus competence-enhancing, teachers need tools and supports that allow them to continually assess their students' knowledge, skills, and perceived competence in a given domain. Teachers can provide optimally challenging choices by matching the complexity and difficulty of the task to their students' knowledge, skills, and perceived competence in the domain in which the choice is offered (Deci et al., 1996; Katz & Assor, 2007; Ryan & Deci, 2000).

In addition to providing options of appropriate challenge and demand, choices must be accompanied by appropriate levels and types of resources. Once a student has chosen an optimally challenging option, he or she must have access to the appropriate amount and type of resources necessary for successful completion of the task. This important balance between the level of challenge in the environment and one's perceived skills and resources is described by several theories as the driving force in shaping motivation and cognitive engagement (e.g., Lazarus & Folkman, 1986). Experiences of deep engagement are dependent on these two factors being in balance with one another, so that the individual perceives the demands and resources of a task as being in alignment with their own strengths and weaknesses (Blascovich, Mendes, Tomaka, Salomon, & Seery, 2003). If demands were to increase while resources were to remain constant, the potential for high anxiety and disengagement increases. Likewise, as resources increase but demands remain constant, the potential for boredom and disengagement increases. The deepest engagement, and consequently, the most positive conditions for learning, occur when both the challenge of the task and one's resources or skill level are high and closely matched (Blascovich et al., 2003).

Of course, wide variability exists among students in regard to the knowledge, skills, and perceived competence they bring to a given domain. Likewise, the same variability exists within students across time and across different learning domains. Teachers can help to ensure that all students are appropriately challenged, by providing students with options of varying degrees of task difficulty, as well as options of varying types and levels of resources. Providing a range of demands and possible resources allows students to find challenges that are optimally motivating (Rose & Meyer, 2002).

CHOICE SHOULD BE PROVIDED IN JUST THE RIGHT AMOUNT

An important caveat to consider regarding the benefits of choice is that according to the research on decision making, when it comes to choice there can indeed be too much

Questions for teachers to ask themselves when considering choices

- Can students adjust the learning experience to meet their needs?
- Are the choices I am / curricular materials are offering personally relevant to my students?
- Have I explained the relevance of the choices?
- Do the choices provide the right level of challenge?
- Am I / are the curricular materials providing varying degrees of support with each choice?

Fig. 1. Questions for teachers to ask of themselves or their chosen curricular materials regarding student choice.

of a good thing. A "complex decision-making environment" is defined in the decision-making literature as an environment that offers many different options or requires consideration of many different attributes (Payne, 1976). There is substantial research showing that under these conditions the profusion of choices can become overwhelming and actually inhibit engagement (e.g., Iyengar & Lepper, 2000). Most of us can relate to the experience of being overwhelmed by an excess of options—think of the frustration and indecisiveness one feels when presented with a restaurant menu the size of a short novel. Iyengar, Huberman, and Jiang (2004) describe this situation as "choice overload." Under conditions of choice overload, individuals are no longer motivated by the availability of options to choose from and instead feel burdened by the task of choosing. When choosers feel unable to handle the overload of choices, they often opt not to choose at all or ask that someone else make the choice for them. Thus, providing an excess of options may undermine the motivational benefits of choice.

Based on the research regarding choice overload (Iyengar et al., 2004), it is evident that learning contexts that offer a limited, and thus, manageable, number of choices are more motivating to students than contexts that offer an extensive number of choices. The optimal amount of choice will vary among students, as some students may prefer or find manageable a wide variety of choices, whereas others will feel overwhelmed by having more than a couple of choices within one task, or by having choices in more than one attribute or dimension of a task. The optimal amount of choice will depend on a multitude of factors, including an individual's skill level and perceived competence and experience in the domain in which the choices are being offered, as well as other factors related to his or her self-regulatory and executive functioning skills (Iyengar et al., 2004). To help ensure students can fully benefit from the provision of autonomy-supportive, competence-enhancing choice, teachers can try to ensure students have a sufficiently restricted set of options and sufficient time to choose among them. See Figure 1 for suggested questions to guide this effort.

CONCLUSION

Choice plays a critical role in students' intrinsic motivation for learning (Deci et al., 1996). By providing meaningful choice in the context of classroom activities, teachers can support students' autonomy and foster deep and prolonged engagement in learning (Deci et al., 1996; Grolnick et al., 1991). This article has demonstrated that merely offering choice is not in itself motivating. In fact, in some cases it can even reduce motivation (Flowerday et al., 2004; Iyengar & Lepper, 2000). In order for choice to be motivating, it should be relevant and meaningful, competence-enhancing, and provided in just the right amount. When these conditions are met, choice is likely to enhance students' intrinsic motivation and lead to deep and meaningful engagement in learning. Most teachers feel that choice is important, but may be unsure of how or when to best incorporate it in a way that promotes students' intrinsic motivation. Thus, the need for tools to support teachers in selecting and optimizing choice is critical. Likewise, instructional tools are needed that support students to engage in autonomous decision making, and to identify and select choices that are personally relevant and competence-enhancing. Such tools may be well suited in a digital learning environment where the provision of choice is easier in many ways, specifically with regard to personalization. However, nondigital alternatives are just as necessary and may offer simple solutions to help guide teachers as they embed choice into a lesson plan.

REFERENCES

Anderman, E. M., & Maehr, M. L. (1994). Motivation and schooling in the middle grades. *Review of Educational Research*, *64*, 287–309. doi:10.3102/00346543064002287

Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacher behaviors predicting students' engagement in schoolwork. *British Journal of Educational Psychology*, *72*, 261–278. doi:10.1348/000709902158883

Blascovich, J., Mendes, W. B., Tomaka, J., Salomon, K., & Seery, M. (2003). The robust nature of the biopsychosocial model challenge and threat: A reply to Wright and Kirby. *Personality and Social Psychology Review*, *7*, 234–243. doi:10.1207/S15327957PSPR0703_03

Boggino, A. K., Flink, C., Shields, A., Seelbach, A., & Barrett, M. (1993). Use of techniques promoting students' self-determination: Effects on students' analytic problem-solving skills. *Motivation and Emotion*, *17*, 319–336. doi:10.1007/BF00992323

Cordova, D. I., & Lepper, M. R. (1996). Intrinsic motivation and the process of learning: Beneficial effects of contextualization, personalization, and choice. *Journal of Educational Psychology*, *88*, 715–730. doi:10.1037/0022-0663.88.4.715

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum Press.

Deci, E. L., & Ryan, R. M. (2002). Overview of self-determination theory: An organismic dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self determination research* (pp. 3–33). Rochester, NY: University of Rochester Press.

Deci, E. L., Ryan, R. M., & Williams, G. C. (1996). Need satisfaction and the self-regulation of learning. *Learning and Individual Differences*, *8*, 165–183. doi:10.1016/S1041-6080(96)90013-8

Duke, N. K. (2000). For the rich it's richer: Print experiences and environments offered to children in very low- and very high-socioeconomic status first-grade classrooms. *American Educational Research Journal*, *37*, 441–478. doi:10.3102/00028312037002441

Eshel, Y., & Kohavi, R. (2003). Perceived classroom control, self-regulated learning strategies, and academic achievement. *Educational Psychology*, *23*, 249–260. doi:10.1080/0144341032000060093

Flowerday, T., & Schraw, G. (2000). Teachers' beliefs about instructional choice: A phenomenological study. *Journal of Educational Psychology*, *92*, 634–645. doi:10.1037/0022-0663.92.4.634

Flowerday, T., Schraw, G., & Stevens, J. (2004). The role of choice and interest in reader engagement. *The Journal of Experimental Education*, *72*, 93–114. doi:10.3200/JEXE.72.2.93-114

Grolnick, W. S., Ryan, R. M., & Deci, E. L. (1991). The inner resources for school achievement: Motivational mediators of children's perceptions of their parents. *Journal of Educational Psychology*, *83*, 508–517. doi:10.1037/0022-0663.83.4.508

Hardre, P. L., & Reeve, J. (2003). A motivational model of rural students' intentions to persist in, versus drop out of, high school. *Journal of Educational Psychology*, *95*, 347–356. doi:10.1037/0022-0663.95.2.347

Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. *Developmental Psychology*, *17*, 300–312. doi:10.1037/0012-1649.17.3.300

Iyengar, S., Huberman, G., & Jiang, W. (2004). How much choice is too much? Contributions to 401(k) retirement plans. In O. S. Mitchell & S. P. Utkus (Eds.), *Pension design and structure: New lessons from behavioral finance* (pp. 83–97). Oxford, England: Oxford University Press.

Iyengar, S., & Lepper, R. (2000). When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology*, *79*, 995–1006. doi:10.1037/0022-3514.79.6.995

Jolivette, K., Wehby, J. H., Canale, J., & Massey, G. (2001). Effects of choice-making opportunities on the behavior of students with emotional and behavioral disorders. *Behavioral Disorders*, *26*(2), 131–145.

Katz, I., & Assor, A. (2007). When choice motivates and when it does not. *Educational Psychology Review*, *19*, 429–442. doi:10.1007/s10648-006-9027-y

Lazarus, R. S., & Folkman, S. (1986). Cognitive theories of stress and the issue of circularity. In M. H. Appley & R. Trumbull (Eds.), *Dynamics of stress: Physiological, psychological, and social perspectives* (pp. 63–80). New York, NY: Plenum Press.

Martin, J., Mithaug, D., Peterson, L., Van Dyke, J., & Cash, M. (2003). Increasing self-determination: Teaching students to plan, work, evaluate, and adjust. *Exceptional Children*, *69*, 431–447. doi:10.1177/001440290306900403

Otis, N., Grouzet, F. M. E., & Pelletier, L. G. (2005). Latent motivational change in an academic setting: A 3-year longitudinal study. *Journal of Educational Psychology*, *97*(2), 170–183. doi:10.1037/0022-0663.97.2.170

Payne, J. W. (1976). Task complexity and contingent processing in decision making: An information search and protocol analysis. *Organizational Behavior and Human Performance*, *16*, 366–387. doi:10.1016/0030-5073(76)90022-2

Pintrich, P. R., & Schunk, D. H. (2002). *Motivation in education theory, research, and applications* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

Reeve, J., Jang, H., Hardré, P., & Omura, M. (2002). Providing a rationale in an autonomy-supportive way as a strategy to motivate others during an uninteresting activity. *Motivation and Emotion*, *26*, 183–207. doi:10.1023/A:1021711629417

Reeve, J., Nix, G., & Hamm, D. (2003). Testing models of the experience of self determination in intrinsic motivation and the conundrum of choice. *Journal of Educational Psychology*, *95*, 375–392. doi:10.1037/0022-0663.95.2.375

Rose, D., & Meyer, A. (2002). *Teaching every student in the digital age: Universal design for learning*. Alexandria, VA: Association for Supervision and Curriculum Development.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68–78. doi:10.1037/0003-066X.55.1.68

Schraw, G., Flowerday, T., & Reisetter, M. (1998). The role of choice in reader engagement. *Journal of Educational Psychology*, *90*, 705–714. doi:10.1037/0022-0663.90.4.705

Schunk, D. H. (1992). Theory and research on student perceptions in the classroom. In D. H. Schunk & J. L. Meece (Eds.), *Student perceptions in the classroom* (pp. 3–23). Hillsdale, NJ: Lawrence Erlbaum.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Wehby, J. H., Symons, F. J., & Shores, R. E. (1995). A descriptive analysis of aggressive behavior in classrooms for children with emotional and behavioral disorders. *Behavioral Disorders*, *20*, 87–105.

Copyright of Mind, Brain & Education is the property of Wiley-Blackwell and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Parent Involvement Facilitators: Unlocking Social Capital Wealth

Margaret M. Ferrara

Abstract

This case study provides an overview of a family outreach intervention that supports student retention in school through a school–home communication link. This intervention structure, which employs staff appropriately called parent involvement facilitators (PIFs), is one that school districts have employed to facilitate family engagement in schools and to help parents build their sense of efficacy to support their children's success in school. The intention of the PIF is to provide direct services to families whose child or children are identified as at risk of not completing high school. What has not been studied is how this outreach program works in terms of family support, especially for those in an urban setting with language complexities, and how it helps provide social capital to the family and also to the PIF in this reciprocal process of working together to help the children complete high school.

Key Words: parent involvement facilitators, at-risk indicators, ninth grade

Introduction

Students who drop out of school face many negative consequences including decreased pay, higher unemployment, higher rates of incarceration, and even early deaths (Donahue, 2011; Martin & Halperin, 2006). Moreover, dropouts cost the nation billions of dollars in lost wages and taxes, welfare benefits, and costs associated with crime (Martin & Halperin, 2006). Dynarski et al. (2008) gave a number of recommendations for dropout prevention,

including using existing data to identify students who are at risk of dropping out and pairing at-risk students with adults in the school for "addressing academic and social needs, communicating with the families, and advocating for the student" (Dynarski et al., 2008, p. 16).

Many school districts have instituted dropout identification and intervention programs based on the work of Dynarski and others, such as the Building Bridges consortium in Washington state (2011) and the Consortium on Chicago School Research (Allensworth & Easton, 2007). By considering factors such as performance on standardized tests, number of credits earned, attendance, and other issues associated with school failure, school districts are able to determine which students are at risk of dropping out. Typically, this is largely based on quantitative data. While data have power in substantiating cases that create public interest and press, data do not provide the total complex picture for dropout prevention (Larson, 2007; Somers & Piliawsky, 2004).

This case describes an intervention that marries two interventions suggested in the Dynarski report: at-risk identification, and adult support in the school linked to the family, namely, a parent involvement facilitator (PIF). The role of the PIF is to serve as a communication link with families whose children are not on target to graduate from high school and to provide "select" families with updates on the progress of their children (e.g., attendance, achievement scores) during the school year (Howland, Anderson, Smiley, & Abbott, 2006). The term "select" is used because the students of these parents have been identified as at high risk of not completing high school. This risk index places elementary, middle, and high school students along a continuum from "no risk" to "high risk" to facilitate early identification and, even more importantly, early intervention to prevent these students from dropping out of school. The risk indicators alone are not enough to reduce dropout statistics. The indicators merely sound an alarm; listeners must hear and respond. This means that interventions are typically conducted on a case by case basis.

Theoretical Perspective of the Case

Parents play an influential role in the academic and social success of their children; yet, there is an inverse relationship in parent involvement as students move through middle school and high school (Deslandes & Bertrand, 2005). It is a time when some students, teachers, and parents need more collaboration. Unfortunately, it is also a time when parents have a less visible presence at the school. Teachers, too, in secondary schools tend to experience a sense of disconnect from families (e.g., Brooks, 2009; Ferrara, 2009; Feuerstein, 2000) and a lack of communication between the classroom and the home setting

(Brooks, 2009; Eberly, Joshi, & Konzal, 2007). For some families, the school is an intimidating place. In some cases, it is also a time when parents are trying to understand their role as a parent and reach a level of confidence in helping their children learn (e.g., Hoover-Dempsey et al., 2001). There appears to be a positive carry-over influence, however, when parents are involved. Various studies (e.g., Lee & Burkham, 2002; Trusty, 1996) have shown that secondary students tend to earn higher grades, set higher career goals, and have fewer discipline problems when parents are involved in school during the middle and high school years. Parents have reported that they need more guidance on how to involve themselves in their children's education during the secondary years (Gould, 2011), but this is not always possible for teachers, who report limited time and expertise to work with parents of secondary students (Kelly, 2014).

On the other hand, family support is most challenging during the high school transition time. Transition to high school is a growing area of study in educational research as well as a targeted area of prevention and intervention programs in K–12 educational institutions (Chen & Gregory, 2009). Students who have already demonstrated at-risk behaviors in middle school become even more vulnerable to falling detrimentally behind in the critical first year of high school (McCallumore & Sparapani, 2010). Researchers (e.g., Green et al., 2007; Walker et al., 2005) also recognize from three decades of studying this issue that families play an important role in their children's transition. The question that has challenged researchers and educators alike is how to support families most effectively during their children's secondary school learning experiences to help students complete their high school education.

Raising the Question

This case study captures a close look at PIFs who provide a direct link to parents whose children are at varying degrees of risk of dropping out of school at the critical grade level—ninth grade (Neild & Balfanz, 2006). In this case, the PIFs have the power of the language of the families—Spanish—and understand the stories of the families based on personal cultural experiences. The PIFs also bring a special human element to the home and bridge a communication gap that cuts through the "educanese" lingo of education and a complex data literacy that confronts families when they want to understand, "How are my children doing in school?" A question raised in any such study is: "Are we talking about an intervention that is targeting parents, students, or families?" (Dufur, Parcel, & Troutman, 2013). In the case of this study, the target is the family. The intervention, however, begins with the parent or guardian. The intent is that the impact of the program moves into the family structure so there is a collaborative team—the school and the home.

Researchers identify a number of early signposts to identify students at risk of dropping out—absenteeism, mobility, and academic failure—that can lead to a pattern of disengagement identifiable as early as middle school (Balfanz & Byrnes, 2006; Balfanz, Herzog, & MacIver, 2007; Neild & Balfanz, 2006). Furthermore, personnel in school districts are capable of recognizing at least half of future dropouts by the end of sixth grade and three-quarters of them by ninth grade. These early warning signs serve as points of reference linked to achievement, attendance, and behavior, and help put targeted programs and strategies into place early (Balfanz et al., 2007). Researchers (e.g., Balfanz et al., 2007; Dynarski et al., 2008; Hill & Tyson, 2009) have suggested that reforms need to be put in place at the points where students transition from one level of schooling to another. Setting up students for successful transitions to elementary, middle, and high school involves taking into account not just students' academic needs but also their needs for social supports and clear expectations for college and career goals (Balfanz & Bridgeland, 2007; Sanders, 2009).

One of the first steps to set dropout prevention into motion is to have multiple interventions available. In other words, one size does not fit all because of the complexity of dropout causality. Lehr (2004) reports that most dropout prevention strategies can be categorized into five types: personal/affective (individual counseling); academic (tutoring); school structure (reducing class size or creating an alternative school); work-related (vocational training or volunteer work); and family outreach (home visits).

This case provides an overview of one of these prevention strategies, family outreach, and its degree of effectiveness. The PIF structure is a strategy school districts have employed to facilitate family engagement in schools and to help parents build their capacity to work with the complexities of the school system. In this case, the task of the PIF is to provide support beyond the family link by also serving as a teacher support and as a data gathering person for record keeping about student progress (Sanders, 2008, 2009). What has not been studied with this outreach program is the degree to which these strategies work in terms of families, especially those in an urban setting with language complexities. Equally as interesting is the question of how this program personally impacts the PIFs, providing social capital to themselves and their own families in the process.

Ultimately, the purpose of this case study is to look more in depth at the PIF program from the lens of the facilitator in relation to the parent to see what creates the elements of social wealth. The intent is to gain an understanding of how the family and PIF not only work together, but also how each one works to gain a stronger collaboration to support the student and help build his or her resiliency to stay in school to graduate.

These questions helped guide this exploration:

- What are essential dispositions and necessary behaviors that are important in a PIF?
- What effective strategies serve as collaborative interventions for the PIFs and families to use to help students to stay in school?
- Using the theory of social capital, what has been learned to date about this program that can be shared with others who want to use this intervention?
- What are other unintended outcomes that have made a difference in using this intervention?

The overall purpose of this case study is to provide preliminary evidence on the effectiveness of a program that builds parents' efficacy to help their at-risk students stay on track for high school graduation through one-on-one support.

The Meaning of Social Capital and Parent Involvement

Social capital, as defined by Coleman (1988), is explained as a source of wealth and power that is inherent in society based on one's network of connections. More simply explained, social capital is composed of two general elements: the social relationships that one possesses, and the degree to which the individual has quantity and qualities in those relationships and their resources (Portes, 2000). To be successful in a school environment, families need to have learning resources and a wealth of social capital to help with achievement goals. Many families lack these resources; they are not engaged in schools or the community and are limited by lack of proficiency in English, economic wealth, or technology. Coleman goes on to explain one of the resources of social capital is the resource of information channels. These are social relationships that help one acquire information, such as finding out what an excellent school is or how to access educational opportunities at a signature charter school in the school district.

Ultimately, social capital wealth enhances human capital. The family and the community play a key role in fostering the development of social capital. Family background is analytically separable into three different parts: financial capital, human capital, and social capital, all of which are necessary. Coleman (1988) explains these parts; in a simplistic form, human capital is measured by parents' education. Social capital is evaluated by the relationship between children and parents (and other family members). It gives children access to the adult's human capital and depends on both the parents' physical presence and the personal attention they give their children. "If parents' human capital is not complemented by social capital embodied in family relations, it is irrelevant to the child's educational growth that the parent has a great deal, or a

small amount, of human capital" (Coleman, 1988, p. 110). Beyond the family, social capital is found in relationships outside the home and with the parents' relationships with the institutions of the community, in this case, the school.

The understanding of the importance of cultural capital has been brought into focus through the work of Lee and Bowman (2006) as well as Croninger and Lee (2001). These researchers have noted that teachers are critical resources who provide students with social capital, that is, tools to help them be successful in school to graduate. Beyond this work, other researchers have looked beyond the classroom and explored other forms of "capital" within the school setting: principals (Fullan, 2014), other students (Gottfredson & DiPietro, 2011), families (Crosnoe, 2004), and, as in this study, support personnel (Fritch, 2000).

The Case Method to Capture the Essence of Social Capital Connections

In order to capture the voices of the PIFs "heard" in this study, the researcher used a case study format (Stake, 2005) supported by a comprehensive research data analysis guided by Denzin and Lincoln (2005). The study took place over a period of three years to enable the researcher to gain rich, substantive data from multiple perspectives (PIFs usually stayed with the program for an average of a year) and informal statistical reports. Triangulated data were drawn from notes based on discussions with PIFs, recorded interviews with school facilitators (e.g., school counselor, assistant principal), and scripts used for conference presentations over the three years. Notes and interviews were verified for accuracy. Themes, chronologically ordered, emerged from the discussion notes and were used to compare perceptions of the PIFs on a yearly basis over the three-year period. Data from these various sources were further collapsed to analyze lessons learned from the study. The word "parent" and "family" were used interchangeably in some sessions in the first semester and less in the second semester of this study. By year three, contacts were typically noted in reports as "mother" rather than "parent" or "father." This was because much of communication work was based on using the telephone; mothers typically answered the phone more frequently than fathers. Also mothers' phone numbers were more readily provided as contacts as compared to the phone numbers of the fathers.

The qualitative design used for this program analysis consisted of three data points to build a rich case: (1) broad analysis of data collected through PIF tracking tab to identify the frequency and nature of PIF contact with parents; (2) discussion sessions with PIFs to understand what strategies were being used

to engage families; and (3) PIF reflective writings on what they learned about themselves and the process of working with students and their families. To a lesser degree, interviews with school facilitators and the first year program supervisor were used to provide additional descriptions to enrich this case study.

Student Identification Based on Risk Indicators

The PIF program studied here took place in a large school district in the western United States with a population of 63,000 students. Some ninth grade students were identified as at risk of dropping out by five risk indicators based on the work of Balfanz et al. (2007). In the first year, students from 12 comprehensive high schools were identified as candidates for the program. These were students who had a history of at least three of these criteria: non-proficiency on eighth grade standardized test scores in English Language Arts/mathematics; poor attendance; changing schools in the past year; retained for two years in the same grade; and a record of being suspended from school at least once in the past year. For each of these risk indicators, students received a rating based on a rubric assigning 0, 1, or 2 points for attendance, transiency, retention, and CRT scores. The risk index of suspension was based on a score of 0 (never suspended) or 1 (suspended). Each student receives a composite risk index score at the conclusion of certain school years (Grades 1–6; Grade 7–9; Grade 10; Grade 11–12). Students in this study were identified using this risk index at the end of their eighth grade year and placed in risk order from most at risk to least at risk. Those most at risk were the students and families who were targeted to receive support in their ninth grade year through the PIF intervention.

Role of the Parent Involvement Facilitator and Training Support

Twelve schools in the school district participated in the first year, and eight continued into the second and third years of the program (Crain, Davidson, & Ferrara, 2013a; Ferrara, Crain, & Davidson, 2013). In the first year of the program, the school district, along with a community agency, secured funding through Americorps for 12 part-time PIFs and a full-time field coordinator. The field coordinator's role was to work closely with the PIFs to increase their proficiency in using the school district data software and teaching the software to parents. Additionally, the field coordinator monitored the workstations for grant compliance and PIF support. The PIFs were selected for their position based on their knowledge of working with parents, their bilingual ability

(Spanish-speaking), and their time availability (20 hours per week during school time). Even though not all 12 schools had a high Hispanic population, the families targeted in these schools were largely Hispanic. The PIFs received some training in using the parent portal system and in understanding the characteristics of an at-risk learner through school district professional development staff. Their main role was to contact as many parents as possible (given the phone numbers that each school had available) and to help parents understand how to access the parent portal. It was also important for the PIFs to enter all of their attempts, contacts, and follow-up contacts on the parent portal system. All PIFs received an initial training at the school district's personnel computer lab and training facility. During this initial training, FERPA (Family Educational Rights and Privacy Act) law, school policies, and employment issues were discussed. A large part of the training time was centered on learning the school district's software program. Additionally, the PIFs were shown their student list. After reviewing these lists, the PIFs were given training on family issues and dynamics, resources available, and basics in contacting the identified families. In addition to this initial training, every PIF attended a required semimonthly meeting with the grant administrator. When ongoing training was provided by the school district, PIFs had the opportunity to interact with one another to share insights and methods in helping families.

Changes were made for the second year of the study based on feedback from the PIFs and school administrators after the first year of the study. First, in the second year, the school district narrowed the number of schools to eight but increased the number of hours that a PIF was assigned to a school to full-time (40 hours). The number of hours of training for the PIFs was increased to four days before they began their assignments at their schools. The PIFs received training in using the electronic portal system (Basic Infinite Campus), the parent portal data tab for Infinite Campus, FERPA and mandated reporting, understanding high school graduation requirements, and the multiple school district websites. They also received several professional development workshops on family engagement, family–school partnerships, the intent of the re-engagement centers (high school dropout prevention initiatives), relationship building with hard-to-reach families, and how to handle conflict. Only a few of the PIFs returned in year two, mainly because the others did not have the time necessary for the position or had elected to take another higher paying position.

A more concentrated effort was made in the second and third years to help PIFs reach data-driven decisions based on high-risk indicator data. Data were reviewed at the beginning of each semester. These data included the number of at-risk students in each of the targeted ninth grades in the eight schools at the beginning and the midpoint of the year. Data also included student mobility,

number of families reached from one semester to another, and percentage of families reached.

The PIFs in years two and three also participated in a "field trip" to their assigned school and were introduced to the faculty and staff. An important difference, too, was that the PIFs were assigned to a school administrator, which added another positive impact. In many schools, the freshmen dean was chosen as the supervisor, while a few chose the head counselor. Either configuration allowed the PIF to be closely aligned with ninth grade students at each school. At the beginning of each school year, PIFs receive a list of incoming high-risk ninth grade students and are asked to contact as many of their parents as possible to work to build a positive relationship with them, to help them understand how to access the parent portal, and to link them to any additional family supports they might need to ensure students' successful continuation in high school (e.g., tutoring, translation services, financial support for families, counseling). All PIFs were required to document which students' families they contacted using the school district's student information data tracking link to the school district parent portal system. The information entered included a description of the outcome of the contact (e.g., family was linked to supports; no call back from family) and any additional notes the PIF had about the contact with the family. PIFs scheduled semi-monthly meetings with their community liaison and other facilitators involved in parent programs in the school district to share insights and challenges in their roles.

Data Collection Opportunities

Three times a year during PIF training sessions, each of the PIFs from Grades 8–12 took part in one-hour personal experience discussions. In order to build a rich data understanding, the transcripts from the individual interviews and discussions were read in their entirety at least twice, with marginal notations indicating short phrases, ideas, or key concepts (Denzin & Lincoln, 2005). Coding was completed for all sentences and phrases of each participant in order to capture the essence of what the participant shared. After the initial coding, each participant's data file was "filtered" to identify common codes. This study employed this method of triangulation by incorporating individual interviews, discussion notes, member checks, and archival program documents. The case study also utilized data source triangulation (Stake, 1995) by conducting discussion sessions at three different periods of the year. Through these systematic steps, a picture of the challenges and successes of PIFs became clearer over time.

Other data collected over the three-year period were analyzed as an ongoing process. In the first year, the PIF supervisor provided insights on the relationships and challenges in the start-up of the program. In the second and third years, data were included in this case from presentations at the national level (e.g., American Educational Research Conferences). In year three, two informal interviews with school-based facilitators were included to provide a broader perspective of the impact of the program at the school level.

Unfolding the Evidence: Looking More Closely at the Parent Involvement Facilitator

One of the eye-opening lessons learned quickly was that the role of the parent involvement facilitator was unique. Those who were successful in the position had qualities beyond the basic job description of being able to speak Spanish. In years two and three, they worked 40 hours a week in this role and became skilled in entering data in the school district reporting system. The most significant quality of being a successful PIF was demonstrating a high level of caring about students and their families. The PIFs who left their position after a few months were those who found the job too challenging. They reported that it was a task that required persistence, as they were required to make phone calls on a daily basis, be highly organized in maintaining details, and remain flexible in working in a school setting with multiple interruptions and unanticipated expectations.

One of the PIFs aptly described her role as very important, and she clarified this by sharing her personal experience: (Note: all comments as verbatim)

> My parents did not have the support to finish school, and I had the support of my brothers. If there are older siblings in the family, they can provide support. It can be others too—like my cousins. I moved here from California. I made it happen because I had my siblings to help me finish school.

When asked the question, "What is the most outstanding characteristic you have that makes you a highly successful PIF?" the frequent answer was the ability to communicate. Because PIFs were able to speak Spanish, they also noted this as important. As one added, "I can understand the language, and this helps me understand the perspective of the family." Other attributes frequently cited during the three years that this question was asked were empathy, persistence, patience, respect, and the ability to suspend judgment. Ironically, these criteria were those identified early on by PIFs as necessary qualities to be successful in this position.

An assistant principal acting as a supervisor at one of the schools where there was a PIF program in place added some other qualities:

> I use to think it was important to be a graduate of this school. Now, I would say that is not crucial…It is the work ethic and able to work as a team member and have follow through…They [PIFs] need to be able to handle tough conversations and know how to refer the parent to someone else.

One of the ways that the PIFs were able to describe the qualities of the role was answering a retrospective question at the end of the experience: "What advice would you give a new PIF for next year?

> Have patience because even through parents do not do this intentionally, they can be rude.
>
> Be open—sometimes we need to keep the problems in the office, and we need to separate the problems and not internalize what happens in the position.
>
> Try to help and follow up in whatever circumstances it would be. Keep reaching out—it takes a certain amount, of course, because some parents are not as welcoming.
>
> Try to not tell parents the same story of how the students is not coming to school or not doing well in school. They are tired of hearing the same story. The student tells his parents that he is doing fine, but the teacher does not like him.
>
> Be a safe listener—listen to what you can do and cannot do.

Those who worked with PIFs identified an important quality in them: the belief that they could make a difference in families. While the PIFs themselves did not verbally identify it, this quality was reaffirmed in their sharing of stories of their daily interactions and how they provided natural counseling with their families. One PIF who is a social worker helped a parent with community resources when her child was arrested: "The parent did not know what to do first or next. I just helped the family get the resources they need to get through the crisis. Now, the student is back in school."

As with any program, this one also faced challenges in hiring and retention. Each year, at least one to two of the PIFs left the position midway through the year. Sometimes, it was the challenge of working in the role. More frequently, the PIF found a position that paid more money or was closer to his or her home. Because the job was during school hours, it was a challenge for a PIF who was also attending the local community college or university. By the third year of the program, retention issues were minimal. This was attributed to lessons learned in the first two years, more selectivity in the hiring of the

PIFs, and closer matching of the qualities of the PIF to the expectations of the schools in which they were placed.

What Strategies Do PIFs Use to Engage Parents of At-Risk Students?

Even though the PIFs received training in their roles, it was a role that was primarily learned "on the job." In the first two years, training was limited to school district workshops provided to all new employees, namely, using the parent portal and data entry systems, FERPA, and sexual harassment training. In the third year, the PIFs attended some targeted workshops using case studies with discussions (Walker, 2012) during which they watched or read the case and suggested ways to address issues related to a family conference scenario. The most powerful sessions, however, were those where the PIF shared stories with each other about their roles. Such "side-by-side" sharing provided rich data about strategies that were working and those that they needed to change in order to collect data or to support families and students in the program.

An early awareness insight that PIFs typically reported, especially after they had been in their position for two to three months, was the importance of building relationships. The PIFs described how many of these relationships evolved from a personal software training opportunity for the parent to a trusting relationship. One of the PIFs described the relationship in this way, "Once the parent realized I was a resource and support, they would listen to me, and many would return my phone call." Another PIF emphasized the importance of trust:

> The PIF needs to build trust with parents. The PIFs want to help the parents and the families. They want to help families understand that they are not there just to represent the schools but to help the students get back on track. The hard part is connecting to the parents and to help them understand they are not the police or [alleviating] the fears that the parents might have. That is the biggest challenge.

In addition to building trust, the PIFs over the three years recognized the importance of persistence. One of the PIFs explained this through the perception of the parents, "At first, parents do not think they need help…and then one day, they come to you and ask what can they do." One PIF described persistence as being motivated by the time requirement in the job description: "…to complete the 1,700 hours. That is a lot of work, and you have to know you've done something with that. It is how I measure effectiveness with success." Another realized the importance of patience: "Parents will get angry

because their children are not doing well, and I will try to help them overcome their anger so that their children will have another chance."

The bottom line is how well the student is doing in terms of grades. As one PIF reports, "I measured success based on how many parents I was able to pass on information like grades. I also recognized that I needed to just do my best… I know that I was going to try to provide a contact, and if a parent does not want to have help, I still try to give it my best…talk to them about their situation and give them an idea of what to do."

One of the most consistent strategies shared over the three years is the acknowledgement that all families need to be treated with respect. "I did not want to enter into that judgmental circle; I just want to get into their shoes, [know] what they are doing, and what is not working." The outcome, as one PIF explains is "I have empathy for parents and students, not because I have children. I have learned to suspend judgment and not to jump to a conclusion but wait and be respectful for parents as they share their stories with you."

Finally, the theme of personal connections and a growing relationship also carried into the PIFs direct contact with students. One of the PIFs recognized that a student chose not to attend a class. She and the student worked out a plan to walk to the class so the student would not skip. This PIF reported that the student eventually passed the class. Another PIF echoed the impact of personally connecting with students and shared her work with a family to help them get their daughter to school. The PIF persisted with her communication, and the student started coming to school on a regular basis.

This evolving relationship was also apparent when working with the school staff and being seen as a valuable contributor to the school community and school goals for students. The school facilitator reported that the PIF was "part of the team. She was invaluable, and we were in constant contact, and her voice was very important." Sometimes, a school relationship was "bumpy" as described by one of the PIFs. These were small but annoying issues, like not having a dedicated space in the office or having to serve as a translator when a parent, who was not English speaking, came to the office and there were a need for a Spanish translation. These were issues that were more frequent in the first year and minimal by the third year. As the facilitator admitted, "There was a misunderstanding, and we did not understand the intent of the role of the PIF." Since that time, and with open communication, the role of the PIF has been clearly defined, and these issues have been resolved. By the end of the school year, PIFs viewed their successes working with families as growing and progressing, eventually believing that they could have an impact on student outcomes. It is this belief and acknowledgement that they are making a difference which makes the challenges faced in their roles easier to overcome.

What Is Working and Not Working To Date?

One would be remiss in excluding data that showed what was taking place in the school district in terms of the question asked: "Did this program work?" This answer is: to some degree; it had a positive impact on contacting parents. In year one, PIFs had 1,333 interactions with parents of 651 students, 16% of which were initiated by parents. In year two, 3,529 contacts were made to 800 students (17% initiated by parents). In year three, a total of 3,147 contacts were made to 845 high-risk students (27% initiated by parents). The number of times a family was contacted varied considerably, from as few as one time to as many as 49 times in 2012–2013. PIFs provided a wide range of support to families, with the largest support provided in the areas of attendance, grades, the parent portal, and tutoring across all years. In fact, in 2012–2013, 31% of all contacts related to grades; 19% of contacts were related to attendance; 13% were related to teaching families to use the parent portal to check their students' grades, and 3%, helping students with credit recovery. The rest of the contacts were related to information about programs that were being provided by Parent University (e.g., English Language Learners, understanding assessment data, high school graduation requirements). The portal helped the PIFs be more specific about the nature of their contacts, and by the third year, the PIFs were more aware, too, of programs that the school district was offering to support families. When the PIFs were asked which type of contacts yielded the most success, it was in those where parents were informed about the positive success their child was having in school. This was usually a phone call that a PIF made to share academic success like the passing of a test or completion of a project.

As noted previously, students in the school district receive risk index points partially based on their attendance. Students who miss 9.5 days of school (excused or unexcused) receive one point on the index, while students who miss 22.5 days or more receive two points on the index. In this study, 1,104 students were identified in this way at the beginning of the school year. At the end of the ninth-grade year, only 717 (65%) of PIF students were considered high risk because of their attendance. These findings indicate that although the number of students contacted by PIFs who were at risk because of their attendance declined from the start of the year to the end of the year, attendance issues continued to remain a major concern among high-risk students.

In the first year, approximately 545 students (45%) supported by PIFs earned five credits or more during the school year and were considered "on-track" for graduation. In the second year of the program, 675 (53%) of at-risk students earned enough credits to achieve sophomore status. In the third year

of the program, 651 (59.2%) of students were considered "on-track" in terms of their credits. The percentage of credit deficient students contacted by PIFs differed substantially from school to school, with some schools ending the year with only 30% of students credit deficient, while others continued to have as many as 58% of students credit deficient (Crain et al., 2013b). However, all high schools experienced a positive decline in the proportion of their students who were considered credit deficient at the end of their freshman year from 2011–2012 to 2012–2013, perhaps indicating the PIFs became more involved.

By the end of the year, the majority of students supported by PIFs improved their attendance and were on-track to graduate. Findings from parent portal log-in data indicated that parents contacted by PIFs were significantly more likely to log into the portal even one year after their participation in the PIF program and that parent portal log-ins were positively associated with credit attainment and attendance. Again, these preliminary correlational findings do not necessarily indicate a causal relationship, but they do provide data to further pursue in future studies.

Strategies and Outcomes That Emerged From the Intervention

Data analysis of PIF contacts show that PIFs provide a wide range of support to families, from serving as a liaison between the school and home to providing information on logging into the parent portal to helping students connect to credit recovery systems. These preliminary analyses indicate that there are mixed correlations between increased PIF contact and students' credit accrual and attendance. These findings, rather than a reflection on the quality of PIF contact, are most likely indicators of which students PIFs tend to devote the most time and of how much support severely credit deficient and truant students need to stay on-track for graduation.

An invaluable strategy that helps PIFs stay motivated and informed is having discussion times with other PIFs during the year. During these discussions, many of the PIFs reported that building trusting relationships with families was not instantaneous; it required both patience and persistence. Once trust and strong relationships were built, PIFs realized they could work effectively with families to develop solutions for obstacles students faced. PIFs also found that sharing their reflections on their capacity to engage families helped them acknowledge that they had gained valuable skills to partner with families as the semester progressed. Much of the PIFs' success also depended on school administrators and their ability to support each PIF in meaningful ways. When a PIF had the support of an administrator, he or she was able to focus on outreach and support to families as opposed to doing routine clerical work. When

PIFs felt included as members of the school staff, they also reported the ability to make valuable contributions to formulate school goals and promote student progress. PIF program data suggest individualized support with at-risk families helps build both the efficacy of the PIF and the target families. This collaborative outcome helped support students in staying on track for graduation.

The Power of the Human Contact as Social Capital

Over the three years, the voice of the PIF has helped show the power of human contact. Social capital exists in relationships and provides a network of support—between families, teachers, and staff; between families and the community; and, in this case, between families and the PIFs. When families use the resources available to them, their well-being is improved. It helps create a success story, that is, a high school education or even a university degree. What has happened, according to Coleman (1988), is that life challenges (e.g., poverty, increased mobility, a decline in family affiliations) decreased social capital in some families. Coleman warned that social capital that exists in families is different from school resources. Schools need to provide children from resource-weak families with experiences that approximate those provided by homes and communities that are rich in social capital (Powell, 1989).

The voices of the PIFs have been built on PIF comments over time, which serve as building blocks of evidence and support the power of this program. The most power lies in its essence and outcomes of communication. These findings back research developed by the Harvard Family Research Project and highlighted by the work of Allen (2009). When asked, "What qualities do you have that make this program and your link with parents work?" the PIFs shared many unique thoughts:

> Communication, because I have good communicating skills with parents.
>
> Native ability, because I understand their perspectives with others. I had trouble with school. I've been there myself.
>
> I have empathy for parents and students—not because I have children; I know where the resources are and where to find help for parents.
>
> Ask parents to suspend judgment and to not jump to a conclusion but wait and be respectful for parents as they share their stories with you.

The PIFs also shared their level of importance of being part of a team paired with the parents in supporting and helping students be successful in school and complete their high school education:

> I have been calling a family because one of the sons was failing and had low test scores. I talked to his dad who told me that he never saw this,

> and I told him about his grades. The dad was divorced and did not know what to do. I suggested he meet with the counselor. I set up a meeting with the counselor. He and the counselor met, and he wrote me to let me know how helpful it was, and he was working more closely with his son.

By the third year, follow-up communication, such as between this father and the PIF, was a more frequently cited story. It was also more common by the third year to hear how the PIFs supported families through community resources, especially as there was a substantial rise in the number of families in homeless support programs in the school district:

> One of the students had been missing a lot of school because the family was evicted, and they were staying at a motel. The student's mom tried to get transportation to the new school, but she was having trouble filling out the paperwork and contacting the counselor. I contacted the counselor and helped the student and his mom get the paperwork started. The counselor then helped them get some bus passes, food, and clothes. I contacted the mom yesterday, and she said that her son is going to school and doing ok.

More support from school staff was in place by the third year. At one school, the PIF, counselor, and the other parent liaison not assigned to the PIF program collaborated on ways to encourage families to come to the school:

> I have been working with parent nights and getting more help to get the word out. I have been letting parents know that I am there to support them. I have good support with the administration, and we have meetings each week to talk about the families and their children.

Another PIF shared a strategy that brings in both the students and their families with an end goal in mind—high school graduation:

> I am participating in a graduation program, which is the second or third Wednesday of every month. We meet with parents from 7:30 until 9 AM. The invitation is for freshmen and sophomores, and the phone call goes out in Spanish and English. The goal is to try to recruit more Hispanic parents. The site supervisor tries to have a session in Spanish. She helps the parents by going over the students' transcripts and discussing student grades. More and more parents seem to be comfortable coming to school.

Other programs are now in place in several of the schools where the PIFs are assigned. These are typically afterschool tutorial programs to help students who have not passed a subject during the first semester or are presently earning a D or an F in one of their core content areas of English, mathematics, science,

or social studies. Some of the PIFs have started to play a role in supporting the afterschool programs as tutors or as those who encourage students to attend these sessions. One PIF uses the afterschool program as a goal with the intent of helping students on his call list reduce their number of F's:

> We have 22 kids in the program, and our goal is to have 50 in the program. The student is suppose to attend the number of sessions based on the number of Fs he or she received on the first semester report card. So, if a student failed three classes, he is supposed to come to all three sessions, and so forth. There are subs for afterschool transportation. One of the students did so well in the program; he was failing, and now he is passing with straight A's and able to take on the courses through another program to replace the failed course.

The facilitators learned invaluable things through the exchange of information, also highlighting the importance of social capital in this program:

> I enjoyed the experience working with families because you learn different things from families—different values and different ways of doing things. For example, parents from Central America are very different. When they bring their transcripts and birth certificates to school, it looks different. In Mexico, they base grades on numbers and number from 1 to 10. Parents do not understand percents and letter grades that we use in the U.S. Also, students take 10 classes in the other countries sometimes, and in the U.S.; the student only takes six or seven classes a day. Here in the U.S., it is a longer school day, but in Central America, students go from 8:00–12:00 or 1:00–5:00. Students go to college to prepare for a career. It is harder to get into college in Central America than it is in the United States.

Also interesting is what happens to the PIFs. The PIFs report the program has impacted their lives and their future career goals. Some complete the year and then enter the community college to begin their studies in various fields related to education. This is well-captured by one of the PIFs who is completing his student teaching experience at the university:

> I contacted an advisor and the secretary at the university. They put me in contact with the Latino Research Center. I contacted the Director of the Spanish Department. I talked to a professor to get into classes and met them to work out my schedule. I was finally accepted to the Spanish Master's program, and now, I am finishing up my teacher certification.

The Final "So What?"

If this study were reported as a quantitative study, it might appear that the PIF program is not working. The numbers, however, do not tell the whole story. What happens when and if the student moves into tenth grade? This intervention targets one grade level—and after ninth grade, the student becomes part of the larger data set of students who continue through high school, hopefully with a low risk index and needing fewer interventions.

When PIFs were asked about parent follow-up support for their children after the ninth grade intervention, they provided some unique insights they had shared with their parents. In a discussion group, the PIFs agreed that it was important to have parents continue to stay informed. "Help the parents find options—like the 211, a national call center for human service support, and other options and build on these as they go." An insightful suggestion was to make sure that parents find ways to have personal space and time set aside to get to know the teachers and to try to monitor the child's grades and build a working relationship with their children and the school. The case also brings out the importance of data literacy. If data do tell a story, even though it is a complex one in terms of understanding at-risk indices and variables that are linked to dropout predictions, these data do need to be understood and discussed on a frequent basis. Simply looking at statistics two or three times a year yields limited findings. It is especially difficult if the data are reduced to a few categories like attendance or credits attained overall.

Data from a program such as this have multiple sources. This paper does not focus on quantitative data, not because data do not exist, but because the lens in this paper is on a point of intervention—the parent involvement facilitator. This study uses a more naturalistic inquiry method guided by the case study structure and explores lessons learned about how a group of parent involvement facilitators played a role in providing parent support for helping their children stay in school. Training became more focused after the first year, and group discussions were held on an informal basis to "touch base" with the PIFs to see "how everything was going," the supervisors reported. These informal discussions helped focus follow-up discussions with the PIFs on their personal self-awareness of strategies to work with "their families" on the phone and in person. This case study helps capture the stories of these discussions over time.

The bottom line is the question, "Did this make a difference in keeping students in school and helping them persist to graduation?" The answer is that it depended on the risk level of the students. The higher the risk, the less likely it remains that students are completing their education. The less likely the risk, the more likely it is for at-risk students to continue to the next grade.

Of course, the PIF program alone is not the "cure-all" for the complex task of addressing and making significant changes in a large, urban school with a population of students from diverse cultures. What the PIFs shared in their focus groups is a belief that they are playing a meaningful role in the lives of at-risk families and helping build relationships between schools and families. Data on the PIF program suggest that individualized support with at-risk families that helps build their efficacy to support their child's learning through monitoring may be a start in designing a successful model for helping at-risk students stay on track for graduation.

Any success needs to build on more data, and to date the voice of the parents has not been captured in the program in a formalized way. Parents have informally shared their enthusiasm for the phone calls and school visits during the past few years. A video has been developed that captures the story of one of the parents whose child has been successful through the support of the program. More formal methods of data collection are anticipated to be in place by the end of the fourth year to bring the parent's voices more clearly into this intervention.

The study also explores a question that was raised by Dufur and his colleagues (2013) in a research article entitled, "Does capital at home matter more than capital at school?" The findings from this case study indicate that enhancing the links between home and school by empowering parents with both data and a human connection has the potential to unlock social capital that can help students succeed in school. It is a powerful start to improving a complex issue.

References

Allen, J. (2009). Effective home–school communication. *FINE Newsletter, 1*(1). Retrieved from http://www.hfrp.org/family-involvement/publications-resources/effective-home-school-communication

Allensworth, E. M., & Easton, J. Q. (2007). *What matters for staying on-track and graduating in Chicago Public High Schools: A close look at course grades, failures, and attendance in the freshman year.* Chicago, IL: University of Chicago, Consortium on Chicago School Research. Retrieved from http://ccsr.uchicago.edu/publications/what-matters-staying-track-and-graduating-chicago-public-schools

Balfanz, R., & Bridgeland, J. (2007). A plan to fix "dropout factories." More students will stay if school is harder, safer, and more relevant. *The Christian Science Monitor*. Retrieved from http://www.csmonitor.com/2007/1123/p09s01-coop.html

Balfanz, R., & Byrnes, V. (2006). Closing the mathematics achievement gap in high-poverty middle schools: Enablers and constraints. *Journal of Education for Students Placed at Risk (JESPAR), 11*(2), 143–159. doi:10.1207/s15327671espr1102_2

Balfanz, R., Herzog, L., & MacIver, D. J. (2007). Preventing student disengagement and keeping students on the graduation path in urban middle-grades schools: Early identification and effective interventions. *Educational Psychologist, 42*(4), 223–235. doi:10.1080/00461520701621079

Brooks, S. (2009). A case study of school–community alliances that rebuilt a community. *School Community Journal, 19*(2), 59–80. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Building Bridges. (2011). *Developing a dropout early warning and intervention system*. Retrieved from http://www.k12.wa.us/GATE/BuildingBridges/pubdocs/DEWISGuide-Final.pdf

Chen, W., & Gregory, A. (2009). Parental involvement as a protective factor during the transition to high school. *Journal of Educational Research, 103*(1), 53.

Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology, 94*, S94–S120.

Crain, D., Davidson, L., & Ferrara, M. M. (2013a, October). *Risk indicators and family involvement liaisons*. Presentation at the New York City Board of Education Parent Involvement Seminar, New York, NY.

Crain, D., Davidson, L., & Ferrara, M. M. (2013b, November 2). *Risk indicators and Parent Involvement Facilitators: Data, collaboration, and success building strategies.* Presentation at the Nevada Education Research Symposium sponsored by REL West, University of Nevada, Reno.

Croninger, R. G., & Lee, V. E. (2001). Social capital and dropping out of high school: Benefits to at-risk students of teacher support and guidance. *Teachers College Record,103*(4), 548–581.

Crosnoe, R. (2004). Social capital and the interplay of families and schools. *Journal of Marriage and Family, 66*(2), 267–280.

Denzin, N. K., & Lincoln, Y. S. (2005). *The handbook of qualitative research*. Thousand Oaks, CA: Sage.

Deslandes, R., & Bertrand, R. (2005). Motivation of parent involvement in secondary level schooling. *The Journal of Educational Research, 98*(3), 164–175.

Donahue, K. L. (2011). Rethinking remediation: How does remedial coursework relate to high school dropout behavior? (Georgetown University). *ProQuest Dissertations and Theses*, 58. (Order No. 1491407)

Dufur, M. J., Parcel, T. L., & Troutman, K. P. (2013). Does capital at home matter more than capital at school? Social capital effects on academic achievement. *Research in Social Stratification and Mobility, 31,* 1–21.

Dynarski, M., Clarke, L., Cobb, B., Finn, J., Rumberger, R., & Smink, J. (2008). *Dropout prevention: A practice guide* (NCEE 2008–4025). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/PracticeGuide.aspx?sid=9

Eberly, J., Joshi, A., & Konzal, J. (2007). Communicating with families across cultures: An investigation of teacher perceptions and practices. *School Community Journal, 17*(2), 7–26. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Ferrara, M. M. (2009). Broadening the myopic vision of parent involvement. *School Community Journal, 19*(2), 123–142. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Ferrara, M. M., Crain, D., & Davidson, L. (2013, April 7). *Risk indicators and Parent Involvement Facilitators: Powerful data tools and voices for family support at a critical time*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.

Feuerstein, A. (2000). School characteristics and parent involvement: Influences on participation in children's schools. *The Journal of Educational Research, 94*(1), 29–40.

Fritch, W. S. (2000). *A* study of the organizational structures and processes that create and maintain social capital in selected private and public schools (University of California, Riverside). *ProQuest Dissertations and Theses*, 424–424. (Order No. 9977842)

Fullan, M. (2014). *The principal: Three keys to maximizing impact*. San Francisco, CA: Jossey-Bass.

Gottfredson, D. C., & DiPietro, S. M. (2011). School size, social capital, and student victimization. *Sociology of Education, 84*(1), 69–89.

Gould, J. (2011). Does it really take a village to raise a child (or just a parent)? An examination of the relationship between the members of the residence of a middle-school student and the student's satisfaction with school. *Education, 132*(1), 28–38.

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology, 99*(3), 532–544. doi:10.1037/0022-0663.99.3.532

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45*(3), 740–763.

Hoover-Dempsey, K. V., Battiato, A. C., Walker, J. M. T., Reed, R. P., DeJong, J. M., & Jones, K. P. (2001). Parental involvement in homework. *Educational Psychologist, 36*(3), 195–209.

Howland, A., Anderson, J. A., Smiley, A. D., & Abbott, D. J. (2006). School liaisons: Bridging the gap between home and school. *School Community Journal*, *16*(2), 47–68. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Kelly, J. A. (2014). *Fostering effective parental involvement: The case for developing school-sponsored programming to assist middle school parents* (Unpublished doctoral dissertation). Northeastern University, Boston, MA.

Larson, K. (2007). Changing hearts and minds: Dropout prevention. *Leadership, 37*(2), 18–21.

Lee, J. S., & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal, 43*(2), 193–218.

Lee, V. E., & Burkam, D. T. (2002). *Inequality at the starting gate: Social background differences in achievement as children begin school*. Washington, DC: Economic Policy Institute.

Lehr, C. (2004). Alternative schools and students with disabilities: Identifying and understanding the issues. *Addressing Trends and Developments in Secondary Education and Transition, 3*(6).

Martin, N., & Halperin, S. (2006). *Whatever it takes: How twelve communities are reconnecting out-of-school youth.* Washington, DC: American Youth Policy Forum.

McCallumore, K. M., & Sparapani, E. F. (2010). The importance of the ninth grade on high school graduation rates and student success. *The Education Digest, 76*(2), 60–64.

Neild, R. C., & Balfanz, R. (2006). An extreme degree of difficulty: The educational demographics of urban neighborhood high schools. *Journal of Education for Students Placed at Risk, 11*(2), 123–141. doi:10.1207/s15327671espr1102_1

Portes, A. (2000). The two meanings of social capital. *Sociological Forum, 15*(1), 1–12.

Powell, D. R. (1989). *Families and early childhood programs*. Washington, DC: National Association for the Education of Young Children.

Sanders, M. G. (2008). How parent liaisons can help bridge the home–school gap. *Journal of Educational Research*, *101*(5), 287–298.

Sanders, M. G. (2009). Collaborating for change: How an urban school district and a community-based organization support and sustain school, family, and community partnerships. *Teachers College Record*, *111*(7), 1693–1712.

Somers, C. L., & Piliawsky, M. (2004). Drop-out prevention among urban, African American adolescents: Program evaluation and practical implications. *Preventing School Failure, 48*(3), 17–22.

Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

Trusty, J. (1996). Relationship of parent involvement in teens' career development to teens' attitudes, perceptions, and behavior. *Journal of Research and Development in Education, 30*, 317–323.

Walker, J. M. T. (2012). *Realizing the American dream: A parent education program designed to help disenfranchised populations access mainstream educational opportunities.* Paper presented at the 16th International Roundtable on School, Family, and School Partnerships at Johns Hopkins University, Baltimore, MD.

Walker, J. M. T., Wilkins, A. S., Dallaire, J. R., Sandler, H. M., & Hoover-Dempsey, K. V. (2005). Parental involvement: Model revision through scale development. *The Elementary School Journal*, *106*(2), 85–104.

Margaret M. Ferrara is the secondary coordinator in the College of Education at the University of Nevada, Reno. She has written extensively and provided numerous workshops on family engagement for the past 20 years in her work in school districts in Texas, New York State, Connecticut, and presently in Nevada. She has worked closely with teachers and currently with preservice teachers and teacher supervisors on areas related to cultural wealth with a focus on family engagement and parent involvement. Correspondence concerning this article may be addressed to Dr. Margaret M. Ferrara, 1000 Greensburg Circle, Reno, NV 89509, or email ferrara@unr.edu

Copyright of School Community Journal is the property of Academic Development Institute and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Check for updates

Article

Parental Involvement Initiatives: An Analysis

Educational Policy
2018, Vol. 32(5) 697–727
© The Author(s) 2016
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/0895904816673739
journals.sagepub.com/home/epx
SAGE

Daniel Hamlin[1] and Joseph Flessa[1]

Abstract

Educational policies have increasingly promoted parental involvement as a mechanism for improving student outcomes. Few jurisdictions have provided funding for this priority. In Ontario, Canada, the province's Parents Reaching Out Grants program allows parents to apply for funding for a parental involvement initiative that addresses a local barrier to parent participation. This study categorizes initiatives (N = 11,171) amounting to approximately 10 million dollars (Can$) in funding from 2009 to 2014 and compares them across school settings. Although results show several key contextual differences, parents across settings identify relatively similar needs for enabling parental involvement, emphasizing parenting approaches for supporting well-being (e.g., nutrition, mental health, and technology use) and skills for home-based learning. However, Epstein's widely used parental involvement typology conceals these prominent aspects of parental involvement. A modified model of parental involvement is presented that may serve as a guide for enhancing parent participation.

Keywords

parent grants, parental involvement, educational policy, parental involvement model, Ontario, Canada

[1]University of Toronto, Ontario, Canada

Corresponding Author:
Daniel Hamlin, University of Toronto, 252 Bloor St. West, Toronto, Ontario, Canada M5S 1V6.
Email: dan.hamlin@mail.utoronto.ca

Introduction

Educational policies have increasingly promoted parental involvement in children's education (Epstein, 2010). Much of the growing discourse emphasizing the role of parents corresponds to decades of scholarship, linking parental involvement to student performance and child development (Epstein, 2010; Jeynes, 2005). Major federal school reform movements in the United States have articulated broad goals for increasing parental involvement as part of closing social class and race achievement gaps (Improving American Schools Act, 1994; No Child Left Behind [NCLB] Act, 2002). The NCLB Act (2002) mandated all school districts receiving Title I Part A funds to produce a parental involvement policy written in collaboration with parents. At lower levels of government, both state agencies and their provincial counterparts in Canada have put forth policies envisioning higher rates of parent participation in children's learning (Epstein, 2010; Ontario Ministry of Education, 2010).

Despite these policy aspirations, many parents face obstacles to parental involvement, such as a lack of familiarity with the school system or challenges communicating with school staff (Brock & Edmunds, 2010; Robinson & Harris, 2014; Williams & Sanchez, 2013). Some jurisdictions have begun to respond with parental involvement programs that take into account specific obstacles to parent participation (Mattingly, Prislin, McKenzie, Rodriguez, & Kayzar, 2002). This strategy has led to programs, ranging from the development of school-based resource centers for new parents to cultural events aimed at fostering a welcoming school environment (Epstein, 2010). The provision of grants prioritizing local needs for parental involvement has also expanded (Epstein, 2010; Ontario Ministry of Education, 2010), helping to fund community research projects, training and learning opportunities, translation services, and health education for parents (California Department of Education, 2015; Washington D.C. Office of the State Superintendent of Education, 2008). The attention to locally relevant supports for parental involvement is noteworthy as rates of parent participation may be influenced by contextual factors (Auerbach, 2007; Fan & Chen, 2001).

In Ontario, Canada's largest province, the government launched its Parents Reaching Out Grants program in 2006. The program seeks parent-identified solutions for enabling parental involvement at local levels. It allows parents on school councils to identify a barrier to parental involvement and then to receive funding for a parental involvement initiative that aims to reduce the identified barrier to parent participation (Ontario Ministry of Education, 2010). Since the program's inception, the province has funded more than 15,000 initiatives, totaling approximately 13.5 million dollars. The resulting

grant-funded initiatives have led to an extensive range of parent-driven initiatives focused on increasing parental involvement across different demographic and school contexts. No research, however, has systematically examined the initiatives. While previous studies have frequently examined the relationship between parental involvement and academic achievement (Jeynes, 2012; Mattingly et al., 2002), knowledge is lacking on specific needs for parental involvement across school settings (Harris & Goodall, 2008). In addition, scholars have identified gaps in conceptual understanding, suggesting that prominent models of parental involvement may be inattentive to contextual factors (Auerbach, 2007) and may understate important subtle forms of parental involvement, such as parent–child communication and approaches to parenting (Jeynes, 2010).

This study investigates initiatives ($N = 11{,}171$) funded through the Parents Reaching Out Grants program from 2009 to 2014, amounting to 10 million dollars in parent-led parental involvement projects. The purpose of this inquiry is twofold: to compare the types of initiatives undertaken across different school contexts and to assess how well Epstein's widely used 6-point typology of parental involvement reflects parent-identified areas of need for enhancing parental involvement. The analysis encompasses initiatives in public schools and publicly funded Catholic schools, primary and secondary schools, urban and rural schools, schools in high and low-income areas, and French-language and English-language schools. This large-scale examination of parental involvement across settings may inform school approaches to parental involvement by illuminating parent-identified areas of support in different school contexts. Furthermore, in classifying the initiatives along Epstein's typology, this study may help to improve conceptual understanding of parental involvement.

Ontario's Policy Context

The province of Ontario has a population of approximately 13.7 million, making it more populous than all but four U.S. states (Statistics Canada, 2014). The province contains Canada's largest city, Toronto, and its federal capital, Ottawa. Similar to trends in some U.S. states, Ontario's population has experienced rapid growth in racial and ethnic diversity in recent decades. It has one of the highest immigration rates in the world with 3.6 million of the province's residents classified as immigrants and 25.9% as "visible minorities" (Statistics Canada, 2013). The city of Toronto, which retains much social and economic influence in Ontario, has been deemed the world's most ethnically diverse city. Nearly half of the city's residents are foreign born (Hamlin & Davies, 2016; Michelson, 2006). Ontario also has a growing

Table 1. Ontario's School System.[a]

	Number of school boards	Number of schools	Number of students
School board			
English Public	31		
English Catholic	29		
French Public	4		
French Catholic	8		
Grade level			
Primary Public		2,596	922,741
Primary Catholic		1,382	423,857
Secondary Public		643	465,365
Secondary Catholic		270	219,232
Total	72	4,891	2,031,195

[a]Ontario Ministry of Education (2014b)

Aboriginal population of 300,000 people with a sizable proportion residing in rural parts of the province (Statistics Canada, 2011).

Like many U.S. states, Ontario's public education system has locally elected district school boards and a central policymaking body. However, there are distinguishing features of the province's education system. There is no federal-level K-12 education authority as in the United States. The province's Ministry of Education oversees four types of public schools: English Public, English Catholic, French Public, and French Catholic school boards. The public funding of Catholic schools originates from a constitutional compromise in the mid-19th century that led to public funding for Catholic schools (Gidney, 1999). Even though this unique arrangement has prompted legal challenges, the law has not changed and no other religious schools in Ontario receive public funding except for Catholic schools. In the early 1980s, the *Canadian Charter of Rights and Freedoms* outlined protections for parents who speak French, Canada's primary minority language (Gidney, 1999). The charter granted Francophone parents the right to send their children to a public school that uses French as the language of instruction, leading to the creation of separate publicly funded French and French Catholic school boards. These historical legacies have led to the creation of four distinct school boards, enrolling over 2 million students (see Table 1).

Over the past two decades, Ontario has undertaken a number of school reforms targeting graduation rates, literacy, numeracy, and school climate. By many measures, reforms have been successful—graduation rates have risen and scores on the Programme for International Student Assessment (PISA)

place Ontario's students among the world's top performers (Organisation for Economic Co-Operation and Development, 2010). Ontario has since received international recognition for its policies, becoming a well-established exporter of school reform strategies (Fensterwald, 2013; Mourshed, Chijioke, & Barber, 2010). In these reforms, parental involvement has featured prominently. The province set forth a comprehensive parent engagement policy and created a provincial-level parent engagement office in 2006 (Ontario Ministry of Education, 2010). In the same year, the Parents Reaching Out Grants program was launched, providing targeted funding for parental involvement initiatives conceived by parents at local levels. With the intent of strengthening parental involvement, parenting and family centers, board-level parental involvement committees, and other community outreach programs have been established in recent years (Flessa & Gregoire, 2012).

Parental Involvement and Student Outcomes

An extensive body of scholarship has demonstrated the positive effects of parental involvement on student achievement and developmental outcomes (Dearing, Kreider, Simpkins, & Weiss, 2006; Elias, Patrikakou, & Weissberg, 2007; Henderson & Mapp, 2002; Jeynes, 2011). Home-based forms of parental involvement, such as parent–child shared reading and subtle aspects of parenting (e.g., parenting style, parent–child communication) tend to exhibit the strongest effects on student outcomes (Jeynes, 2012). Although less salient than home-based forms of parental involvement, studies have shown a positive relationship between school-based parental involvement and academic achievement (Jeynes, 2012; Mattingly et al., 2002). School-based forms of parent involvement include parent attendance at a school function or informational session, parent participation in school leadership roles, and volunteer service (Park, 2006; Sheldon, 2002). School-led programs targeting home- and school-based forms of parental involvement are also positively associated with student performance. In a meta-analysis examining 51 studies, Jeynes (2012) reported that school-led parent–child shared reading, home–school communication, and parent–teacher partnership programs produced the largest effects on student achievement. Parent–child reading programs appear to have a particularly large influence on literacy development during early years of schooling (Crosby, Rasinski, Padak, & Yildirim, 2015; Darling & Westberg, 2004).

Barriers to Parental Involvement

Despite much evidence underscoring the benefits of parental involvement, parents may encounter an array of barriers to participation, such as time and

resource constraints, cultural differences, and a lack of familiarity with the school system (Ballenger, 2009; Lightfoot, 2004; Shiffman, 2013). Scholars have also argued that schools may hold deficit-based attitudes toward parents, in which school perceptions of parents and restrictive notions of what counts as parental involvement limit participation among minority and low-income families (Auerbach, 2007; Baquedano-López, Alexander, & Hernández, 2013; Valenzuela, 2010; Williams & Sanchez, 2013). To enable high rates of participation among a wide range of families, some have called for schools to consider obstacles that parents may encounter (Frew, Zhou, Duran, Kwok, & Benz, 2013) and to use approaches to parents that are relevant to specific conditions and needs in the local school community (Hornby & Lafaele, 2011). The literature describes some approaches used in specific settings, but precise knowledge of how parent needs may be contingent on context remains underdeveloped (Robinson & Harris, 2014).

Low-Income Families

Low-income parents tend to be less involved in their children's education than other parents (Fan & Chen, 2001; Lareau, 2003), but this gap in participation may be linked to barriers that low-income parents face rather than differences in motivation (Hornby & Lafaele, 2011). In her ethnographic study, Lareau (2003) observed that middle-class groups were able to engage teachers and school administrators to advocate for their children, whereas low-income families faced difficulty navigating school structures and communicating with teachers and administrators. For low-income groups, these existing challenges may be compounded by severe time and resource constraints related to irregular work schedules or employment insecurity (Epstein, 2010; Shiffman, 2013). Baquedano-López et al. (2013) further concluded that schools may adopt a restrictive middle-class orientation in determining what constitutes parental involvement. As a result, schools may not recognize the diverse ways that low-income parents participate in their children's learning, leaving them unable to support activities in which families are already engaged. To counteract these obstacles, some school and government-led initiatives have been able to spur parent participation by facilitating connections between low-income families and community groups and government agencies (Henderson & Mapp, 2002). Gaining input from community agencies on the development of parental involvement programs has also led to wider parent participation (Smith, 2006). Other school strategies have sought parents' perspectives and worked to build upon parents' existing strengths to enable parental involvement (Baquedano-López et al., 2013).

Culturally Diverse Families

Student populations in schools throughout North America have become increasingly diverse. Yet, immigrant and minority families often encounter linguistic and cultural obstacles when attempting to participate in their children's education (Henderson & Mapp, 2002; Robinson & Harris, 2014). New immigrants who do not speak English may face challenges to participating in school functions or taking on leadership roles within schools, in part, because of communication barriers (Henderson & Mapp, 2002). Some scholars have argued that schools may create additional obstacles in their approaches to parents by failing to recognize cultural knowledge and practices of minority families (Baquedano-López et al., 2013; Valenzuela, 2010). School-led parental involvement initiatives that foster a welcoming school atmosphere for parents of diverse linguistic and cultural backgrounds may help reduce these obstacles (Denessen, Bakker, & Gierveld, 2007; Hands, 2013). In Ontario, Ladky and Peterson (2008) underscored school practices aimed at integrating perspectives of immigrant families, including cultural nights and newcomer parent-support groups. Other recent work has indicated that schools with large numbers of new immigrant families may enhance parental involvement by providing translation services, connecting parents to community services, providing parenting education, and facilitating communication through parent liaisons (Hands, 2013; Rah, Choi, & Nguyễn, 2009).

Geographic Location

Families in different geographical areas may face unique conditions that necessitate specific types of supports for parents. Much study of parental involvement programs in urban areas has highlighted the persistence of gaps between schools and families. Less work has had a rural focus (Semke & Sheridan, 2012). The few studies exploring rural settings suggest that rural families tend to face difficulty communicating with schools, gaining access to school services and resources, and engaging their children in learning at home (Kushman & Barnhardt, 2001; Semke & Sheridan, 2012). Examinations of school-led parental involvement programs in rural locations have reported positive effects, but these study designs have largely relied on self-reports from principals and teachers (Barley & Beesley, 2007; Meyer, & Mann, 2006).

Grade Levels

Research on parental involvement has focused on the involvement of parents during early primary school (Simon, 2004), offering analyses of home

reading programs and workshops for parents with children entering kindergarten. Although parental involvement seems to be advantageous during all grades, parent participation tends to decline in higher grades (Catsambis, 2001; Jeynes, 2011). During secondary school, parents are less likely to discuss homework with their children and to develop relationships with teachers. This decline may be related to increased difficulty of classroom content, parenting challenges during adolescence, and less emphasis from secondary schools on involving parents (Epstein, 2010). There is a dearth of information on strategies addressing obstacles to parental involvement during secondary school. Simon (2004) showed that some secondary schools engage in outreach activities related to parenting, learning at home, and volunteering, but these findings were based on data collected in the late 1980s. More recent evidence indicates that parents of a secondary school student may take on an ongoing advisory role, providing emotional support and academic guidance as their child progresses through school (Elias et al., 2007). To bolster parents' self-efficacy in this role, school programs for parents may be an important resource for communicating information to parents on curriculum and course selection as well as postsecondary entrance examinations, financial aid, and admissions procedures (Agronick, Clark, O'Donnell, & Stueve, 2009).

Catholic Schools

School sector may have an effect on the types of approaches to parents that schools take. As the second largest network of schools in the United States, Catholic schools have received much attention in studies examining parental involvement across school sectors (Bauch & Goldring, 1995; Coleman & Hoffer, 1987). Coleman and Hoffer (1987) reported that Catholic schools excelled in promoting parental involvement because of a match in values between home and school. Other work has shown that Catholic schools generate high rates of school- and home-based forms of parental involvement through effective home–school communication (Bauch & Goldring, 1995). Catholic schools may also rely on a strong community ethos to facilitate parental involvement in fundraising, parent–child monitoring, and extracurricular activities (Bryk, Lee, & Holland, 1993). Given prior research, families in Catholic and public schools may face dissimilar obstacles and have varying needs for parental involvement but it remains uncertain whether such differences exist. As fee-based private schools, Catholic schools in the United States may experience different parental involvement dynamics by attracting more academically-committed or advantaged parents (Davies, 2012). In Ontario, Catholic schools are part of the public education system and may not

charge tuition or vet applicants. Parental involvement in Ontario's Catholic schools may then be less obscured by self-selection bias, providing an opportunity for a more valid comparison between public and Catholic schools (Davies, 2012).

Epstein's Parental Involvement Typology

Traditional framing of parental involvement envisioned parents as supporters of school fundraising initiatives and events (Ma, Shen, & Krenn, 2014). This one-directional interaction offered an incomplete account of the ways that parents participate in their children's learning (Hornby & Lafaele, 2011). The development of more complex conceptual understanding of parental involvement followed the Coleman Report, which indicated that family factors were strongly linked to student achievement (Jeynes, 2011). Theories began to describe roles for home, school, and community in academic and social-emotional development. Epstein (1995) later extended previous models considerably by emphasizing overlapping connections among community, family, and school and by devising a 6-point typology of parental involvement (see Table 2).

Epstein's typology has been instrumental to advancing research on parental involvement. Even though other parental involvement models have been proposed for specific purposes or groups (Hornby & Lafaele, 2011), Epstein's typology remains the most widely acknowledged parental involvement framework used by state education agencies and school boards, education advocacy groups, and university researchers (Auerbach, 2007). Studies of parental involvement have frequently used Epstein's typology in their analyses (Jeynes, 2012; Smith, Wohlstetter, Kuzin, & De Pedro, 2011), but questions have arisen as to whether the model provides an adequate conceptualization of parental involvement (Baquedano-López et al., 2013; de Carvalho, 2001; Jeynes, 2010; Schutz, 2006). Jeynes (2010) contended that parental involvement may need to be reconceptualized to more aptly account for "subtle forms" of parental involvement (e.g., parent–child communication, a home environment that fosters student success, and other aspects of parenting) shown to have the greatest effects on a range of student outcomes. Other scholars have further argued that Epstein's typology prioritizes school-based aspects of parental involvement while downplaying the importance of social and cultural context in shaping parent participation in children's education (Auerbach, 2007). Rapid social and technological shifts have also occurred since Epstein's typology was first articulated. The extent to which the typology is responsive to these changes is unknown.

Table 2. Epstein's Typology.

Parenting	Parenting skills, family support, child and adolescent development, and home conditions to support learning at each age and grade level
Communication	Communication with families about school programs and student progress. Two-way communication channels between school and home.
Volunteering	Recruitment, training, activities, and schedules to involve families as volunteers and as audiences at the school or in other locations.
Learning at home	Involvement of families with their children's learning at home, such as homework, goal setting, and other activities related to the curriculum.
Decision making	Involvement of parents in school decisions, governance, and advocacy activities through school councils, committees, and parent organizations.
Collaborating with community	Coordination of resources and services for families, students, and the school with community groups (e.g., businesses, agencies, cultural and civic organizations, and colleges or universities).

Method

This study asked whether school setting influences the type of parental involvement initiative undertaken. In addressing this question, initiatives are categorized and then compared across publicly funded Catholic and public schools, primary and secondary schools, urban and rural schools, schools in high and low-income areas, and French-language and English-language schools. This study also asked, how well does Epstein's prominent parental involvement typology reflect parent-identified areas of support for parental involvement? Each initiative is mapped onto a component of Epstein's parental involvement typology, using summaries of initiatives funded through the Parents Reaching Out Grants program.

Data

Summaries of funded grant proposals were obtained from the Ontario Ministry of Education. The summaries describe each parental involvement initiative, the initiative's title, the funding awarded for the initiative, and the applicant school's name and school board. Parents on school councils devise and submit proposals. During this process, school staff members may have an

Table 3. Grants Evaluated.

Academic year	Total school grants (*n*)	% of all Ontario schools	Total funding (CAN$)
2009-2010	1,558	31.60	1,278,192
2010-2011	1,677	34.13	1,487,305
2011-2012	1,709	34.88	1,520,437
2012-2013	1,997	40.84	1,849,620
2013-2014	2,037	41.65	1,932,082
2014-2015	2,193	44.74	2,103,095
Total	11,171	*M* = 38%	10,170,731

advisory role in helping to prepare grant applications, secure schools facilities, and prepare content for initiatives. Although the Parents Reaching Out Grants program commenced in 2006, Ontario's Ministry of Education did not begin to archive complete summaries of initiatives awarded funding until 2009. As a result, initiatives were evaluated beginning in 2009 (Table 3).

Most applications were successful—The Ministry of Education awarded funding for approximately 97% of proposals in 2012-2013 (Ontario Ministry of Education, 2014a). The maximum amount of funding for a single parental involvement initiative is 1,000 dollars. From 2009 to 2014, 71% of the grants received this amount. During this period, the number of grants awarded rose by 41% and total funding increased by 65% (see Table 3). Most initiatives require parent attendance with the majority of initiatives being workshops and information sessions. Table 4 shows that three formats were used in approximately 94% of initiatives. Other less common platforms for carrying out initiatives include one-on-one consultations, performances (e.g., a play), and the formation of parent-to-parent support groups. Three percent of initiatives were conducted in more than one language.

Independent Variables[1]

Table 5 presents the number of initiatives for each independent variable.

Grade level. Initiatives were coded as primary (Grades K-8) or secondary (Grades 9-12).

School language. Grants were classified by the school's primary language of instruction (French or English). Initiatives that used more than one language to communicate with parents were also noted.

Table 4. Initiative Formats.

Initiative formats	Frequency (*n*)	Format (%)
Workshop/information session	8,367	75
Provision of information resource	1,718	15
Social gathering/discussion	449	4
Total	10,534	94

Table 5. Initiatives by Independent Variables.

	Frequency (*n*)
Grade level	
Primary	9,506
Secondary	1,665
School language	
English	10,562
French	609
Religious affiliation	
None	7,285
Catholic	3,886
Geographic location	
Large urban	6,649
Mid-urban/suburban	1,611
Small town/rural	2,911
School SES	
Low SES	1,539
Middle SES	1,537
High SES	1,553

Note. SES = school socioeconomic status.

Religious affiliation. Initiatives were marked as either publicly funded Catholic or public schools. Catholic schools are part of the public education system in Ontario, making them eligible to apply for funding through the Parents Reaching Out Grants. Other private or religious schools were not eligible.

Geographic location. We coded initiatives into three demographic areas: (a) large urban, (b) mid-urban/suburban, and (c) small town/rural. Large urban refers to schools in major urban centers of 150,000 people or more. Four of Ontario's five largest cities are clustered around the Greater Toronto Area and

have diverse populations with high percentages of recent immigrants. Many other jurisdictions in the Greater Toronto Area have similarly high rates of recent immigration and minority populations.[2] With these jurisdictions sharing social, cultural, and demographic characteristics (James & Saul, 2007), jurisdictions within or contiguous to a large urban area were coded as large urban—most of these jurisdictions are located in the Greater Toronto Area. Small town/rural comprises areas under 50,000 people that are unattached to large urban or mid-urban/suburban areas. Mid-urban/suburban encompasses areas of 50,000 to 149,999 people.

School socioeconomic status (SES). The percentage of students who are from low-income households and the percentage of students whose parents have no university education were used to generate a measure of school SES. A standardized composite of the two items was formed to develop a more stable measure of school SES. The composite was divided into three groups (high, mid, and low SES) to allow for comparison between higher and lower SES schools. The Ontario Ministry of Education compiled the two items based on Statistics Canada census data from 2006 and school enrollment information up to 2012. School SES data were analyzed for only 2009, 2010, and 2011.

Dependent Variables

Initiative category. Initiatives were categorized in three phases. In phase one, a random sample was taken for each year to develop consistent codes for classifying the initiatives. The process was iterative and involved several rounds to develop initial codes that could be consistently used across the large data set. For phase two, in consultation with the parental involvement literature, another round of revisions was conducted. The strength and consistency of the refined codes was investigated using interrater reliability. Through this process, inconsistencies were located and further revisions were made to the codes. For the final phase, the resulting codes were used to classify each initiative. A number of initiatives indicated multiple objectives that fit into more than one category. These were coded as comprehensive initiatives.

Epstein's typology. We mapped initiatives onto Epstein's 6-point typology. We used Epstein's (2010) descriptions of each type of parental involvement in her model for this process. Initiatives stressing multiple components of the typology were coded as comprehensive.

Data Analysis

From the coding phase, each initiative was placed into one of following categories: support for well-being, skills for home-based learning, accessibility of resources and services, parent–child communication, and home–school–community partnerships. The initiatives constituting these categories are listed in Table 6. Initiatives generally sought to alleviate barriers to parental involvement by addressing gaps in parent knowledge and skills, awareness, access, and networks. Initiatives were more likely to target home-based forms of parental involvement even though the formats for carrying out the initiatives were predominantly school based.

Support for Well-Being

Support for well-being is the largest category, accounting for 34% of all initiatives. The category comprises initiatives aimed at supporting parenting knowledge and practices in the areas of nutrition, physical fitness, bullying and safety, mental health and resiliency, and safe use of technology. The majority of these initiatives address several of areas of well-being, but a large number exclusively focus on parenting skills for supporting mental health and on helping parents monitor their children's use of social media and other Internet-based technology.

Skills for Home-Based Learning

Initiatives that seek to enhance parent–child learning at home constitute the second largest category (27%). In this category, information and skill building for parents target general learning at home, math, science, and literacy.

Accessibility of Resources and Services

Initiatives attempting to enhance parents' access to resources, services, and information comprise 12% of the total number of grants. The majority of initiatives in this category seek to enhance parent access to school information and events. A substantial number aim to expand access by translating school websites, newsletters, and resources and hiring interpreters to communicate with parents.

Parent–Child Communication

Parent–child communication comprises 10% of all initiatives. Initiatives in this category focus on parent–child communication related to parenting style, home

Table 6. Parental Involvement Model: Initiatives by Category.

Categories	Funded initiatives (*n*)	Total grants (%)
Support for well-being	(*n* = 3,839)	34
Nutrition	365	
Physical fitness	167	
Comprehensive student well-being	1,376	
Bullying prevention and safety	542	
Mental health	599	
Safe use of technology	790	
Accessibility of resources and services	(*n* = 1,319)	12
Accessible location for student council	3	
Improvement of school facilities	1	
Community resources and services	169	
Special needs services	13	
School events and information	878	
School events and information for newcomers	32	
School system information and resources	24	
Translation of school information and resources	186	
Transportation to school events	2	
Parent literacy	11	
Parent–child communication	(*n* = 1,135)	10
Character development	109	
School transitions	321	
Postsecondary pathways	48	
Parenting approaches (e.g., style, discipline)	576	
Students with special needs	81	
Skills for home-based learning	(*n* = 3,046)	27
Knowledge of the curriculum	238	
Support for language learners	74	
Learning with technology	169	
Comprehensive home-based learning	1,204	
Learning financial literacy	59	
Literacy development	558	
Learning for students with special needs	2	
Learning math	648	
Learning science	94	

(continued)

Table 6. (continued)

Categories	Funded initiatives (*n*)	Total grants (%)
Home–school–community partnerships	(*n* = 1,180)	11
Support for cultural diversity	188	
Father involvement	12	
Home–school communication skill development	16	
Support for parent participation in local comm.	23	
Support for school inclusivity	21	
Network development and relationship building	676	
Feedback from parents on needs	121	
Parent leadership training	13	
Support for parent leadership	105	
Parent to student volunteer tutoring	5	
Comprehensive initiative	(*n* = 652)	6
Total	11,171	100

discipline, and expectations at both early child and adolescent stages. A number of initiatives in this category also seek to build parents' capacity to provide ongoing guidance at transitional phases of their children's schooling.

Home–School–Community Partnerships

Approximately 11% of all initiatives stress partnerships among families, schools, and community groups. These include developing parents' skills for communicating with teachers and school staff, building relationships between parents and school staff, and fostering an inclusive school environment for all parents through cultural and social events that promote awareness of diverse cultures in the school community. With the aim of strengthening links between home and school, a large number of initiatives use surveys to collect feedback from parents on obstacles that they face when communicating with school staff and participating in school functions.

Comprehensive Initiatives

Comprehensive initiatives represent parental involvement initiatives that fall under multiple categories. These initiatives amount to 6% of all initiatives that were analyzed.

Multinomial logistic regression was performed to examine associations between contextual variables and the derived categories of parental involvement in Table 6. Support for well-being was the reference category because it had the largest number of observations. For unordered nominal dependent variables, this approach is expected to improve the reliability of a logistic regression model (Menard, 2009). The category for comprehensive initiatives was run in the multinomial regression model. However, the coefficients for the comprehensive initiatives are not discussed because these initiatives articulate several categories of focus, preventing meaningful comparison with the other categories. We performed a separate multinomial logistic regression on SES for grants awarded during these years because SES data were only available from 2009 to 2011 (n = 4,629).

To conduct a more detailed analysis, post hoc tests using contingency table analysis within categories were performed (Beasley & Schumaker, 1995). These analyses allowed for an in-depth understanding of differences among contextual variables and specific types of initiatives within categories. Given the sizable number of initiatives, only contingency tables for initiatives exhibiting statistically significant differences within a category are presented.

Results

Table 7 presents the results of multinomial logistic regression on parental involvement categories.

Grade Level (Primary/Secondary)

Relative to the coefficients for secondary schools, the primary school coefficients predicting initiative category are statistically significant for accessibility of resources and services, parent–child communication, and skills for home-based learning. The coefficients are negative for accessibility of resources and services and parent–child communication. By taking the inverse of the log odds (Chmielewski, 2014), primary schools are 1.69 times less likely to undertake accessibility of resources and services initiatives and 2.33 times less likely to undertake parent–child communication initiatives compared with secondary schools. Primary schools are nearly 3 times more likely than secondary schools to undertake initiatives in skills for home-based learning. Compared with other independent variables in the model, the coefficients are the largest in magnitude for grade level.

To deepen understanding of differences between primary and secondary schools, post hoc tests using contingency table analysis were performed to

Table 7. Multinomial Logistic Regression Model Predicting Category.[a]

	Accessibility of resources and services			Parent–child communication			Skills for home-based learning			Home–school–community partnerships		
Variable	*B*	*SE*	Exp(*B*)	*B*	*SE*	Exp(*B*)	*B*	*SE*	Exp(*B*)	*B*	*SE*	Exp(*B*)
Grade level (primary)	−0.52***	0.08	0.59	−0.85***	0.08	0.43	1.08***	0.09	2.94	−0.10	0.09	0.91
School language (English)	−0.23	0.14	0.8	0.3	0.17	1.3	−0.24*	0.11	0.79	−0.17	0.15	0.84
Religion (none)	0.3***	0.07	1.35	0.21**	0.07	1.23	0.35***	0.05	1.42	0.48***	0.07	1.61
Geographical location												
Large urban	0.11	0.08	1.12	0.13	0.08	1.14	−0.16**	0.06	0.85	0.36***	0.08	1.44
Mid-urban	0.18	0.11	1.2	0.13	0.11	1.13	0.20**	0.08	1.23	−0.032	0.12	0.97
Constant	−0.71***	0.16		−1.03***	0.19		−1.14***	0.14		−1.48***	0.18	

Note. Model log likelihood = 646.79. Model χ^2 = (25, *N* = 11165) = 655.67, $p < .001$.
[a]The reference group for the dependent variable is support for well-being.
*$p < .05$. **$p < .01$. ***$p < .001$, two-tailed tests.

Table 8. Differences Within Categories.

Category	Primary (χ^2)	Secondary (χ^2)	Bonferroni corrected significance level
Parent support for well-being			
Mental health and resiliency		84.65	.004
Nutrition	29.39		.004
Parent–child communication			
Character development	23.75		.005
Parenting (style, discipline)	17.25		.005
Supporting student transitions		87.51	.005
Postsecondary preparation		95.87	.005
Skills for home-based learning			
Learning about financial literacy		9.792	.002
Literacy	12.20		.002

examine statistically significant differences for specific types of initiatives within categories (see Table 8). Although primary and secondary schools do not vary substantially in the total percentage of support for well-being initiatives, specific types of initiatives within this category varied. Primary schools more frequently emphasize parenting practices related to nutrition and secondary schools tend to focus on parenting practices for supporting mental health.

School Language (English/French)

The coefficients for schools using English are only statistically significant for skills for home-based learning. The magnitude of this coefficient is small as English schools are only 1.26 times less likely to operate skills for home-based learning initiatives. All of the other coefficients are statistically nonsignificant.

Religion (Publicly Funded Catholic/Public)

Each of the coefficients is positive and statistically significant across categories for public schools. However, the magnitude of difference is small despite prior research indicating potential differences in parental involvement between Catholic and public schools. Relative to Catholic schools, public schools are 1.42 times more likely to undertake skills for home-based

Table 9. Differences Within Categories.

Category	Large urban (χ^2)	Bonferroni corrected significance level
Home–school–community partnerships obtain parent feedback on barriers	9.80	.001
Accessibility of resources and services translations of school information and resources	42.89	.001

learning initiatives and 1.61 times more likely to operate initiatives related to partnerships. Contingency table analysis showed no differences for specific types of initiatives within categories between public and Catholic schools.

Geographic Location

For large urban areas relative to small town/rural areas, skills for home-based learning and partnerships are statistically significant with initiatives in large urban areas being 1.44 times more likely to emphasize partnership activities. Within the partnerships category, Table 9 shows that schools in large urban areas undertake a statistically higher percentage of initiatives that seek parent feedback on barriers to participation and provide translations of school information and resources compared with small town/rural schools. In addition, 64% of initiatives communicating with parents in more than one language target accessibility of resources and services, of which 84% are located in larger urban areas.

SES

For the years that SES data were available, a separate multinomial logistic regression on SES was performed. Table 10 presents the results of the analysis. Relative to the higher SES schools, lower SES schools are 1.33 times more likely to undertake an accessibility initiative. In addition, lower SES schools are 1.47 times more likely to operate an initiative to develop parents' skills for home-based learning. Within categories, there are no statistically significant differences across specific types of initiatives.

In summary, the results underscore several differences across school settings. First, parents of primary school children appear to require support for home-based learning, nutrition, and general parenting strategies, whereas parents of secondary school students may need support for mental health and

Table 10. Multinomial Logistic Regression Model Predicting Category.[a]

	Accessibility of resources and services			Parent–child communication			Skills for home-based learning			Home–school–community partnerships		
Variable	*B*	*SE*	Exp(*B*)	*B*	*SE*	Exp(*B*)	*B*	*SE*	Exp(*B*)	*B*	*SE*	Exp(*B*)
Lower SES schools	0.28*	0.11	1.33	−1.2	0.13	0.88	0.39***	0.10	1.47	0.20	0.12	1.22
Constant	−0.68***	0.08		−0.76***	0.08		−0.24***	0.07		−0.84***	0.08	

Note. Model log likelihood = 102.67. Model χ^2 = (10, *N* = 4,629) = 27.93, *p* = .002. SES = school socioeconomic status.
[a]The reference group for the dependent variable is support for well-being.
*p < .05. *p < .01. ***p < .001, two-tailed tests.

for guiding their children as they transition through school. Second, in large urban areas, initiatives target home–school and parent–parent partnerships and seek feedback from parents on their needs. In large urban areas, multilanguage support is a greater need than in other settings. Third, in lower SES schools, skills for home-based learning and accessibility of resources and services seem to be greater needs for enabling parental involvement than in other settings. Beyond these differences, however, parents across school settings identify relatively similar solutions for enabling parental involvement. Namely, parenting support for well-being and skills for home-based learning are highly recurrent across all settings.

Initiatives Categorized Along Epstein's Parental Involvement Typology

As an additional step in the analysis, the initiatives were mapped onto Epstein's prominent parental involvement typology. Given the dominant use of Epstein's typology, this step helps to determine whether parent-identified needs for parental involvement are reflected in the way that policymakers and schools tend to conceptualize parental involvement (Epstein, 2010). Examples of initiatives applied to both Epstein's typology and the categories derived from this study are presented in Table 11.

Examining the initiatives along Epstein's typology, parenting and learning at home are the main areas of support selected by parents across schools. These two categories represent 71% of all initiatives, whereas collaborating with community, decision making, and volunteering amount to only 4% of all initiatives. Figure 1 shows that the overwhelming majority of initiatives are subsumed under three broad categories of Epstein's typology. What is more

Table 11. Initiatives Mapped Onto Parental Involvement Models.

Initiative	Epstein's typology	Derived categories
Practices for supporting nutrition at home	Parenting	Support for well-being
Parent discipline strategies	Parenting	Parent–child communication
Translation of school information and resources	Communicating	Accessibility of resources and services
Learning math at home	Learning at home	Skills for home-based learning
Supports for parent leadership in school	Decision making	Home–school–community partnerships
Parent to student tutoring at school	Volunteering	Home–school–community partnerships
Accessing community services	Collaborating with Community	Accessibility of resources and services

illuminating is that support for well-being, the most frequently occurring category in Figure 2, is concealed under parenting. Parent–child communication also fades into the broad parenting category. The findings suggest that Epstein's typology may be lacking as a tool for understanding parental involvement.

Discussion

This inquiry provides important insight for enhancing parental involvement in certain contexts. First, in Ontario's large urban areas, where most of the province's diverse immigrant population resides, parent-conceived initiatives stressed home–school–community partnerships, language support, and feedback from the parent community on their needs. In other urban settings with diverse populations, extending multilingual resources and information to parents and engaging in deliberate efforts to understand families' needs may help to spur parent participation. Second, while general distinctions between primary and secondary schools are well documented (Catsambis, 2001), this work illuminates specific parent-identified needs at these two levels. Parents in secondary schools stressed parenting skills for supporting mental health. With mental, physical, and social changes often in flux during older adolescence, students during these years appear to encounter complex mental health issues (Hamlin, Cameron, & Watkins, 2016). Supports for parents to help their children navigate mental health challenges seem to be a need during

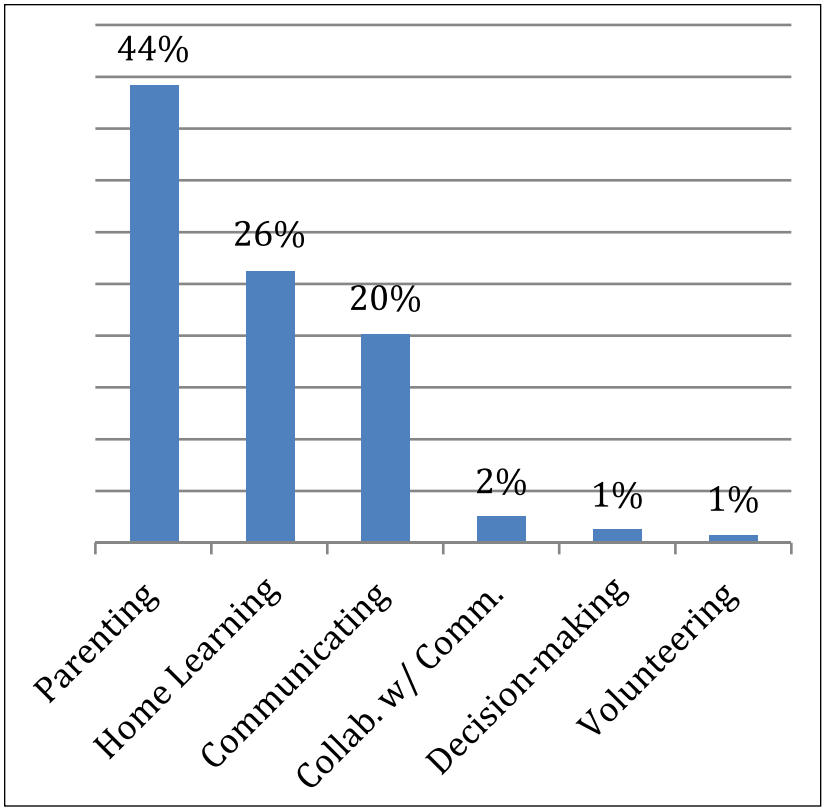


Figure 1. Grants by Epstein typology.

secondary school and parental involvement programs targeting mental health may be a vital resource for parents.

In primary schools, skill development for home-based learning was prominent with many initiatives targeting literacy and numeracy. Substantial evidence suggests that parents can have sizable effects on young children's learning (Crosby et al., 2015; Darling & Westberg, 2004; Dearing et al., 2006; Robinson & Harris, 2014). At the same time, results from this analysis demonstrate that many parents require support for engaging in their children's learning at home. Parents may then benefit from programs providing guidance on home-based learning. Finally, in schools classified as lower SES, parents were slightly more likely to identify accessibility to resources and services as a need. Given the types of initiatives found within this

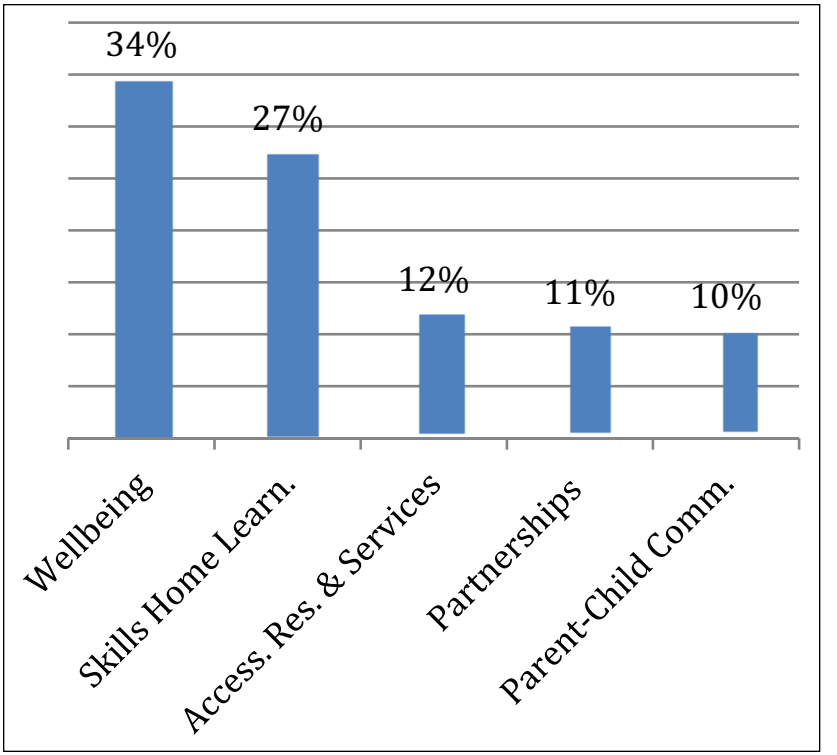


Figure 2. Grants by derived categories.

category, extending access may require intentional strategies for not only informing parents of school information and resources but also connecting families to community services available to them.

While knowledge of these contextual differences can inform approaches to parental involvement, a major finding from this study was the types of initiatives that occurred across all school settings. Most notably, initiatives aimed at skills and knowledge for supporting well-being (e.g., mental health, fitness, nutrition, and safe use of technology use) and home-based learning were two crucial parent-identified needs that were strongly emphasized across school communities. Parent–child communication represented an additional category of initiatives attempting to bolster parents' skills and knowledge. Much research has shown that these three forms of parental involvement are most saliently related to academic achievement and a range of other developmental outcomes (Jeynes, 2010), but parents expressly identified a need for support in

these areas. Well-designed parental involvement programs may then be helpful in providing support for parents in these areas (Green, Walker, Hoover-Dempsey, & Sandler, 2007). However, initiatives seeking to impart skills and knowledge may be interpreted as advancing deficit-based views of parents and initiatives conceived by parents on school councils may privilege only commonly accepted behaviors while neglecting other practices of value (Baquedano-López et al., 2013). While prevailing perspectives of parents on student councils are likely to have influenced thinking about needs of the school community, home-based learning, support for well-being, and parent–child communication initiatives surfaced in all settings, involving thousands of parents. Furthermore, in attempting to impart skills and knowledge, carefully devised programs that strive to value parents' existing knowledge and insights may avoid deficit-based approaches, potentially influencing parents' sense of self-efficacy and beliefs about what they are able to do to support their children (Green et al., 2007).

In contrasting Epstein's typology with the categories of parental involvement derived from this study, Epstein's typology concealed prominent parent-identified areas of need. Both support for well-being and parent–child communication, for instance, were subsumed under Epstein's relatively vague category of parenting. As a catchall category, parenting in Epstein's typology seems to lack substantive meaning. Scholars have also indicated a need to redefine how parental involvement is understood by placing greater emphasis on aspects of parenting (Jeynes, 2010). The model presented in this work highlights qualities of parenting through the support for well-being and parent–child communication categories. Another drawback of Epstein's typology is that it obscures initiatives that aim to increase parents' accessibility to resources and services. Initiatives prioritizing parents' access to resources and services showed that much need may exist for measures that support parent awareness of school information and community resources. These types of initiatives appear to be crucial to fostering participation among all parents (Auerbach, 2007; Hands, 2013; Ladky & Peterson, 2008; Rah et al., 2009; Williams & Sanchez, 2013), but initiatives that emphasize accessibility of resources and services are concealed under either communicating or collaborating with community in Epstein's typology. By contrast, this study's modified model of parental involvement is explicit about connecting parents to resources and services.

Epstein's typology also seems to overemphasize both decision making (e.g., district-level parent council) and volunteering (e.g., fieldtrip chaperone). The majority of parents simply do not volunteer or participate in formal leadership roles in schools (de Carvalho, 2001), often because of time constraints or work commitments (Harris & Goodall, 2008). Other forms of

partnership have relevance to a wider range of parents. In this study, parents identified a need to develop home–school relationships and parent–parent networks by celebrating cultural diversity, fostering an inclusive school environment, and seeking feedback from parents on their needs. These activities may influence parent participation as well-developed relationships and social networks may surmount obstacles to parental involvement (Green et al., 2007; Williams & Sanchez, 2013). Although the model derived from this inquiry recognizes the importance of parent leadership and volunteering, it deemphasizes these types of involvement by subsuming them under the category of partnerships. In this respect, the model may downplay school-operated parental involvement programs that are already occurring or areas where parents face fewer obstacles to participation. When parents on school councils apply for grants and carry out parental involvement programs, they take on leadership and volunteering roles. The home–school–community partnerships category merges these activities with other forms of partnership that are germane to parents.

Much has changed since Epstein's (1995) model was formulated. Rising awareness of complex mental health issues, the diffusion of social media and other technologies, and many other social shifts pose new considerations for parental involvement. By prioritizing parent-identified areas of support, the model of parental involvement presented in this study provides an update on Epstein's typology. No other model of parental involvement has been generated from such a large number of initiatives conceived at local levels. In advancing this modified model, it is worth noting that the initiatives analyzed in this work received relatively modest funding and may not address intractable problems related to poverty or family composition that might impede parental involvement in complicated ways. Some parents may require more intensive supports that exceed what grant-funded initiatives might offer. However, the modified model's emphasis on five categories of parental involvement with relevance for all parents offers important guidance for parental involvement policies and school approaches to parents.

One limitation of this study is uncertainty as to how well-stated plans in the grant summaries corresponded to actual initiatives on the ground. Nonetheless, the initiatives were likely to have a reasonable degree of coherence with stated plans because applicants were required to submit final reports, describing how the plans for their proposed initiative were met and providing a line-item budget. Another caveat is that even though parents led similar types of parental involvement initiatives, the style and tone for promoting and carrying out initiatives may vary across school settings. Future qualitative work might probe how the same types of initiatives might be conducted differently in specific parent communities. Future research might also use this study's model of parental

involvement to investigate the effectiveness of different types of parental involvement programs. There remains a need to understand to what extent programs targeting complex parenting activities and behaviors can be taught and what modes of transmission are most effective for doing so (Jeynes, 2010).

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Notes

1. We were unable to collect information on race/ethnicity because these data are not presently compiled for Ontario's schools.
2. For further discussion of how demographic patterns in inner suburban areas surrounding Ontario's large cities differ from those of the United States, see James and Saul (2007).

References

Agronick, G., Clark, A., O'Donnell, L., & Stueve, A. (2009). *Parent involvement strategies in urban middle and high schools in the northeast and islands region. Issues & Answers* (REL 2009-No. 069). Waltham, MA: Regional Educational Laboratory Northeast & Islands.

Anisef, P., & Lanphier, C. M. (2003). *The world in a city*. Toronto, Ontario, Canada: University of Toronto Press.

Auerbach, S. (2007). From moral supporters to struggling advocates. *Urban Education*, *42*, 250-283.

Ballenger, J. (2009). Parental involvement: Low socio-economic status (SES) and ethnic minority parents' struggle for recognition and identity. In P. M. Jenlink & F.H. Townes (Eds.), *The struggle for identity in today's schools: Cultural recognition in a time of increasing diversity* (pp. 156-168). Lanham, MA: Rowman & Littlefield Education.

Baquedano-López, P., Alexander, R. A., & Hernández, S. J. (2013). Equity issues in parental and community involvement in schools what teacher educators need to know. *Review of Research in Education*, *37*, 149-182.

Barley, Z. A., & Beesley, A. D. (2007). Rural school success: What can we learn? *Journal of Research in Rural Education*, *22*, 1-16.

Bauch, P. A., & Goldring, E. B. (1995). Parent involvement and school responsiveness: Facilitating the home-school connection in schools of choice. *Educational Evaluation and Policy Analysis*, *17*(1), 1-21.

Beasley, T. M., & Schumacker, R. E. (1995). Multiple regression approach to analyzing contingency tables: Post hoc and planned comparison procedures. *The Journal of Experimental Education, 64*(1), 79-93.

Brock, S., & Edmunds, A. L. (2010). Parental involvement: Barriers and opportunities. *Educational Administration and Foundations Journal*, *21*(1), 48-59.

Bryk, A., Lee, V., & Holland, P. (1993). *Catholic schools and the common good*. Cambridge, MA: Harvard University Press.

California Department of Education. (2015). *Parental involvement in Title I schools*. Retrieved from http://www.cde.ca.gov/sp/sw/t1/parentalbroch.asp

Catsambis, S. (2001). Expanding knowledge of parental involvement in children's secondary education: Connections with high school seniors' academic success. *Social Psychology of Education*, *5*, 149-177.

Chmielewski, K. (2014). An international comparison of achievement inequality in within- and between-school tracking systems. *American Journal of Education*, *120*, 293-324.

Coleman, J. S., & Hoffer, T. (1987). *Public and private high schools: The impact of communities*. New York, NY: Basic Books.

Crosby, S. A., Rasinski, T., Padak, N., & Yildirim, K. (2015). A 3-year study of a school-based parental involvement program in early literacy. *The Journal of Educational Research*, *108*, 165-172.

Darling, S., & Westberg, L. (2004). Parent involvement in children's acquisition of reading. *The Reading Teacher*, *57*, 774-776.

Davies, S. (2012). Are there Catholic school effects in Ontario, Canada? *European sociological review*, *29*, 871-883.

Dearing, E., Kreider, H., Simpkins, S., & Weiss, H. B. (2006). Family involvement in school and low-income children's literacy performance: Longitudinal associations between and within families. *Journal of Educational Psychology*, *98*, 653-664.

de Carvalho, M. E. (2001). *Rethinking family school relations: A critique of parental involvement in schooling*. New York, NY: Teacher's College Press.

Denessen, E., Bakker, J., & Gierveld, M. (2007). Multi-ethnic schools' parental involvement policies and practices. *School Community Journal*, *17*(2), 27-43.

Elias, M. J., Patrikakou, E. N., & Weissberg, R. P. (2007). A competence-based framework for parent–school–community partnerships in secondary schools. *School Psychology International*, *28*, 540-554.

Epstein, J. L. (1995). School/family/community partnerships. *Phi Delta Kappan*, *76*, 701-712.

Epstein, J. L. (2010). *School, family and community partnerships*. Boulder, CO: Westview Press.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review*, *13*(1), 1-22.

Fensterwald, J. (2013, May 2). California looks to Ontario schools' reformer for guidance. EdSource. Available from www.Edsource.org

Flessa, J., & Gregoire, H. (2012). Policy aspirations and dilemmas of implementation: Leadership for partnerships in Ontario, Canada. In S. Auerbach (Ed.), *School*

leadership for authentic family and community partnerships: Research perspectives for transforming practice (pp. 115-132). New York, NY: Routledge.

Frew, L., Zhou, Q., Duran, J., Kwok, O., & Benz, M. (2013). Effect of school-initiated parent outreach activities on parent involvement in school events. *Journal of Disability Policy Studies*, *24*, 27-35.

Gidney, R. D. (1999). *From hope to Harris: The reshaping of Ontario's schools*. Toronto, Ontario, Canada: University of Toronto Press.

Green, C. L., Walker, J. M., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology*, *99*, 532-544.

Hamlin, D., & Davies, S. (2016). Toronto: A new global city of learning. *London Review of Education, 14*(2), 186-198.

Hamlin, D., Cameron, D., & Watkins, E. (2016). *Ontario's guidance counsellors: Spread thinly in an environment of growing expectations*. Toronto, ON: People for Education.

Hands, C. (2013). Including all families in education: School district-level efforts to promote parent engagement in Ontario, Canada. *Teaching Education*, *24*, 134-149.

Harris, A., & Goodall, J. (2008). Do parents know they matter? Engaging all parents in learning. *Educational Research*, *50*, 277-289.

Henderson, A. T., & Mapp, K. L. (2002). *A new wave of evidence: The impact of school, family, and community connections on student achievement*. Austin, TX: Southwest Educational Development Laboratory.

Hornby, G., & Lafaele, R. (2011). Barriers to parental involvement in education: An explanatory model. *Educational Review*, *63*, 37-52.

Improving America's Schools Act of 1994, 20 U.S. C. § 1116 (1994).

James, C. E., & Saul, R. (2007). Urban schooling in suburban contexts: Exploring the immigrant factor in urban education. In W. T. Pink & G. W. Noblit (Eds.), *International handbook of urban education* (pp. 841-858). The Netherlands: Springer.

Jeynes, W. (2005). A meta-analysis of the relation of parental involvement to urban primary school student academic achievement. *Urban Education*, *40*, 237-269.

Jeynes, W. (2010). The salience of the subtle aspects of parental involvement and encouraging that involvement: Implications for school-based programs. *Teachers College Record*, *112*, 747-774.

Jeynes, W. (2011). *Parental involvement and academic success*. New York, NY: Routledge.

Jeynes, W. (2012). A meta-analysis of the efficacy of different types of parental involvement programs for urban students. *Urban Education*, *47*, 706-742.

Kushman, J. W., & Barnhardt, R. (2001). Reforming education from the inside-out: A study of community engagement and educational reform in rural Alaska. *Journal of Research in Rural Education*, *17*, 12-26.

Ladky, M., & Peterson, S. S. (2008). Successful practices for immigrant parent involvement: An Ontario perspective. *Multicultural Perspectives*, *10*(2), 82-89.

Lareau, A. (2003). *Unequal childhoods: Class, race, and family life*. Berkeley: University of California Press.

Lightfoot, D. (2004). Some parents just don't care. *Urban Education*, *39*, 91-107.

Ma, X., Shen, J., & Krenn, H. Y. (2014). The relationship between parental involvement and adequate yearly progress among urban, suburban, and rural schools. *School Effectiveness and School Improvement*, *25*, 629-650.

Mattingly, D. J., Prislin, R., McKenzie, T. L., Rodriguez, J. L., & Kayzar, B. (2002). Evaluating evaluations: The case of parent involvement programs. *Review of Educational Research*, *72*, 549-576.

Menard, S. (2009). *Logistic regression: From introductory to advanced concepts and applications*. Los Angeles, CA: Sage.

Meyer, J. A., & Mann, M. B. (2006). Teachers' perceptions of the benefits of home visits for early elementary children. *Early Childhood Education Journal*, *34*, 93-97.

Michelson, W. (2006). Metropolitan government and the social ecology of minority residential distribution: The experience of Toronto. In E. Fong (Ed.), *Inside the mosaic* (pp. 76-98). Toronto, Ontario, Canada: University of Toronto Press.

Mourshed, M., Chijioke, C., & Barber, M. (2010). *How the world's most improved school systems keep getting better*. London: McKinsey & Company.

No Child Left Behind (NCLB) Act of 2001, 20 U.S.C. § 1118 (2002).

Ontario Ministry of Education. (2010). *Parents in Partnership: A Parent Engagement Policy for Ontario Schools, 2010*. Toronto, Ontario, Canada: Author.

Ontario Ministry of Education. (2014a). *Parents reaching out grants*. Retrieved from http://www.edu.gov.on.ca/eng/parents/reaching.HTML

Ontario Ministry of Education. (2014b). *Quick Facts: 2012-2013*. Toronto, Ontario, Canada: Author.

Organisation for Economic Co-Operation and Development. (2010). *Ontario, Canada: Reform to support high achievement in a diverse context*. Retrieved from http://www.oecd.org/pisa/pisaproducts/46580959.pdf

Park, H. J. (2006). Parental involvement and educational outcomes: The significance of institutional arrangements of educational system. In D. P. Baker & A. W. Wiseman (Eds.), *International Perspectives on Education and Society, Vol. 7: The impact of comparative education research on institutional theory* (pp. 187-208). Bingley, United Kingdom: Emerald Group.

Rah, Y., Choi, S., & Nguyễn, T. S. T. (2009). Building bridges between refugee parents and schools. *International Journal of Leadership in Education*, *12*, 347-365.

Robinson, K., & Harris, A. (2014). *The broken compass: Parental involvement with children's education*. Cambridge, MA: Harvard University Press.

Schutz, A. (2006). Home is a prison in the global city: The tragic failure of school-based community engagement strategies. *Review of Educational Research*, *76*, 691-743.

Semke, C. A., & Sheridan, S. M. (2012). Family-school connections in rural educational settings: A systematic review of the empirical literature. *School Community Journal*, *22*, 21-47.

Sheldon, S. B. (2002). Parents' social networks and beliefs as predictors of parent involvement. *The Primary School Journal*, *102*, 301-316.

Shiffman, C. D. (2013). The Juggling Act Navigating Parent Involvement in the Welfare Reform Era. *Educational Policy, 27*(1), 64-91.

Simon, B. S. (2004). High school outreach and family involvement. *Social Psychology of Education*, *7*, 185-209.

Smith, J. G. (2006). Parental involvement in education among low-income families: A case study. *School Community Journal*, *16*, 43-56.

Smith, J., Wohlstetter, P., Kuzin, C. A., & De Pedro, K. (2011). Parent involvement in urban charter schools: New strategies for increasing participation. *School Community Journal*, *21*(1), 71-94.

Statistics Canada. (2011). *National household survey 2011*. (Catalogue 99011X). Retrieved from https://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-011-x/2011001/tbl/tbl02-eng.cfm

Statistics Canada. (2013). *National household survey profile: 2011 National household survey*. (Catalogue 99004-XWE). Retrieved from http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/prof/details/Page.cfm?Lang=E&Geo1=PR&Code1=35&Data=Count&SearchText=Ontario&SearchType=Begins&SearchPR=01&A1=All&B1=All&GeoLevel=PR&GeoCode=35

Statistics Canada. (2014). *Population by year, by province, and by territory*. (Table 051-001). Retrieved from http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo02a-eng.htm

Valenzuela, A. (2010). *Subtractive schooling: US-Mexican youth and the politics of caring*. New York, NY: State University of New York Press.

Washington D.C. Office of the State Superintendent of Education. (2008). *Parent learning opportunities grant*. Retrieved from http://osse.dc.gov/release/osse-announces-parental-involvement-grants

Williams, T. T., & Sanchez, B. (2013). Identifying and decreasing barriers to parent involvement for inner-city parents. *Youth Society, 45*(1), 54-74.

Author Biographies

Daniel Hamlin is a Doctoral Candidate in the Department of Leadership, Higher and Adult Education at the University of Toronto. His research focuses on parental involvement, school choice, and urban educational policy.

Joseph Flessa is a Professor in the Department of Leadership, Higher and Adult Education at the University of Toronto. His recent projects include investigation of school leadership in high-poverty schools in Chile, parent participation rates in schools in the Province of Ontario, and online professional development courses for principals in First Nations' schools across Canada.

A New Framework for Understanding Parental Involvement: Setting the Stage for Academic Success

ANGEL L. HARRIS AND KEITH ROBINSON

The Coleman Report posited that the inequality of educational opportunity appears to stem from the home itself and the cultural influences immediately surrounding the home. However, this line of inquiry assumes that school and home processes operate in isolation, which is often not the case. An example of how families and schools can reinforce one another is through parental involvement. Whereas some studies suggest that children have better achievement outcomes when their parents are involved in their education, other studies challenge the link between parental involvement and academic outcomes. One major reason for this lack of consensus among scholars is that parents' involvement has been measured differently across studies. Thus, scholars' disagreements about how parents should be involved and about which aspects of parental involvement are associated with improvements in children's academic outcomes have contributed to inconsistent findings. We argue that the mixed results observed in previous studies indicate that parental involvement does not operate through the typical channels posited by researchers, educators, and policymakers and that traditional measures of parental involvement fail to capture the fundamental ways in which parents help their children academically. We propose a framework of parental involvement that might provide some clarity on how parental involvement operates.

Keywords: parental involvement, academic achievement

The Coleman Report states that "the sources of inequality of educational opportunity appear to lie first in the home itself and the cultural influences immediately surrounding the home" (Coleman et al. 1966, 73–74). The findings of James Coleman and his colleagues suggest that nonschool factors such as family and neighborhood characteristics are more consequential for student outcomes than school factors. However, proceeding with this line of inquiry assumes that school and home processes operate in isolation. As Karl Alexander notes elsewhere in this issue, this "school versus family framing" does not account for the ways in which families, schools, and neighborhoods matter for youth outcomes, both separately

Angel L. Harris is professor of sociology and director of the Program for Research on Education and Development of Youth at Duke University. **Keith Robinson** is a researcher (most recently with the University of Texas) now unaffiliated.

We want to thank Danielle Allen, Paul Attewell, Rob Crosnoe, Janeria Dunlap, Linsey Edwards, Tod Hamilton, Mark Hayward, Bob Hummer, Sara McLanahan, Seth Moglen, Chandra Muller, Kelly Raley, and Marcelo and Carola Suarez-Orozco. We would not have been able to complete this project without the generosity of the Institute for Advanced Study or without "STEM in the New Millennium: Preparation, Pathways, and Diversity," a grant funded by the National Science Foundation (DUE-0757018) to Chandra Muller and Catherine Riegle-Crumb. Direct correspondence to: Angel Harris at angel.harris@duke.edu, Duke University, Department of Sociology, Soc/Psych Building, 417 Chapel Dr., Durham, NC 27708; and Keith Robinson at keithdion@gmail.com.

and together. One such example of how families and schools can reinforce one another is through parental involvement.

The notion that parents play a key role in children's educational success has become conventional wisdom, and parental involvement in children's schooling has been a major component of school reform efforts and federal education policies over the last two decades (Comer 1992; Epstein 1985). For example, the Improving America's Schools Act of 1994 proposed to afford "parents meaningful opportunities to participate in the education of their children at home and at school," and one of the six aims of the No Child Left Behind Act of 2001 was to increase parental involvement (section 1118).

Decades of research generally support the conclusion that children have better achievement outcomes when parents are involved in their education (Domina 2005; Muller 1995, 1998; Sui-Chu and Willms 1996). However, not all studies confirm a link between parental involvement and academic outcomes (Izzo et al. 1999; Pomerantz, Moorman, and Litwack 2007), and others suggest that parents sometimes initiate involvement as a response to their children's academic difficulties (Catsambis 2001; Desimone 2001). Furthermore, though numerous researchers have focused on variation in parental involvement in children's education (Domina 2005; Jeynes 2003; Stein and Thorkildsen 1999; Zellman and Waterman 1998), scholars disagree about how parents should be involved and which aspects of parental involvement are associated with improvements in children's academic outcomes.

In a recent study that contains nearly every measure of parental involvement used in previous studies—sixty-three in total, across four data sets—and conducted by social class and across six racial groups, we find that there is no clear positive connection between parental involvement and academic outcomes (Robinson and Harris 2014). Specifically, parental involvement was *not* related to achievement in more than half (53 percent) of the 1,556 associations between parental involvement and achievement examined in our study. In fact, there were more negative associations (27 percent) between parental involvement and achievement than positive associations (20 percent). The benefits associated with parental involvement appear to be strongest for younger children (grades 1 to 5), though there are an equal number of positive and negative associations between parental involvement and achievement for children in this group. Furthermore, parental involvement is insufficient for reducing racial differences in achievement. Although a critique can be raised about each measure of involvement and outcome contained in our study, the extensiveness of our approach provides a compelling portrait of the role of parental involvement in children's schooling based on the sheer preponderance of evidence.

It is important to note that there is a lack of consensus among scholars on what constitutes parental involvement in schooling. For example, Dean Hoge, Edna Smit, and John Crist's (1997) conception of involvement entails four components: parental expectations, parental interest, involvement in school, and family and community. Wei-Cheng Mau (1997) claims that the most important involvement measure is parental supervision of homework. Darcy Hango (2007) emphasizes the relational aspect of parents' time with children, primarily because it provides children with the social capital to mediate harmful effects of financial deprivation. Joyce Epstein (2010) summarizes the ranges of family involvement within a classification system that includes school-home communications, parent involvement within the school and community, home learning activities, and parents serving as decision-makers. Moreover, traditional measures of parental involvement often do not capture some very important features of parent behavior that impact youth outcomes, such as vocabulary usage (Hart and Risley 1995). Such conceptual differences contribute to inconsistent findings. Additionally, some studies examine the parental involvement–student achievement link for elementary school children (Dearing and Taylor 2007; Schulting, Malone, and Dodge 2005), whereas others focus on adolescents (McNeal 1999).

We argue that traditional measures of pa-

rental involvement fail to capture the fundamental ways in which parents actually help their children academically. We propose a framework of parental involvement that might provide some clarity on how parental involvement operates. We argue that the mixed results observed in previous studies indicate that parental involvement does not operate through the typical channels posited by researchers, educators, and policymakers. We provide a brief introduction to the framework followed by a discussion of what served as the impetus for the theory. We then elaborate further on the theory and discuss how it might apply to social class and race. We conclude with a discussion of whether the claim in the Coleman Report that inequality of educational opportunity stems primarily from the home and culture is consistent with empirical evidence fifty years later.

TOWARD A NEW FRAMEWORK OF PARENTAL INVOLVEMENT

Several years ago, during a personal conversation, a colleague mentioned that her sibling was enrolled in a prestigious law school. When asked what her parents did to attain such success from their children, she recalled that her parents rarely talked to them about school, did not help with homework, and did not read to them. Despite their lack of involvement, however, her parents had high expectations of them and they knew from an early age that doing well in school was important. Although she was discussing the role her parents played in helping her attain academic success, she could not recall a set of home- or school-based practices her parents employed. This conversation motivated us to explore the types of things parents do that might not be reflected in studies on parental involvement.

We employ the metaphor of "stage-setting" to convey the theory. In theater, stage-setters are responsible for creating a context that allows the cast to successfully enact the performance. Stage-setters create a life space—the parameters within which the actor's performance occurs—that corresponds with the intended action. Poor stage-setting can compromise an actor's ability to successfully play a role, thereby leading to a poor performance because it does not draw the audience into the world intended by the playwright. The stage-setter reinforces the performance at critical transition points, such as between acts. Thus, a good performance can be characterized as a partnership between two critical components: (1) the actor embodying his or her role, and (2) the stage-setter creating and maintaining an environment that reinforces (or does not compromise) the actor's embodiment of the role. Likewise, many parents construct and manage the social environment around their children in a manner that creates the conditions in which academic success is possible. In our view, this analogy captures what many parents do to position their children for academic success.

This concept stems from focus groups we conducted with students enrolled at a major public university in the Southwest. Students were asked to identify the involvement activities that their parents employed specifically to help them succeed academically (see Robinson and Harris 2014). The focus groups yielded four themes that are helpful for explaining stage-setting. First, students reported that their parents were *supportive,* not just in their schooling but in their extracurricular activities. They interpreted this support as instrumental for their academic success because it effectively communicated that their parents cared about their overall success in life and were not simply imposing pressure on them to perform well academically. They described a type of support that did not involve micromanagement of their academic lives (which can be intrusive or overbearing). Second, students credited their parents with *skillfully navigating school choices* through the K–12 school system. Their parents enrolled them in expensive private schools or made vigorous efforts to enroll them in high-quality public schools. Third, parents *effectively conveyed the importance of school,* often in a manner we thought might lead their children to make academic success central to their purpose in life; for example, if parents had immigrated to the United States seeking better opportunities, their children had come to understand that academic success was the key to such advancement. Their parents also provided clear examples of the undesirable out-

comes of not taking school seriously. Finally, many students recalled being told, "You're the smart one," at various points throughout their childhood and adolescence. They regarded this *label of being smart* as particularly important because it motivated them to succeed academically owing primarily to a sense of responsibility to their parents and siblings. This labeling defined an academic identity for them distinct from the identities of their siblings.[1]

Despite not being mutually exclusive, cumulative, or completely related, the four themes provide important context for understanding the role of parents in children's schooling. Students in the focus groups struggled to identify their parents' most important involvement *activity* (or activities) that had contributed to their academic success. Many students noted that their parents could not help much with schoolwork beyond fifth grade. Although their expectations for success were high, it bears repeating that these parents conveyed their expectations in ways that would not be considered intrusive or resembling micromanagement. Their children's difficulty in identifying their involvement activities is a telling point we discuss in the next section.

STAGE-SETTING

Stage-setting reflects parents' messages about the importance of schooling and the overall quality of life they create for their children. Although we certainly conceptualize these factors as parental involvement, they are fundamentally distinct from the traditional conception of parental involvement in children's schooling, such as reading to the child, helping with homework, and meeting with teachers. If parental involvement is conceived of in the traditional manner, then previous research on whether parental involvement "works" is mixed. However, stage-setting is closer to the intangible type of parenting, described by Annette Lareau (2003), that is more about cultivating or enriching the child than effecting a particular academic outcome. For example, activities such as trips to museums and involvement in extracurricular endeavors (such as ballet or piano lessons) are only tangentially about increasing achievement; the benefits of such activities are related to "broadening horizons" rather than earning an A in math.

Stage-setting is a conception of parental involvement with two components: (1) conveying the importance of education to a child, and (2) creating and maintaining an environment or life space in which learning can be maximized (or not compromised). Parents vary in the extent to which they can successfully convey this message and create this life space. For instance, *most* parents express that education is important, yet some parents are able to make this message more central to their children's frame of reference. Parents' level of success in conveying the importance of education can be measured by gauging a student's academic identification: the degree to which academic pursuits and outcomes form the basis for his or her overall self-evaluation, or global self-esteem (Osborne 1997). To sustain school success, a child usually must identify school achievement as a part of his or her self-definition (Steele 1997). It is important to note that the relationship between academic self-concept and academic achievement is weaker for black youths, perhaps because they believe that performance evaluations do not reflect their academic abilities and therefore discount them more than do their white peers (Morgan and Mehta 2004). Thus, some groups experience obstacles in maintaining an academic identity, which we discuss later.

In terms of creating a life space conducive to academic success, parents who engage in successful stage-setting are likely to consider the impact of both home and school. At home an ideal learning environment is one in which a child's basic and essential needs (such as food and shelter) are met. As a result, he or she need not worry about the family's ability to survive. Whereas the needs of both economically disadvantaged youth and affluent youth might be adequately met, the former are likely to be much more aware of the tenuous nature

1. We would not necessarily suggest motivating children by defining one child's "smartness" relative to his or her siblings. What seems important is that motivation to do well academically was fostered through the positive labeling and reinforcement given at various points in children's lives rather than on a daily basis.

of their parents' efforts to meet their needs. At the neighborhood level, an environment conducive to learning is one in which children feel safe and residents enjoy a good quality of life. We elaborate further on each of these stage-setting components in the next sections.

MESSAGES ABOUT THE VALUE OF SCHOOLING

Although most parents want the best for their children—which in most cases includes some level of academic success—they vary in the degree to which they succeed in conveying the importance of school to their children. Within the context of stage-setting, the difference between conveying that message and *successfully* conveying that message lies in how well the message "sticks": in the latter case, it becomes a major basis for how children define themselves. Thus, success is entirely measured by how deeply the message about the importance of education is engrained within the child's identity.

Ideally, students' global self-esteem (their overall view of the self) is entirely determined by their academic self-concept: they are completely identified with academic success. It is important to note that an individual's self-concept in a particular domain (such as academic ability) is both conceptually and empirically distinct from that person's global self-esteem (Marsh 1986; Rosenberg 1979; Rosenberg et al. 1995). A student may evaluate himself negatively in terms of academic ability yet still have positive self-esteem, while another may evaluate herself positively in terms of academic ability and have negative self-esteem (Crocker and Major 1989). In both cases, academic ability is not central to the student's identity and thus not crucial for his or her overall evaluation of self. Osborne (1997, 728) notes that "students who are more identified with academics should be more motivated to succeed because their self-esteem is directly linked to academic performance. For these students, good performance should be rewarding and poor performance should be punishing." By contrast, for a student with a low academic identity, there is no contingency between academic outcomes and self-esteem: good performance is not rewarding, and poor performance is not punishing. As such, students who do not identify with academics have little incentive to expend effort in academic endeavors and may focus their efforts elsewhere (that is, on whatever is most consequential for their self-esteem).[2]

Some parents experience external challenges in their efforts to link their children's academic success to their global self-esteem. Claude Steele (1997, 613) notes that identification with a particular domain requires that one perceives "good prospects in the domain, that is, that one has the interests, skills, resources, and opportunities to prosper there, as well as that one belongs there, in the sense of being accepted and valued in the domain." He further argues that societal pressures against certain groups "can frustrate this identification; and that in school domains where these groups are negatively stereotyped, those who have become domain identified face the further barrier of stereotype threat, the threat that others' judgments or their own actions will negatively stereotype them in the domain." Numerous studies demonstrate that school practices such as differential disciplinary enforcement in school, the privileging of white and middle-class norms (Lareau 2003), and tracking (Bowles and Gintis 1976; Lucas 1999; Tyson 2011) perpetuate group differences and make blacks

2. Academic disidentification is not synonymous with a resistance to schooling. Although students who resist academic success as described by the oppositional culture theory may not identify with schooling, some students may disidentify from academics simply to avoid further feelings of inadequacy or to protect their global self-esteem (Crocker and Major 1989). However, one can disidentify from a particular domain without engaging in active or purposeful resistance within the domain, and while understanding the value associated with success in the domain. For example, an inability to regularly exercise and maintain a healthy diet can lead one to disidentify from both endeavors despite having a strong understanding of the value associated with each of them. For those who disidentify from regular exercise and a healthy diet, their performance in both areas has no bearing on how they feel about themselves in general. Stephen Morgan and Jai Mehta (2004) posit that some mild rejection of performance evaluations can be protective of the sense of self, thereby forestalling a descent into full-blown disidentification.

and Hispanics more susceptible to stereotype threat. In fact, Geoffrey Borman and Jaymes Pyne present findings in this issue suggesting that youth from racial minority groups have been susceptible to stereotype threat since the publication of the Coleman Report.

We argue that whereas most parents convey the importance of education to their children, socioeconomic status partially determines the extent to which the message becomes a central feature of youths' self-definition. Relative to working-class and poor parents, middle-class parents are better able to place their children within contexts that can reinforce the connection between their academic self-esteem and their global self-esteem and minimize those factors that can challenge the centrality of academic success to their self-definition.

A LIFE SPACE CONDUCIVE TO LEARNING

The degree to which messages about the importance of education are successfully transmitted also depends on the life space that parents create for their children at home and in the neighborhood. The very space itself may transmit messages that impact children's approach to schooling. Sometimes messages from within the home and the neighborhood conflict with each other. For example, a parent may attempt to link her child's self-esteem with his academic success, but if the family is surrounded by a neighborhood that does not transmit the same message, these efforts at home can be compromised. Thus, identical academic messages from two different sets of parents can result in different levels of academic identity if they live in different types of neighborhoods (say, Beverly Hills versus inner-city Detroit). Not only does the neighborhood context facilitate or hinder parental efforts to convey the importance of academics, but it also serves as an important frame of reference in which to identify the connection between school and children's future self in these spaces.

Parents have greater control of their children's life space inside their home. They can control the physical space in ways that reinforce or convey messages about the relative importance of school. For example, each decision as to whether to have a television in a child's bedroom, whether to put a desk in the child's bedroom or in a more common area, or whether to have bookshelves in the living room or a home office communicates nonverbally something about the importance of learning. Outside the home, parental control of the life space is limited, mainly to the "selection" of where to live. Once that decision is made, the neighborhood has its own influence independent of parents. In neighborhoods characterized as unsafe, the most parents can do is limit their children's movement within the neighborhood in hopes of minimizing the effect of factors that may compromise their academic success. Parents' ability to secure spaces conducive to learning is not entirely driven by personal choice; social class is a major determinant of the extent to which parents can influence their children's life space.

Stage-setting deems the context of children's lived experiences to be just as important as the educational messages they receive from their parents. Consider a fictional middle-class parent named Tom and his child. Tom's home is located in a neighborhood inhabited by professionals and their families. Nearby is a well-funded high school, a thriving business section, coffee shops and restaurants, a major university, and several large parks where youth sporting events occur. On weekends, parents from the neighborhood attend their children's games and often arrange postgame trips to a local restaurant. Such activities provide opportunities for parents and children to interact about their children's current school experiences, academic progress, and college plans.

Tom's child is in a fortuitous position because the pro-academic messages he receives from his father are reinforced by his interactions with the community. Tom values education and has set the stage for his child to succeed. As a middle-class parent, Tom is likely to be quite involved in his child's schooling. His home may contain many books, he attends school functions, he knows his child's teachers, and he is well aware of the literature touting the benefits of involved parents. When we as researchers view Tom in the data set, he will be a parent who is high on involvement (home and school) with a child who is high-achieving.

Others in the data like Tom and his child will lead us toward the connection that highly involved parents tend to produce academically successful children. This conclusion would not recognize that Tom set the stage for his child to do well in school. Once the stage was set, his child was on course to being academically successful. Tom might proceed to be highly involved, but his involvement is not what is driving his child's school success. It is the fact that Tom has created a space that sets this child up for success. This stage-setting process is what is not adequately captured in quantitative data sets.

Effective stage-setting becomes easier to conceptualize when one considers the strong connection between the educational attainment of parents and their children. For example, most academicians have academically successful children, and certain aspects of their lifestyle reinforce the importance they attribute to education or living a "life of the mind": having a home office, regularly reading national media sources like the *New York Times, Los Angeles Times,* or *Washington Post,* hosting occasional dinner parties, effortlessly (and even obliviously) engaging in (or enacting) critical thinking in common everyday discussions, and living among peers with levels of education above the national norm. This lifestyle would describe many academics regardless of whether they have children. In most cases, children growing up under these conditions cannot help but be academically successful; they certainly are not at risk of becoming high school dropouts. Whereas for most people a high school diploma is a major marker or transition point, college professors often consider K–16 compulsory. For academicians, high educational expectations are built into their lifestyle and the lifestyle they create for their child. They are able to (1) convey the importance of education to their children—indeed, the very concept of education is woven into the fabric of their identity—and (2) create a life space for their children that constantly reinforces the message. Thus, their children are likely to be academically successful regardless of how involved they are in their children's schooling.

This aspect of stage-setting is consistent with the conclusion from the Coleman Report that nonschool factors are a major determinant of group differences in academic outcomes. We argue that parents' influence does not stem from their involvement in their children's schooling in the traditional sense, but rather from their location within a larger socioeconomic structure. However, the Coleman Report underestimates the extent to which schools contribute to group differences in academic outcomes. Schools are also a component of the life space that youth navigate. They are not fixed autonomous structures, but rather dynamic social systems, consisting of teachers and students, that have implications for youths' academic experiences. Parents can intervene in this space on behalf of their children. Also, a positive life space at home can create a buffer against negative experiences at school. But similar to neighborhoods, schools can affect academic achievement independent from the life space parents create in the home. As Prudence Carter notes elsewhere in this issue, school officials can perpetuate unequal educational experiences inside and outside of classrooms because their actions are informed by intensely embedded racial and class meanings that reinforce the strength and rigidity of social boundaries.

STAGE-SETTING VERSUS TRADITIONAL PARENTAL INVOLVEMENT

The difference between stage-setting and the traditional conception of parental involvement examined in previous studies becomes apparent when we consider how each might be employed by parents. Whereas traditional forms of involvement comprise any number of parental activities, stage-setting requires that parents focus on only two factors: messages and life space. Certainly, parents can be traditionally involved in their children's schooling in some ways to accomplish each of these factors. However, stage-setting aims can also be achieved without employing any traditional forms of involvement. Thus, a busy parent with a demanding career can be a successful stage-setter with minimal direct involvement in his or her child's schooling.

Analysis of traditional forms of parental involvement does not capture the life space

within which children operate, which is independent of parents' actual activities. Students in our focus groups struggled when asked to name their parents' most important involvement activities that contributed to their academic success. They described their parents in ways such as: "They were supportive in life"; "They attended my band concerts"; "They left schooling up to me"; or "They did not talk much at all about school." At one point students were asked, "Did any of your parents read books to you when you were a child, attend PTA meetings, regularly converse with your teachers, or discuss college plans with you?" Many students shook their heads, and a male student recalled, "My parents didn't do any of those things with me. I have two older siblings that my parents gave attention to, so by the time I came along they were too tired to do anything academically with me."

These students' struggle in answering our questions highlights the challenge of trying to conceptualize how their parents assisted academically. It should be fairly easy to recall your parents being PTA members, reading books to you when you were young, having rules about homework, or having discussions with you about college or school courses. However, if your parents were in the background, so to speak, affecting your academic performance in abstract ways such as gradually changing your perspective on life, giving you the feeling that they supported your efforts in school and extracurricular activities, or instilling an academic motivation in you when you first began formal schooling, it is probably more difficult to quantify the behavioral contributions they made to your academic life. After reviewing the discussion with students in both focus groups, we had the impression that most of them had never thought about the specific activities their parents employed to enhance their school performance or whether these activities contributed to their academic success.

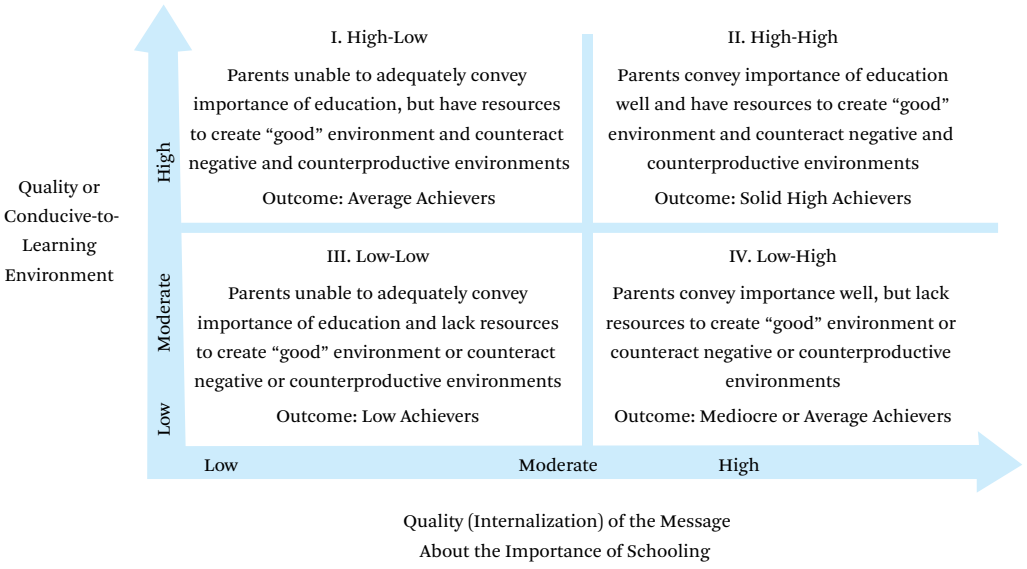
The themes that emerged from the focus groups describe the importance that parents placed on children's academic success in ways that differ from the conventional involvement activities that schools and policymakers currently advocate. Parents' primary contributions, according to students, stemmed from setting high academic expectations and creating a comfortable space in which they could develop their own academic motivations. These are core principles that advocates for parental involvement understand as important. In fact, they are the very same principles the educational community is attempting to capture in proscribing conventional involvement activities. Yet the ways in which the parents of the students we spoke with acted upon these principles were different from conventional involvement activities.

STAGE-SETTING PROFILES

For further clarity, we provide a cross-tabulation for stage-setting in figure 1 that yields four distinct profiles. Children's *quality or conduciveness-to-learning environment* (QCLE) is listed along the *y*-axis, and the degree of successful *internalization of the message that schooling is important* is listed along the *x*-axis. Although cross-tabs convey that the factors along the *x*- and *y*-axes are dichotomized, they are useful in this case because they highlight four general profiles associated with stage-setting. However, both QCLE and the degree of internalization of messages about education for youth fall along a continuum, which label *low, moderate,* and *high*. It is more accurate to imagine the figure superimposed on a scatterplot of the relationship between measures that capture children's QCLE and the degree to which they identify with success in academic domains.

Each quadrant in figure 1 provides a general description of the children who fall under that profile. Children whose values on each factor place them in the top left quadrant typically live in environments that can be characterized as very conducive to (and reinforcing of) learning, but they have low levels of academic identification (thus the label "high-low"). Despite not feeling strongly defined by academics, these children will perform well enough in school to graduate from high school and even to attend college. This quadrant represents the typical children in a middle-class or affluent community whose academic performance places them in the middle or at the lower end of the achievement distribution in their schools. Although they are not among the high achievers, their achievement levels do not raise red

Figure 1. The Learning Environment and Parents' Message About the Value of Schooling: Stage-Setting



Source: Authors' calculations.

flags; their likelihood of dropping out of school is low.

Children in the top right quadrant (high-high) live in a similar environment (high on QCLE) but have internalized the positive messages about the value of schooling they receive in a manner that embeds academics within their self-definition. These children will be high achievers, and maybe even overachievers, who graduate from high school toward the top of their class and gain admission into selective colleges and universities.

The bottom left quadrant (low-low) represents children whose life space is not conducive to learning and who are not strongly identified with academics. These children would be low achievers *regardless* of their parents' level of involvement in their schooling. The message about the importance of schooling is not conveyed in a manner that anchors academics to these children's self-definition, and the environment they navigate compromises this process even further. This quadrant captures the typical low-achieving child living in a disadvantaged community.

Finally, children in the low-high group (bottom right quadrant) are those who strongly identify with academics but live in an environment that does not reinforce their academic identity. These children are typically the average to high achievers in disadvantaged communities.

Figure 1 provides some direction for how the concept of stage-setting can be tested. We argue that children's location within this framework strongly determines their achievement independent of their parents' level of *direct* involvement. This framework is also helpful for understanding why achievement varies between students who appear to be similar in many ways, such as in the schools they attend, the communities in which they live, and even the families from which they come. Although children in the top quadrants could be similar along numerous dimensions, their achievements will be determined by how strongly they identify with academics. Students with high QCLE levels are virtually assured of never being at any serious risk of dropping out of high school. Even when compared to children in the bottom left quadrant, children in the top left quadrant will perform better academically; being able to ride the wave of their high QCLE allows them to overcome their lack of academic identity. In fact, the identity they establish in the other domains made available to

them by their middle-class status (for example, lacrosse, gymnastics, soccer) might enable them to gain admission into good colleges despite their average levels of academic achievement. Similarly, the variations in levels of academic identification among children who are situated within low-QCLE contexts (the bottom quadrants) might account for the variation in achievement observed among children who appear to be similarly disadvantaged.

STAGE-SETTING, SOCIAL CLASS, AND RACE

As noted earlier, we did not attach students' family SES to their parents' involvement activities when describing the themes that emerged from our focus groups. We would suggest, however, that the ease with which parents can set the stage for academic achievement is related to their socioeconomic resources, primarily because the resources commonly found in affluent communities are more reinforcing of parents' attempts to instill in their children the value of schooling. In fact, the spatial concentration of advantage within neighborhoods has an independent effect on youths' academic outcomes. James Ainsworth (2002) finds that as the percentage of adults with a college education and a professional or managerial occupation within a community increases, so do youths' educational aspirations and achievement. Furthermore, Ainsworth shows that the benefit of having high-status residents in a neighborhood overshadows the effects of negative neighborhood characteristics. He finds that more than half of the detrimental effect of living in economically deprived neighborhoods is attributable to a lack of high-status residents in such neighborhoods.

Conversely, living in areas with high concentrations of poverty can compromise the extent to which parents' messages about the value of schooling are ingrained in their children. Classic sociological studies note that disadvantaged communities lack the resources to sustain neighborhood institutions and public services and are characterized by persistent joblessness, which contributes to making these areas breeding places for the factors, such as crime, violence, and substance abuse, that can disconnect academic self-esteem from global self-esteem (Massey and Denton 1993; Wilson 1987, 1996). These conditions inhibit the development of educational skills, depress school achievement, and discourage teachers. William Julius Wilson (1987, 57) argues that "a vicious cycle is perpetuated through family, through the community, and through the schools"—all three being aspects of youths' life space.

Race can also have implications for parents' ability to effectively set the stage for their children's academic success. Parents from historically subordinate racial groups—such as black Americans—face challenges within their environments that are beyond their control and directly affect their children's life space. Elsewhere (Robinson and Harris 2014), we have found that levels of parental involvement in children's schooling *at home* are relatively similar across racial groups (whites, Asian Americans, Hispanics, and blacks), but that parental involvement *with schools* differs by race and some of these differences may result from schools reaching out to minority parents—particularly Hispanics—less than they do to white parents. Thus, black parents must raise children to identify with a domain in which evidence suggests they are rejected. For example, Eric Hanushek, John Kain, and Steven Rivkin (2004) provide strong evidence that a higher rate of minority enrollment increases the probability that white teachers will exit a school, even more than a lower rate of wages. They find that a 10 percent increase in black enrollment would require about a 10 percent increase in salaries to neutralize the elevated probability that white teachers will leave a school. Furthermore, they find that the racial composition of schools is an important determinant of the probability that white teachers—particularly newer teachers—will leave public schools entirely or switch school districts. Catherine Freeman, Benjamin Scafidi, and David Sjoquist (2005) also find that white teachers are much more likely to leave schools that serve higher proportions of black students in favor of schools that serve lower proportions of black and low-income students and have students who score higher on achievement exams.

The reality that black parents must cultivate an academic identity in their children in con-

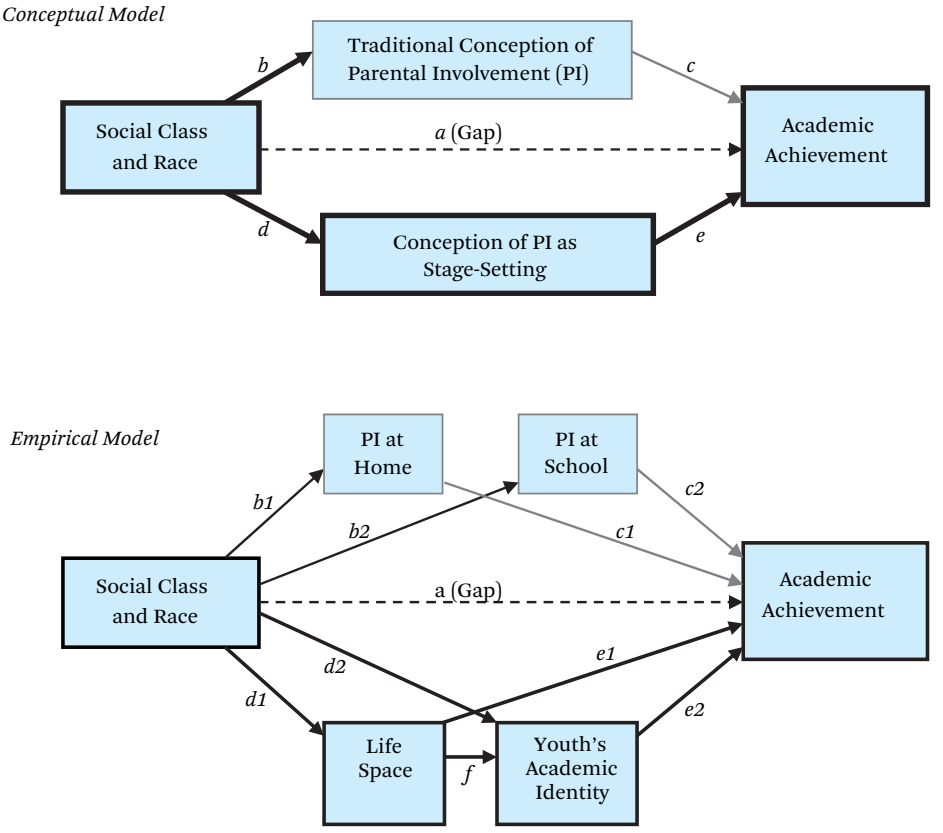
texts where some educators are attempting to avoid doing so is particularly disconcerting given that this avoidance appears to adversely affect the quality of the instruction these children receive. In a study of the implications of school racial composition for teacher quality, Kirabo Jackson (2009) finds that in schools in which the share of black student enrollment increased following the repeal of a busing program to maintain racial balance across schools within a school district, there was a decrease in the proportion of experienced teachers, teachers with high licensure exam scores, and teachers who had demonstrated an ability to improve student test scores. Jackson's study design supports the conclusion that the absence of high-quality teachers in schools with high proportions of black students is caused by the racial composition of the schools rather than by neighborhood characteristics. Further, the change in school quality immediately following the repeal of the busing program indicated that teachers exited in anticipation of the arrival of more black students. Given the negative implications of attending a predominantly black school—which is the case for many black youth in the United States—black parents have a particularly unique challenge in effectively setting the stage for their children's academic success.

The findings from Sean Reardon's study reported in this issue identify a potential explanation for why segregated schools present challenges that minority parents must overcome: higher school poverty rates. Reardon finds very clear evidence that disparity in average school poverty rates between whites and blacks is consistently the single most powerful correlate of racial disparities in achievement. This implies that high-poverty schools—which blacks are more likely to attend than whites—are less effective than lower-poverty schools. The strategy of reducing children's exposure to poor classmates, which may lead to meaningful reductions in racial disparities in academic achievement, is less viable for black and Hispanic parents.

Racial differences also exist in parents' ability to influence the school environment, even in affluent schools. In a study conducted in a well-funded school in an affluent community, Amanda Lewis and John Diamond (2015) find that white parents display a sense of entitlement to challenge their children's track placement. They push their children into honors and Advanced Placement (AP) courses—where instruction is superior, the curriculum is more challenging, and teachers are more experienced—against the advice of teachers and regardless of whether the courses are above their children's academic ability. White parents are able to do this with little to no resistance from school personnel. In fact, the process is smooth and requires minimal interaction with school officials. Furthermore, Lewis and Diamond show that school personnel often respond to the pressure to placate white middle-class parents by making decisions that go against their instincts and provide benefits to some students (mostly white and middle-class) but not others (mostly black and Hispanic).

Although stage-setting may be easier for families with more socioeconomic resources compared to families with fewer socioeconomic resources, stage-setting should not be conflated with social class. In theory, socioeconomically disadvantaged parents can effectively set the stage for their child to experience academic success, and in fact there are socioeconomically disadvantaged high achievers. However, their exceptionality suggests that disadvantaged parents are less likely to be successful stage-setters because they face greater challenges in doing so than more affluent parents. Thus, stage-setting is not a proxy for social class but a mechanism that explains the link between social class and achievement. For example, scholars have been able to observe a strong negative association between poverty and achievement because poverty can be disruptive to children's everyday lives (Duncan and Rodgers 1988). Karen Seccombe (2000) highlights several studies that show that over the course of a year a majority of the poorest families experience at least one of the following deprivations: eviction, crowded housing, disconnection of utilities, no stove, no refrigerator, or housing with upkeep problems. All these aspects of the life space impact stage-setting; they are the mechanisms that explain why lower socioeconomic circumstances are related to poor achievement.

Figure 2. Conceptual and Empirical Model for Parental Involvement as a Mechanism for Explaining the Social Class and Race–Achievement Link



Source: Authors' calculations.

We posit that stage-setting explains a greater share of the link between social class and achievement than traditional forms of parental involvement. We illustrate this link in figure 2, which shows the conceptual and empirical models we are describing. The models depict the role of parental involvement in children's achievement relative to social class and race. The conceptual model suggests that class and race differences exist in traditional forms of parental involvement (path *b*). However, we portray path *c* in gray to convey that the connection between traditional forms of parental involvement and achievement is tenuous. Instead, it is *stage-setting* that accounts for class and race differences in academic achievement; groups vary in their ability to successfully set the stage (path *d*), and stage-setting strongly determines academic achievement (path *e*).

The empirical model provides some clarity on the overall process of our perspective. Because the traditional conception of parental involvement contains two components, home and school, we decompose path *b* into paths *b1* and *b2*. Similarly, the "effects" for parental involvement are decomposed into paths *c1* (home) and *c2* (school). The empirical model depicts the variation along class and racial lines in the forms of parental involvement at home and at school and shows that these forms of involvement are only modestly related to children's achievement (represented by the gray paths). Instead, the factors associated with stage-setting, illustrated in the bottom portion of the empirical model, are the driving forces behind the impact of parents on their children's academic lives. Specifically, class and race are major factors in determining the

quality or conduciveness to learning of children's life space (path *d1*) and the extent to which children identify with academics (path *d2*), and each of these factors affects academic achievement (paths *e1* and *e2*) independent of traditional forms of parental involvement. Path *f* denotes that the quality of children's life space influences—either by reinforcing or by compromising—youths' academic identity.

Affluent parents tend to be more involved in their children's academic lives and to have high-achieving children. Many educators view the success of these children as resulting in large part from their parents' involvement. We suspect that affluent parents are being credited with superior parental involvement when in fact it is stage-setting that is driving the academic success of their children. These children are likely to attend well-funded schools with excellent teachers, characteristics of a conducive-to-learning life space more than of parental involvement. We recognize that a positive life space alone does not guarantee academic success and that school finance reform has greatly reduced funding disparities between high-performing suburban districts and low-performing urban districts (Odden and Picus 2007). What contributes to the effectiveness of these positive factors within the life space, however, is that messages about the importance of schooling have a more lasting effect on the children of affluent parents because there are fewer threats in their lives that could disconnect their academic self-esteem from their global self-esteem. To be clear, we acknowledge that affluent parents are more involved than their less advantaged counterparts. It is also true, however, that many educators find the anecdotally observed relationship between parental involvement and high achievement too appealing to ignore and thus promote parental involvement as the answer to most of the problems within K–12. We propose instead that affluent parents have created a space that sets their children up for success largely independent from their involvement.

CONCLUSION

In sum, effective stage-setting is more rooted in lifestyle than in parental involvement activities. Once the stage is set for academic success, children are on course toward being academically successful. A child with an academic profile that places her on course to attend Princeton University will not suddenly "tank" if her parents reduce their level of involvement. Although she might not remain on the Princeton trajectory after a reduction of parental involvement, she is unlikely to drop out of high school and will probably gain admission into a fine college or university. Our point is that for any child to remain on a positive trajectory—toward Princeton or elsewhere—the parents might simply need to maintain a positive space conducive to academic success, and that this space may or may not include traditional forms of parental involvement. A key advantage of stage-setting over traditional conceptions of parental involvement is that it is not a one-size-fits-all strategy. Whereas traditional conceptions advocate for parents' involvement in all the same activities, stage-setting is contextual and can involve different types of support for different children.

The Coleman Report posited that the home itself and the cultural influences immediately surrounding the home drive inequality of educational opportunity (Coleman et al. 1966). Our own previous work, however, suggests that black and Hispanic parents value education either the same as or more than their white counterparts (Harris 2011; Robinson and Harris 2014), and that achievement inequality in outcomes by race and class persist even net of forms of parental involvement within parents' control (Robinson and Harris 2014). Additionally, the configuration and resources of cities, neighborhoods, and schools play a significant role in educational inequality (Alexander, Entwisle, and Olson 2014). In fact, analysis of national data shows that inequality in academic outcomes is smallest upon school entry and widens (rather than remaining constant) as children matriculate through the early grades (Fryer and Levitt 2006). Schools also operate and respond differently for parents based on race and class, with white parents being advantaged at the expense of black and Hispanic parents and children (Lareau 2003; Lewis and Diamond 2015). Thus, not all parents have the same ability to influence their children's aca-

demic outcomes or opportunities. In our view, suggesting that inequality of educational opportunity stems primarily from the home itself and the culture does not square well with recent empirical evidence. The conception of school and family as being in competition ignores the reality that these factors both jointly and independently influence how the stage is set in the first place.

The stage-setting framework suggests that the concept of parental involvement needs to be conceptualized differently in policy and in practice. Several states and districts have recently called for increases in parental involvement both in and out of school. However, given the differences that parents experience in setting the stage, educators and school personnel should take more active roles in providing parents with effective strategies to help their children academically. Furthermore, educators should work to assist parents with setting the stage by addressing the inequality in how students experience the school setting. More specifically, addressing the issues discussed by Prudence Carter in this issue, by Lewis and Diamond (2015), and by Tyson (2011) would minimize the extent to which school personnel perpetuate racial inequality by responding to youth based on racialized and class-based assumptions and tracking racial minorities into lower academic tracks.

REFERENCES

Ainsworth, James W. 2002. "Why Does It Take a Village? The Mediation of Neighborhood Effects on Educational Achievement." *Social Forces* 81(1): 117–52.

Alexander, Karl. 2016. "Is It Family or School? Getting the Question Right." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(5). doi: 10.7758/RSF.2016.2.5.02.

Alexander, Karl, Doris Entwisle, and Linda Olson. 2014. *The Long Shadow: Family Background, Disadvantaged Urban Youth, and the Transition to Adulthood.* New York: Russell Sage Foundation.

Borman, Geoffrey D., and Jaymes Pyne. 2016. "What If Coleman Had Known About Stereotype Threat? How Social-Psychological Theory Can Help Mitigate Educational Inequality." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(5). doi: 10.7758/RSF.2016.2.5.08.

Bowles, Samuel, and Herbert Gintis. 1976. *Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life.* New York: Basic Books.

Carter, Prudence. 2016. "Educational Equality Is a Multifaceted Issue: Why We Must Understand the School's Sociocultural Context for Student Achievement." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(5). doi: 10.7758/RSF.2016.2.5.07.

Catsambis, Sophia. 2001. "Expanding Knowledge of Parental Involvement in Children's Secondary Education: Connections with High School Seniors' Academic Success." *Social Psychology of Education* 5(2): 149–77.

Coleman, James S., Ernest Q. Campbell, Carol J. Hobson, James McPartland, Alexander M. Mood, Frederick D. Weinfeld, and Robert L. York. 1966. *Equality of Educational Opportunity.* Washington: U.S. Department of Health, Education, and Welfare, Office of Education.

Comer, James P. 1992. "Educational Accountability: A Shared Responsibility Between Parents and Schools." *Stanford Law and Policy Review* 4(1): 113–22.

Crocker, Jennifer, and Brenda Major. 1989. "Social Stigma and Self-esteem: The Self-Protective Properties of Stigma." *Psychological Review* 96(4): 608–30.

Dearing, Eric, and Beck A. Taylor. 2007. "Home Improvements: Within-Family Associations Between Income and the Quality of Children's Home Environments." *Journal of Applied Developmental Psychology* 28(5–6): 427–44.

Desimone, Laura. 2001. "Linking Parent Involvement with Student Achievement: Do Race and Income Matter?" *Journal of Educational Research* 93(1): 11–30.

Domina, Thurston. 2005. "Leveling the Home Advantage: Assessing the Effectiveness of Parental Involvement in Elementary School." *Sociology of Education* 78(3): 233–49.

Duncan, Greg J., and Willard L. Rodgers. 1988. "Longitudinal Aspects of Childhood Poverty." *Journal of Marriage and the Family* 50(4): 1007–21.

Epstein, Joyce L. 1985. "Home and School Connections in Schools on the Future: Implications of Research on Parental Involvement." *Peabody Journal of Education* 62(2): 18–41.

———. 2010. "School/Family/Community Partner-

ships: Caring for the Children We Share." *Phi Delta Kappan* 92(3): 81–96.

Freeman, Catherine, Benjamin Scafidi, and David L. Sjoquist. 2005. "Racial Segregation in Georgia Public Schools, 1994–2001: Trends, Causes, and Impact on Teacher Quality." In *School Segregation: Must the South Turn Back?* edited by John Charles Boger and Gary Orfield. Chapel Hill: University of North Carolina Press.

Fryer, Roland G., and Steven D. Levitt. 2006. "The Black-White Test Score Gap Through Third Grade." *American Law and Economics Review* 8(2): 249–81.

Hango, Darcy. 2007. "Parental Investment in Childhood and Educational Qualifications: Can Greater Parental Involvement Mediate the Effects of Socioeconomic Disadvantage?" *Social Science Research* 36(4): 1371–90.

Hanushek, Eric A., John F. Kain, and Steven G. Rivkin. 2004. "Why Public Schools Lose Teachers." *Journal of Human Resources* 39(2): 326–54.

Harris, Angel L. 2011. *Kids Don't Want to Fail: Oppositional Culture and the Black-White Achievement Gap.* Cambridge, Mass.: Harvard University Press.

Hart, Betty, and Todd R. Risley. 1995. *Meaningful Differences in the Everyday Experience of Young American Children.* Baltimore: Paul H. Brooks Publishing.

Hoge, Dean R., Edna K. Smit, and John T. Crist. 1997. "Four Family Process Factors Predicting Academic Achievement in Sixth and Seventh Grade." *Educational Research Quarterly* 21(2): 27–42.

Izzo, Charles V., Roger P. Weissberg, Wesley J. Kasprow, and Michael Fendrich. 1999. "A Longitudinal Assessment of Teacher Perceptions of Parent Involvement in Children's Education and School Performance." *American Journal of Community Psychology* 27(6): 817–39.

Jackson, C. Kirabo. 2009. "Student Demographics, Teacher Sorting, and Teacher Quality: Evidence from the End of School Desegregation." *Journal of Labor Economics* 27(2): 213–56.

Jeynes, William. 2003. "A Meta-analysis: The Effects of Parental Involvement on Minority Children's Achievement." *Education and Urban Society* 35(2): 202–23.

Lareau, Annette. 2003. *Unequal Childhoods: Class, Race, and Family Life.* Berkeley: University of California Press.

Lewis, Amanda E., and John B. Diamond. 2015. *Despite the Best Intentions: How Racial Inequality Thrives in Good Schools.* New York: Oxford University Press.

Lucas, Samuel Roundfield. 1999. *Tracking Inequality: Stratification and Mobility in American High Schools.* New York: Teachers College Press.

Marsh, Herbert W. 1986. "Global Self-Esteem: Its Relation to Specific Facets of Self-Concept and Their Importance." *Journal of Personality and Social Psychology* 51(6): 1224–36.

Massey, Douglas, and Nancy Denton. 1993. *American Apartheid.* Cambridge, Mass.: Harvard University Press.

Mau, Wei-Cheng. 1997. "Parental Influences on the High School Students' Academic Achievement: A Comparison of Asian Immigrants, Asian Americans, and White Americans." *Psychology in the Schools* 34(3): 267–77.

McNeal, Ralph B., Jr. 1999. "Parental Involvement as Social Capital: Differential Effectiveness on Science Achievement, Truancy, and Dropping Out." *Social Forces* 78(1): 117–44.

Morgan, Stephen L., and Jai Mehta. 2004. "Beyond the Laboratory: Evaluating the Survey Evidence for the Disidentification Explanation of Black-White Differences in Achievement." *Sociology of Education* 77(1): 82–101.

Muller, Chandra. 1995. "Maternal Employment, Parental Involvement, and Mathematics Achievement Among Adolescents." *Journal of Marriage and the Family* 57(1): 85–100.

———. 1998. "Gender Differences in Parental Involvement and Adolescents' Mathematics Achievement." *Sociology of Education* 71(4): 336–56.

Odden, Allen R., and Lawrence O. Picus. 2007. *School Finance: A Policy Perspective.* New York: McGraw-Hill.

Osborne, Jason W. 1997. "Race and Academic Disidentification." *Journal of Educational Psychology* 89(4): 728–35.

Pomerantz, Eva, Elizabeth Moorman, and Scott D. Litwack. 2007. "The How, Whom, and Why of Parents' Involvement in Children's Academic Lives: More Is Not Always Better." *Review of Educational Research* 77(3): 373–410.

Reardon, Sean. 2016. "School Segregation and Racial Academic Achievement Gaps." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(5). doi: 10.7758/RSF.2016.2.5.03.

Robinson, Keith, and Angel L. Harris. 2014. *The Broken Compass: Parental Involvement with Chil-*

dren's Education. Cambridge, Mass.: Harvard University Press.

Rosenberg, Morris. 1979. *Conceiving the Self.* New York: Basic Books.

Rosenberg, Morris, Carmi Schooler, Carrie Shoenbach, and Florence Rosenberg. 1995. "Global Self-Esteem and Specific Self-Esteem: Different Concepts, Different Outcomes." *American Sociological Review* 60(1): 141–56.

Schulting, Amy B., Patrick S. Malone, and Kenneth A. Dodge. 2005. "The Effect of School-Based Kindergarten Transition Policies and Practices on Child Academic Outcomes." *Developmental Psychology* 41(6): 860–71.

Seccombe, Karen. 2000. "Families in Poverty in the 1990s: Trends, Causes, Consequences, and Lessons Learned." *Journal of Marriage and the Family* 62(4): 1094–113.

Steele, Claude M. 1997. "A Threat in the Air: How Stereotypes Shape Intellectual Identity and Performance." *American Psychologist* 52(6): 613–29.

Stein, Melanie R., and Ron J. Thorkildsen. 1999. *Parental Involvement in Education: Insights and Applications from the Research.* Research Practitioner Series. Bloomington, Ind.: Phi Delta Kappa International.

Sui-Chu, Esther Ho, and J. Douglas Willms. 1996. "Effects of Parental Involvement on Eighth-Grade Achievement." *Sociology of Education* 69(2): 126–41.

Tyson, Karolyn. 2011. *Integration Interrupted: Tracking, Black Students, and Acting White After Brown.* New York: Oxford University Press.

Wilson, William Julius. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy.* Chicago: University of Chicago Press.

———. 1996. *When Work Disappears: The World of the New Urban Poor.* New York: Knopf.

Zellman, Gail L., and Jill M. Waterman. 1998. "Understanding the Impact of Parent School Involvement on Children's Educational Outcomes." *Journal of Educational Research* 91(6): 370–80.

Psychology of Sport & Exercise xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Psychology of Sport & Exercise

journal homepage: www.elsevier.com/locate/psychsport

Advancing the study of parental involvement to optimise the psychosocial development and experiences of young athletes

Chris G. Harwood[a,*], Camilla J. Knight[b], Sam N. Thrower[c], Steffan R. Berrow[b]

[a] School of Sport, Exercise and Health Sciences, Loughborough University, United Kingdom
[b] School of Sport and Exercise Sciences, Swansea University, United Kingdom
[c] Department of Life Sciences, University of Roehampton, United Kingdom

ARTICLE INFO

Keywords:
Parenting
Youth sport
Psychosocial development
Positive youth development

ABSTRACT

The purpose of this article is to review and critique the literature in youth sport that specifically relates to parental influence on the experiences and psychosocial development of young athletes. First, we consider the literature examining the extent to which parental involvement in organised youth sport has been associated with psychosocial outcomes in young people. Within this critique, we draw upon what has been learned from the sport-based positive youth development (PYD) and life skills literature. Second, we address conceptual and methodological limitations of existing literature (e.g., homogeneity of samples, oversimplification of parenting in sport, studying parental involvement in isolation) and target key scientific gaps that exist in facilitating our understanding of optimal parental involvement (e.g., raising parental awareness and facilitating opportunities to support psychosocial development, improving coach education to facilitate parent-coach relationships, collaborating with coaches through well designed interventions, working on the "right" assets at the right time). Such gaps represent how parents appear to have been overlooked within the intentional process of psychosocial development. We offer concluding remarks about the future of youth sport in this area and provide specific recommendations to inspire future researchers and practitioners towards the challenge of empowering parents and more fully enabling their potential.

1. Introduction

In a special issue of *Psychology of Sport and Exercise* in 2015, we (Harwood & Knight) proposed that expertise in sport parenting was "demonstrated through parental involvement that increases the chances for children to achieve their sporting potential, have a positive psychosocial experience, and develop a range of positive developmental outcomes" (p. 25). This statement was based upon the belief that success for children and adolescents involved in youth sport cannot, and should not, be measured by athletic performance alone. Rather, we believe that a 'successful' sport environment is one that facilitates a child's on-going involvement in sport and physical activity, supports psychological wellbeing, and provides young people with opportunities to develop transferable life skills.

Such aspirations for youth sport have also been reflected by international sport organisations. For instance, in their position statement on youth athlete development, the International Olympic Committee (IOC) expert panel referred to the importance of a *commitment* to the psychological development of *resilient* and *adaptable* athletes (Bergeron et al., 2015). Specifically, the authors articulated a clear, but multifaceted goal for sport: "Develop healthy, capable and resilient young athletes, while attaining widespread, inclusive, sustainable and enjoyable participation and success for all levels of individual athletic achievement" (p. 834). The specific proposition being that sport experiences should equip young people with appropriate coping skills and psychosocial qualities regardless of sporting level/attainments. The panel admonished that "this is a considerable challenge for all stakeholders in youth sports—parents, coaches, administrators, sport governing bodies *and*, especially, youth athletes" (p. 834).

Recognising the challenge and complexity of parental involvement that could help to nurture such positive psychosocial outcomes, we previously posited that parents must engage in a "consistent cycle of triangular responsibilities that revolve around managing and supporting the needs of their child, managing themselves and their own well-being, and managing their interactions with others in the youth sport environment" (Harwood & Knight, 2015, p. 32). This interpretation was driven by an examination of studies in organised youth sport. However, on reflection, we realise that we failed to critically appraise

* Corresponding author. School of Sport, Exercise & Health Sciences, Loughborough University, Loughborough, LE11 3TU, United Kingdom.
E-mail address: c.g.harwood@lboro.ac.uk (C.G. Harwood).

https://doi.org/10.1016/j.psychsport.2019.01.007
Received 30 August 2018; Received in revised form 9 January 2019; Accepted 11 January 2019
1469-0292/ © 2019 Published by Elsevier Ltd.

the literature in terms of the balance between studies examining parental influence upon 'in situ' experiential consequences (e.g., motivation, affective responses, and sporting behaviour in youth sport situations) and *psychosocial development* (i.e., the growth of social, cognitive, emotional and behavioural skills/qualities through sport; Holt, 2016; Pierce, Gould, & Camiré, 2017). Although these 'consequences' are likely linked, the latter aspiration, psychosocial development, requires a more proactive and targeted approach from parents. Such aspirations are reflective of the mission of sport-based positive youth development (PYD) and life skills programs, where there exists a clear intentionality to use sporting activities to help young people harness a wide range of internal and external assets (e.g., Bean, Kramers, Forneris & Camiré, 2018; Camiré, Trudel, & Forneris, 2012; Holt et al., 2017; Jacobs & Wright, 2018).

Given that every young person has a right to high quality, developmentally-rich experiences *in* and *through* sport, we believe there is a responsibility on scholars not only to understand and illustrate how parents can impact the 'in situ' sporting experience of a young person (i.e., positive psychological states) but also how parents can nurture more enduring psychosocial attributes as internal resources for adult life. With these points in mind, the aims of this present article are threefold. First, we will critically reflect upon literature examining the impact of parental involvement in organised youth sport on young peoples' psychosocial outcomes; we consider the impact on motivational, affective, social, behavioural, and developmental indices as well as what has been learned from sport-based PYD and life skills literature. Second, we aim to identify the conceptual and methodological limitations of existing literature, with a particular emphasis on addressing scientific gaps that exist in facilitating our understanding of optimal parental involvement. Third, we aim to inspire future researchers and practitioners in this area by considering challenges and opportunities that exist by empowering parents and their potential capabilities more fully.

2. Parental involvement in organised youth sport settings

Researchers have committed extensively to understanding how parents may positively or negatively affect the quality of young people's experiences in sport (Knight, Berrow, & Harwood, 2017). When evaluating this body of work, a diversity of what we will term 'psychosocial outcomes' emerges due to different types of parental practices and involvement. Such outcomes range from motivational regulations, affective responses, self-perceptions, moral behaviour, coping strategies, and well-being consequences that have been reported or displayed by young athletes through both quantitative and qualitative investigations (Berrow, Knight, & Hudson, 2018; Knight & Holt, 2014). Several elements of parental involvement have been found to influence these psychosocial outcomes including; parenting style; parenting practices across contexts (e.g., used at home, in relation to training, and those displayed at competitions); and parental relationships and interactions with others in the sporting environment. A brief overview of these three areas is provided below (a full review is beyond the scope of this paper, Berrow et al. (2018) provide further details).

2.1. Parenting style

A growing number of studies (e.g., Holt, Tamminen, Black, Mandigo, & Fox, 2009; Juntumma, Keskivaara, & Punamäki, 2005; Sapieja, Dunn, & Holt, 2011) point to the influence of general parenting styles (defined as "a constellation of attitudes toward the child that are communicated to the child and that, taken together, create an emotional climate in which the parent's behaviours are expressed" (Darling & Steinberg, 1993, p. 488) on certain psychosocial outcomes in children. Specifically, research indicates that autonomy-supportive or authoritative parenting positively impacts on children, by reducing amotivation and increasing more self-determined forms of motivation (e.g., Chew & Wang, 2010; Gagné, Ryan, & Bargmann, 2010). Further, an authoritative parenting style is associated with enhanced sport satisfaction (Juntumma et al., 2005) and higher rates of healthy and non-perfectionism (Sapieja et al., 2011), while an autonomy supportive approach is associated with enhanced well-being (Gagné et al., 2010). In contrast, controlling or authoritarian parenting styles have been associated with reduced self-esteem and vitality (Gagné et al., 2010) as well as increased likelihood for young athletes to engage in norm-breaking behaviours (Juntumma et al., 2005).

2.2. Parenting practices across contexts

Researchers in youth sport have made a frequent distinction between parental behaviours or practices that are perceived to be supportive and those that are viewed as pressuring. Generally, positive psychosocial outcomes are associated with supportive behaviours displayed at home, in training and at competitions, while negative or detrimental psychosocial outcomes are associated with pressure, particularly in relation to competitions (Knight et al., 2017). For instance, the provision of tangible support, particularly in the form of money and time, from parents is especially important (e.g., Baxter-Jones & Maffulli, 2003; Wuerth, Lee, & Alfermann, 2004). Such tangible support is identified by athletes as a necessary requirement to ensure children's participation and progression in sport (Knight, Boden, & Holt, 2010; Wolfenden & Holt, 2005) and thus is the basis to subsequent psychosocial development. The provision of tangible support from parents demonstrates to children that they value their sporting involvement (Boiche, Guillet, Bois, & Sazzarin, 2011), which can enhance feelings of enjoyment (Fraser-Thomas, Côté, & Deakin, 2008), competence (Hassell, Sabiston, & Bloom, 2010), motivation (Knight, Little, Harwood, & Goodger, 2016) and persistence (Dunn, Dorsch, King, & Rothlisberger, 2016). However, athletes can become aware of their parents' commitment and subsequently perceive pressure to "repay" their parents (Lauer, Gould, Roman, & Pierce, 2010).

Recent research has shown a direct relationship between the amount of money parents commit to their child's sport and subsequent perceptions of pressure reported by child-athletes (Dunn et al., 2016). When children perceive pressure from parents, it can impact on continued engagement in sport (Fraser-Thomas, Côté, & Deakin, 2009), their sport enjoyment (Amado, Sanchez-Olivia, Gonzalez-Ponce, Pulido-Gonzalez, & Sanchez-Miguel, 2015; Babkes & Weiss, 1999), anxiety levels (Power & Woolger, 1994; Scanlan & Lewthwaite, 1986), and engagement in unsporting behaviours (Leo, Sanchez-Miguel, Sanchez-Olivia, Amado, & García-Calvo, 2015). Further, at competitions, if parents are focused on winning, punish children, or provide critical feedback it can reduce children's perceptions of competence (Babkes & Weiss, 1999; Knight, Dorsch, Osai, Haderlie, & Sellars, 2016), and increase both anxiety (Bean, Jeffery-Tosoni, Baker, & Fraser-Thomas, 2016; Elliott & Drummond, 2017) and fear of failure (Sagar & Lavallee, 2010). It is also noteworthy that high parental expectations and concerns about parental criticism is associated with unhealthy or negative forms of perfectionism (Ommundsen, Roberts, Lemyre, & Miller, 2006; Sagar & Stoeber, 2009).

In contrast, when children perceive their parents focus on effort, self-referenced achievement, and personal improvement at competitions and in relation to training (creating a parental task-involving/mastery climate) athletes report higher levels and quality of motivation (Knight et al., 2016; McArdle & Duda, 2004), commitment (D'Arripe-Longueville, Hars, Debois, & Calmels, 2009), perceived competence (Atkins, Johnson, Force, & Petrie, 2013), enjoyment (Morris & Kavussanu, 2008), effort (Gutiérrez, Caus, & Ruiz, 2005), self-esteem (O'Rourke, Smith, Smoll, & Cumming, 2014), and sporting behaviour (Davies, Babkes-Stellino, Nichols, & Coleman, 2016). Further, praise and encouragement with constructive feedback after competitions can facilitate motivation (Keegan, Spray, Harwood, & Lavallee, 2010; Knight et al., 2016) and increase confidence and positive affect (Elliott

& Drummond, 2017). Positive reinforcement can increase perceptions of competence and effort (Babkes & Weiss, 1999) and help athletes rationalise their thoughts and feelings (Connaughton, Wadey, Hanton, & Jones, 2008).

However, the impact of parental feedback on psychosocial outcomes, particularly the feedback provided at competitions, appears to be influenced by children's individual preferences and their perceptions of their parents' knowledge (Knight et al., 2010; Knight et al., 2016). In general, children have reported that when parents have appropriate knowledge about their sport (either as a result of playing or coaching experience) or possess pertinent life or sport experiences, the provision of sport-specific information in relation to competitions (i.e., tactical or technical feedback) is positively received and enhances enjoyment, concentration, and confidence. In contrast, unsolicited sport-specific feedback before or after competitions from parents deemed to be lacking in the necessary knowledge or experience is described to lead to feelings of confusion, frustration, or pressure (Knight et al., 2010; Knight et al., 2016).

2.3. Parental relationships and interactions with others

Parents engage with many other individuals within the youth sport environment (i.e., other parents, coaches, and officials; Harwood & Knight, 2015). Although surprisingly limited in scope, available research indicates that the quality of parental interactions with other individuals impacts on children's sport experience (cf. Holt et al., 2009; Omli & Wiese-Bjornstal, 2011). For instance, when parents engage with other parents (either of children on the same team, or opposing team) in a respectful and supportive manner, children report that it enhances their enjoyment of sport (Dorsch, Smith, & McDonough, 2009). Similarly, children have explained that encouraging and congratulating other children on their team and their opponents can also enhance their enjoyment, increase motivation, and reduce embarrassment (Knight et al., 2010). In contrast, if parents engage in angry exchanges with other parents it can lead to children feeling embarrassed or anxious (Knight et al., 2010; Omli & LaVoi, 2011).

The way in which parents interact with their child's coach is also reported to affect children's sport experience (Fraser-Thomas et al., 2009; Jowett & Timson-Katchis, 2005). For instance, athletes and coaches have explained that if parents question coaches or interfere with practices it can result in feelings of pressure or anxiety for children (Gould, Lauer, Rolo, Jannes, & Pennisi, 2008; Lauer et al., 2010). In contrast, open and honest relationships between parents and coaches can increase a child's trust in their coach, help parents to learn about their child's sport and be more optimally involved, and enable parents to help children to solve athlete-coach conflicts (Jowett & Timson-Katchis, 2005; Knight & Holt, 2014). Further, parents and coaches can both actively influence the development of athlete's coping strategies (Tamminen & Holt, 2012; Tamminen, McEwen, & Crocker, 2016) by questioning and reminding athletes of previous coping attempts, sharing their own experiences, and initiating conversations about coping. If coaches and parents work together to implement these strategies, it is likely that athletes' development of coping strategies will be enhanced.

2.4. Methodological caveats and limitations of the literature

The body of evidence reviewed above offers extensive insights into the types of parental involvement that have been positively and negatively associated with a range of psychosocial outcomes in child-athletes. However, there are several methodological points that are important to share at this juncture. First, we would caution the reader against simply concluding what is 'good or bad' sport parenting particularly given the lack of research on certain areas. For instance, when considering the "best" parenting style to use within youth sport there is tremendous homogeneity in the populations being studied (Berrow et al., 2018; Harwood & Knight, 2015) and this limits our understanding of cultural and developmental influences. Moreover, family structure is seldom reported within existing literature which restricts our appreciation of the roles or influence of parental involvement outside that of traditional heterosexual parenting.

Second, we are at great risk of oversimplifying parenting and parental involvement in sport (cf. Knight et al., 2017) because behaviours within studies are often broadly categorised as supportive or pressuring. The meaning of these terms is often vague and can be applied to a range of individual practices from autonomy-support, support of basic psychological needs, tangible, informational, and emotional support, and positive-reinforcement (Berrow et al., 2018). Furthermore, distinct concepts are occasionally conflated and labelled 'support', such as the facilitation of sport participation and autonomy-support (Anderson, Funk, Elliott, & Smith, 2003). Consequently, when we talk about pressure or support, we might actually be making reference to a range of different practices that may make their own unique contribution to children's sport experiences and developmental outcomes.

The exact impact of different parental practices on children is further complicated because how children perceive their parents' behaviours appears to be influenced by the timing of the behaviour (e.g., comments before competitions may have a different impact to those after events; Elliott & Drummond, 2015; Knight et al., 2010), the presence of others within the environment (e.g., the coach-created motivational climate might mediate the impact that a parent-initiated climate has on a child; Amorose, Anderson-Butcher, Newman, Fraina, & Iachini, 2016), and also specific parent and child characteristics such as parent beliefs or goals regarding sport involvement or the quality of the relationship between a parent and child (Knight et al., 2017). Thus, when we consider parental involvement in isolation or devoid of contextual information, we risk creating an incomplete and potentially misleading picture of how parents influence young people.

Finally, perhaps the most predominant reflection of studies that have employed parent and athlete samples from traditional, organised youth sport settings, is that few have investigated the potential role of parents on the child's perceived or actual development of specific social, cognitive, emotional, and behavioural skills. The body of literature is characterised by quantitative cross-sectional associations between (perceived) parental behaviours (generally situation-specific and negative) and consequences reported by athletes and qualitative (often one-off) interviews with athletes reflecting upon parental involvement usually at competitions. Beyond Tamminen's work on the development of adolescent coping skills (Tamminen & Holt, 2012), there appear to be few empirical investigations in these traditional youth sport samples that have examined the parental involvement with a specific focus upon how parents may facilitate the development or growth (perceived or objective) of enduring psychosocial assets that are so important for development (Lerner, Fisher, & Weinberg, 2000; Petitpas, Cornelius, Van Raalte, & Jones, 2005).

One potential reason for this is that although the general mission of traditional, organised youth sport programs should be focused on a high quality, enriching experience, the actual focus of youth sport imbalances maladaptively towards athlete skill development and competition outcomes. Forneris, Camiré and Trudel (2012) provide some empirical support for this proposition in their study of high school coaches, parents, athletes, and administrators' perceptions of the youth sport mission, experiences, and expectations. Their findings indicated lapses in awareness of the broader mission of youth sport alongside discrepancies in what stakeholders expected in terms of the integration of life skills and positive sport values compared to perceptions of the degree to which these skills and values were actually being integrated within their programme. As an alternative to youth sport programs that primarily focus on sport skill development, sport-based PYD programs view young people as resources to be developed and intentionally focus on developmentally-rich experiences through their involvement in organised activities (Holt & Neely, 2011; Petitpas et al., 2005).

Importantly, parents and family are viewed as key external assets within PYD research (National Research Council and Institute of Medicine, 2002) and so it is pertinent to appraise what we know about parental involvement in the context of the sport-based PYD literature.

3. Parental involvement within sport-based PYD research

A sport-based PYD approach can be applied to all forms of youth sport program whether or not the primary focus is on intervention or prevention to reduce negative adolescent behaviours, life skills development and transfer, or athletic potential and sport skill acquisition (Petitpas et al., 2005). However, in noting the importance of the context within which the activity occurs, the National Research Council and Institute of Medicine (NRCIM, 2002) proposed eight necessary contextual features for optimising development outcomes. These include a physically and psychologically safe environment that has appropriate structure and supportive relationships, integrating school, family, and the community where possible. There also needs to be opportunities to belong and feel valued in order to develop confidence in addition to the presence of positive social norms. Opportunities to build and develop new skills (e.g., both physical and internal, psychosocial assets) must also be present (Fraser-Thomas, Côté, & Deakin, 2005). Aligned with the NRCIM, Petitpas et al. (2005) specifically note: “Parents and guardians who become involved in their children’s activities and demonstrate a clear interest on a day-by-day basis without being intrusive, are in the best position to reinforce appropriate behaviours and attitudes” (p. 70). Côté, Turnnidge, and Evans’ (2014) Personal Assets Framework (PAF) for sport-based youth development also pays attention to the role that parents play in providing appropriate opportunities for young athletes to develop quality relationships that ultimately lead to better psychosocial development (i.e., the 4Cs – confidence, connection, character, and competence).

Most recently, Holt et al. (2017) used a meta-synthesis design to systematically synthesise key findings from the qualitative PYD literature, resulting in a grounded theory of PYD through sport. Consistent with earlier frameworks, their theory emphasises the salient role of parents and proposes that (1) distal ecological systems (e.g., community, policy, culture): and individual factors influence PYD through sport; (2) A PYD climate (based on relationships between athletes and peers, parents, and other adults) can produce PYD outcomes (i.e., through implicit processes); (3) PYD outcomes can be attained if a life skills program focus (involving life skill building activities and transfer activities) is in place (i.e., through explicit processes) and in the presence of a PYD climate; (4) The combined effects of a PYD climate and a life skills focus will produce more PYD outcomes than a PYD climate alone, and; (5) Gaining PYD outcomes in and through sport will facilitate transfer and enable youth to thrive and contribute to their communities. The theory offers an important extension and contribution to the literature, with its attempt to make a clear distinction between the influence of implicit processes (i.e., intentional yet natural activities and interactions that foster development) and the value of explicit life skill programs in supplementing parent (coach and peer) initiated PYD climates (see Bean, Kramers, Forneris, & Camiré, 2018; Gould & Carson, 2008; Jacobs & Wright, 2018; Turnnidge, Côté, & Hancock, 2014 for reviews).

Although each of these latter models implicate parents (alongside coaches and peers) in creating an appropriate social environment for promoting and reinforcing psychosocial development, parents have actually received limited scientific attention in the sport-based PYD literature. Specifically, in Holt and colleagues’ (2017) meta-synthesis only 9 (14%) of the 63 studies collected data from parents and very few of these studies placed the parent as an active participant in their investigation (i.e., collected data on the parent’s role-related behaviours and activities per se). The majority of studies explored parents’ perceptions of the benefits of sport and the role it can play in their child’s development (e.g., Camiré, Trudel, & Forneris, 2009; Holt, Kingsley, Tink, & Scherer, 2011; Light, 2010; Neely & Holt, 2014; Wiersma & Fifer, 2008) or their perceptions (alongside coaches and peers) of sport-based PYD program quality (Hardcastle, Tye, Glassey, & Hagger, 2015; Hodge, Kanters, Forneris, Bocarro, & Sayre-McCord, 2017; Riley & Anderson-Butcher, 2012).

Within many sport-based PYD intervention studies (including both implicit and explicit development programs), the role of parents within the processes of psychosocial development have been posited even when parents have not been part of the intervention (see Camiré, Trudel, & Bernard, 2013; Hodge et al., 2017; Strachan, Côté, & Deakin, 2011; Turnnidge, Vierimaa, & Côté, 2012). These studies position parents as potential mechanisms for delivery and reinforcement in explicit PYD programs particularly with regards to supporting key messages and facilitating life skill transfer. For example, in one of the more targeted studies of the role of the family in a sport-based life skills program, Hodge et al. (2017) found that parents used specific events (e.g., car rides and dinnertime) as opportunities to recognise and reinforce what children had learned and to ask how such insights could be applied outside of the sporting context. Similarly, Neely and Holt (2014) highlighted how parents seized upon ‘teachable moments’ around lessons learned through sport when documenting the strategies they used to help facilitate PYD.

In conclusion, as Dorsch and Vierimaa (2017) surmised, although PYD researchers have procured substantive knowledge on the pedagogical strategies and activities enacted by model youth sport coaches to teach life skills (e.g., Camiré et al., 2012; Gould, Collins, Lauer, & Chung, 2007), much less is known about how sport parents can facilitate psychosocial development as part of the youth sport experience. This is largely due to (semi) structured parental involvement and intentional sport parenting strategies (and importantly their impact) remaining absent from empirical interventions.

4. Addressing gaps in youth sport parenting research and practice

From the outset of this article we have focused intentionally on young people’s right to high quality developmental experiences in and through sport, a right that we believe most, if not all, parents would endorse for their child’s sporting experience. Such experiences are those that comprise positive ‘in situ’ psychological states and social behaviour linked to the sport activity (e.g., recreational play, practice, competition), and those that help to develop more enduring psychosocial attributes as critical resources for adult life (Lerner et al., 2000). Our review of studies in more traditional, organised youth sport suggests parents can influence children’s experiences through associations with motivational, cognitive, social, and affective responses. However, the literature falls short of illustrating how parents can proactively and intentionally contribute to their child’s psychosocial development. Sport-based PYD researchers have targeted psychosocial development in a range of settings and populations (e.g., after-school, high school programs) through implicit and explicit intervention processes (Bean et al., 2018; Jacobs & Wright, 2018; Turnnidge et al., 2014), yet parents remain ‘peripheral’ in these studies. Moreover, there is an absence of research which has explicitly examined the impact that parents may have on the effectiveness of psychosocial or life skill development interventions with young athletes.

The current evidence base presents opportunities in respect of research questions that remain to be asked, and in more innovative applied research designs incorporating parents. One justifiable question to consider is the degree to which coaches, organisations and governing bodies should intentionally involve parents from the outset to facilitate a youth sport environment and experience that prioritizes children’s psychosocial development (both in and through sport). We know from research and personal experience as practitioners that parents are often not afforded this opportunity, potentially limiting the benefits their child (and they) may gain from sport participation. Where an organisation’s program focuses on sport skill or talent development, coaches

ARTICLE IN PRESS

may be less inviting of parental involvement (Gould et al., 2008). Presently, as applied researchers we are frustrated by the under-utilisation of parents as a valuable resource to support coaches and other stakeholders for the betterment of child-athletes. Interestingly, beyond Harwood and Swain (2002), we could not locate a single, empirical intervention study where parents and coach(es) have intentionally worked *in tandem* to influence or improve general or specific child-athlete psychosocial factors. In addition, few studies exploring the processes and impact of parent-coach-athlete relationships on athlete factors exist (Jowett & Timson-Katchis, 2005; Smoll, Cumming, & Smith, 2011), but none of these are intervention studies comprised of empirical data from the athletes. From the position, therefore, of advancing more proactive parental involvement to facilitate the development of their child, a number of research avenues and designs emerge as clear opportunities.

4.1. Raising parental awareness and facilitating opportunities to support psychosocial development

If one takes a humanistic perspective towards parents as valued resources who are well-intentioned and capable of both learning from coaches and offering insights into optimising their child's experience, then it is important for researchers to raise parents' awareness of *how* they can explicitly support their child's psychosocial development and facilitate opportunities for parents to engage in this manner. This may include intentionally educating or sensitising parents to the psychosocial qualities and life skills that may be derived through sport (cf. Neely & Holt, 2014), and gaining their perspective on how they can promote and support the development of each attribute. By encouraging sport support staff to work with parents more proactively to raise their awareness and facilitate opportunities for engagement, we will also better understand any challenges they foresee in the implementation of proposed strategies. Qualitative or mixed-methods research may afford scholars a clearer insight into the prospect and feasibility of parents contributing to the development of their child's psychosocial assets in sport and across different settings (see Johnston, Harwood, & Minniti, 2013).

4.2. Improving coach education to facilitate parent-coach relationships

We believe that making parental involvement more focused and targeted towards facilitating psychosocial development is largely dependent upon the philosophy of the coach or organisation. In many respects, coaches are the 'gatekeepers' to a child-athlete development program and our experience is that parents are often kept 'at arms length' by coaches and National Governing Bodies. The limited study of the processes of parents and coaches working together for the child-athlete is indicative evidence of this. The continual referral to 'pushy', 'overinvolved' and 'demanding' parents reflects a well-ingrained discourse that still appears to irrationally dominate pockets of the youth sport sector (Knight & Newport, 2017). Mindful of the implications of such negative views, researchers could seek to better understand the landscape of coach education and development in relation to a coach's understanding of the needs and skills of parents, as well as the psychology of parent-coach relationships.

In reviewing the strategies employed by high school coaches to facilitate PYD through sport, Camiré et al. (2012) noted that coaches developed a well-considered coaching philosophy and presented it to parents and athletes to ensure everyone knew the approach that the coach was going to take that year. Intentional planning of developmental strategies into coaching activities and opportunities to practice life skills in sport were also deliberate features. These coaches appeared educated to purposefully offer the athlete opportunities to facilitate their athletic/talent development in tandem with their psychosocial development (see Harwood & Johnston, 2016). Integrating parents within this process would therefore appear pertinent and it is perhaps timely for researchers to appraise how coach development, education, and qualification systems prepare coaches (see Bean & Forneris, 2016) to collaborate with parents to enhance performance and psychosocial development. Only by addressing how applied researchers may influence coaches and coach development systems to inherently value and enact a psychosocial approach (Bean & Forneris, 2016; Lacroix, Camiré, & Trudel, 2008; McAllister, Blinde & Weiss, 2000) will we 'open the door' for parents to be fully integrated into programs and recognised as valuable collaborators (Strachan et al., 2011).

4.3. Collaborating with coaches through well designed interventions

Research indicates that the interactions parents have with others in youth sport contexts impacts the child's experience (Gould, Pierce, Wright, Lauer, & Nalepa, 2016; Knight & Holt, 2013; Omli & Wiese-Bjornstal, 2011). However, little attention has been given to actually understanding what underpins successful or effective coach-parent or parent-parent relationships. As applied researchers, two of the most common questions we are asked is how can coaches' work better with parents? And how can parents develop better relationships with coaches? Yet there is a dearth of empirical research that has explicitly examined relationship development and the subsequent impact that improving these relationships might have on children's psychosocial outcomes (Knight & Gould, 2016). Longitudinal, intervention designs serve as promising mechanisms to answer such questions. For example, grounded in an elite youth soccer academy, Harwood (2008) reported on the support roles of parents to coaches and players in conjunction with a psychosocial coaching efficacy intervention. The primary focus here was placed on educating and empowering coaches to more explicitly integrate the psychosocial concepts of commitment, communication, concentration, control, and confidence into soccer practice. Parents were sensitised to the 5Cs in group workshops and supported the coaches in helping their sons to complete training and match reflection journals focused on demonstrations of the 5Cs in soccer. Findings over the three-month intervention supported improvements in coaching efficacy to integrate the 5Cs as well as perceived developments in the squad. In qualitative follow-up interviews, parents noted the value and perceived impacts of the work, but no data on parent practices or behaviour was gathered.

The future direction here lies in attention to more sophisticated and novel designs. Applied researchers and practitioners should look to incorporate parents more fully in the psychosocial education and delivery process and seek to observe and examine the combined effects of parent education, working in parallel with the coach/coach education, on indices of psychosocial development in the athlete. Opportunities for parent-coach collaborations exist for team and individual sports, and it would be interesting to generate knowledge on different sport types and cultures in terms of successful pedagogical strategies and challenges encountered.

4.4. Working on the "right" assets at the right time

A final, more advanced consideration for applied researchers working in this field of youth sport is to achieve a more detailed understanding of when and how parental involvement may most impact on an athlete's developmental assets. It is recognised that there are certain developmental stages where parental influence upon the child is more salient (e.g., Wylleman & Lavallee, 2004). However, our scientific appreciation of questions such as: 'Do mothers versus fathers have greater impact on helping adolescent daughter-athletes to master their emotions?'; 'At what age should parents encourage greater ownership, organisational, and decision-making skills?', or 'Which life skills introduced to adolescent athletes are particularly easy for parents to reinforce, and which are most difficult?' is empirically limited. It may be that parental influences through facilitating child input, role modelling, feedback, support, and 'teachable moments' are less impactful and

salient than the parallel roles of coaches or peers at different ages. However, we need data to arrive at any evidence-based conclusions.

5. The next 50 years: challenging systems and improving policies

Acknowledging the 50 years of FEPSAC as the leading body in European Sport and Exercise Psychology, it is fitting to provide some concluding remarks that reflect a vision of what progressive research should be striving to achieve for incoming generations. Improving the study of parental involvement and, by definition, the experience and development of young athletes means urging scholars towards research initiatives that will raise the profile of parents within the fulfilment of youth sport developmental goals. This can involve efforts to inform the policies and practice of youth sport federations or governing bodies to more skilfully empower parents, recognising that organisations often require or request guidance regarding how to best integrate research into practice (Holt et al., 2018). To achieve this, researchers must look beyond knowledge acquisition and consider knowledge translation and dissemination when designing research studies to narrow the research-to-practice gap and ensure findings make more of a contribution to practice in youth sport settings (see Gould, 2016).

Our four priority areas of research conceptually challenge the functioning of systems in which parents and athletes are stakeholders. Drawing from Bronfenbrenner's (2005) bioecological theory, it is clear that much of our research on sport parents has existed within the ecological *microsystem* – the ecological niche or context that is closest to directly influencing the child. However, microsystems comprising coaching or parental attitudes and behaviour are influenced by a series of more distal outer systems or contexts (see Holt, Tamminen, Black, Sehn, & Wall, 2008) including *mesosystems* and *exosystems* (e.g., restrictions on parental involvement due to work pressures/culture; how a coach is evaluated in his/her job environment by an employer; how parents are perceived by coaches and administrators within different clubs and sports organisations; the coach education and qualification framework of a national governing body; traditions regarding parental involvement). Notably, the wider social, cultural, and political context within which these inner environments operate is known as a *macrosystem* and this system sets the aims, operating standards, and measures of effectiveness. Consequently, perhaps the most effective manner through which we might see changes in our practices relating to sport parents is if a change occurs within the macrosystem. For example, if governments and their funded national sport federations adopted a stronger political stance on the duty of care, psychosocial development, and well-being of young athletes (e.g., as requested by DCMS, 2016), the criteria against which sport programs and coaches are judged would start to change. Ideally this would translate into improved coach education, more holistic philosophies, and a clearer parental engagement and empowerment strategy in clubs and youth sport settings to ensure that all individuals within an athletes' microsystem could successfully, effectively, and appropriately contribute to athletes' psychosocial development and wellbeing. Such a chain of conditions and consequences aligns with Holt et al. (2017) model – beginning with the most distal ecological system.

With the ideal of macrosystem change in mind, we believe that researchers can employ stronger designs in consideration of Bronfenbrenner's model that offer better data on what improvements in child development are possible through youth sport with more proactive parental engagement. Recent studies have illustrated the value of delivering intentional group-based or online sport parent interventions (i.e., Dorsch, King, Dunn, Osai, & Tulane, 2017; Thrower, Harwood, & Spray, 2018) through improvements in parental confidence, task-orientated parent-child communication, support, and warmth. However, although such initial findings are important in the context of relational factors that underpin a PYD climate (Holt et al., 2017), interventions with parents targeting specific 'in situ' (e.g., enjoyment, reduced anxiety, focus) and long-term child developmental outcomes (e.g., enhanced confidence, emotional regulation and coping skills, communication skills, self-awareness, leadership) are necessary. Applied researchers interested in this area are encouraged to draw upon the well-established, mainstream parent education and training literature base (e.g., Breitenstein, Gross, & Christophersen, 2014; Kaminski, Valle, Filene, & Boyle, 2008).

A diversity of research designs may serve as pertinent mechanisms for capturing how more empowered parents can exert their capabilities in engaging with coaches and the youth sport community in best practices to help their child's developmental growth and overall experiences in and through sport. Longitudinal mixed methods approaches with attention to education, relationship development, support, and reinforcement practices, as well as targeted organisational and club change are perhaps most exciting as they may combine intervention, observation, and participant reflection with multiple stakeholders (e.g., parents, coaches, athletes, other parents, peers). We recognise that such research may be time consuming and not without organisational, political and cultural barriers (see Dorsch et al., in press). Nevertheless, the last 25 years of research in sport psychology is characterised more by studies '*of parents*' opposed to '*with parents*'; it is timely that we more closely examine what parents are capable of as opposed to studying them as incidental consumers and 'influencers' in environments that can purposely limit their engagement with the research process and subsequent practice.

In conclusion, we have adopted a vantage point in this commemorative article that intentionally critiques and questions the health of sport parent research in terms of its scientific contribution to the developmental goals of sport participation for young people. In the United Kingdom, we are presently in the midst of a political discourse characterised by cultural worries over a lack of duty of care, safeguarding, athlete mental health, and inappropriate environments for young people involved in sport (Knight, Harwood, & Gould, 2017). Such environments may foster delays and deficits in life skills as opposed to progression, and may not be unique to the UK. We believe that parents are more than capable, especially when equipped with the right support from others in the youth sport environment to ensure more positive developmental outcomes and sustained participation in youth sport, yet research has not examined the facets of this proposition fully. We trust that researchers will engage the challenges presented here.

References

Amado, D., Sánchez-Oliva, D., González-Ponce, I., Pulido-González, J. J., & Sánchez-Miguel, P. A. (2015). Incidence of parental support and pressure on their children's motivational processes towards sport practice regarding gender. *PLoS One, 10*(6), e0128015. https://doi.org/10.1371/journal.pone.0128015.

Amorose, A. J., Anderson-Butcher, D., Newman, T. J., Fraina, M., & Iachini, A. (2016). High school athletes' self-determined motivation: The independent and interactive effects of coach, father, and mother autonomy support. *Psychology of Sport and Exercise, 26*, 1–8. https://doi.org/10.1016/j.future.2015.08.005.

Anderson, J. C., Funk, J. B., Elliott, R., & Smith, P. H. (2003). Parental support and pressure and children's extracurricular activities: Relationships with amount of involvement and affective experience of participation. *Applied Developmental Psychology, 24*, 241–257. https://doi.org/10.1016/S0193-3973(03)00046-7.

Atkins, M. R., Johnson, D. M., Force, E. C., & Petrie, T. A. (2013). Do I still want to play? Parents' and peers' influences on girls' continuation in sport. *Journal of Sport Behaviour, 36*, 329–345.

Babkes, M. L., & Weiss, M. R. (1999). Parental influence on children's cognitive and affective responses to competitive soccer participation. *Pediatric Exercise Science, 11*, 44–62.

Baxter-Jones, A. D. G., & Maffulli, N. (2003). Parental influence on sport participation in elite young athletes. *The Journal of Sports Medicine and Physical Fitness, 43*(2), 250.

Bean, C., & Forneris, T. (2016). Examining the importance of intentionally structuring the youth sport context to facilitate positive youth development. *Journal of Applied Sport Psychology, 28*(4), 410–425.

Bean, C. N., Jeffery-Tosoni, S., Baker, J., & Fraser-Thomas, J. (2016). Negative parental behaviour in Canadian youth hockey: Expert insiders' perceptions and recommendations. *Revue phénEPS/PHEnex Journal, 7*(3).

Bean, C., Kramers, S., Forneris, T., & Camiré, M. (2018). *The implicit/explicit continuum of life skills development and transfer. Quest* (advanced online publicationhttps://doi.org/10.1080/00336297.2018.1451348.

Bergeron, M. F., Mountjoy, M., Armstrong, N., Chia, M., Côté, J., Emery, C. A., Faigenbaum, A., Hall, G., Kriemler, S., Léglise, M., & Malina, R. M. (2015).

ARTICLE IN PRESS

International Olympic Committee consensus statement on youth athletic development. *British Journal of Sports Medicine, 49*(13), 843–851.
Berrow, S. R., Knight, C. J., & Hudson, J. (2018). *Psychosocial consequences of parental involvement in youth sport: A systematic review of the literature.* Manuscript submitted for publication.
Boiche, J. C. S., Guillett, E., Bois, J. E., & Sarrazin, P. G. (2011). Antecedents, accuracy and consequences of parents' behaviours. A cross sectional study based on Eccles Expectancy Value model. *International Journal of Sport Psychology, 41*, 1–22.
Breitenstein, S. M., Gross, D., & Christophersen, R. (2014). Digital delivery methods of parenting training interventions: A systematic review. *Worldviews on Evidence-Based Nursing, 11*(3), 168–176.
Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development.* London: Sage.
Camiré, M., Trudel, P., & Bernard, D. (2013). A case study of a high school sport program designed to teach athletes life skills and values. *The Sport Psychologist, 27*, 188–200.
Camiré, M., Trudel, P., & Forneris, T. (2009). Parents' perspectives on the practice of high school sport in a Canadian context. *Qualitative Research in Sport and Exercise, 1*, 239–257. https://doi.org/10.1080/19398440903192324.
Camiré, M., Trudel, P., & Forneris, T. (2012). Coaching and transferring life skills: Philosophies and strategies used by model high school coaches. *The Sport Psychologist, 26*, 243–260.
Chew, E., & Wang, J. (2010). Perceptions of parental autonomy support and control, and aspirations of student athletes in Singapore. *Journal of Personality,* 231–248. https://doi.org/10.1142/9789814304092_0015.
Connaughton, D., Wadey, R., Hanton, S., & Jones, G. (2008). The development and maintenance of mental toughness: Perceptions of elite performers. *Journal of Sports Sciences, 26*, 83–95. https://doi.org/10.1080/02640410701310958.
Côté, J., Turnnidge, J., & Evans, M. B. (2014). The dynamic process of development through sport. *Kinesiologia Slovenica, 20*(3), 14–26.
Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin, 113*(3), 487–496. https://doi.org/10.1037/0033-2909.113.3.487.
Davies, M. J., Babkes-Stellino, M., Nichols, B. A., & Coleman, L. M. (2016). Other-initiated motivational climate and youth hockey players' good and poor sport behaviours. *Journal of Applied Sport Psychology, 28*, 78–96.
DCMS (2016). *Sport duty of care review: Call for evidence.* Retrieved from https://www.gov.uk/government/consultations/sport-duty-of-care-review-call-for-evidence.
Dorsch, T. E., King, M. Q., Dunn, C. R., Osai, K. V., & Tulane, S. (2017). The impact of evidence-based parent education in organized youth sport: A pilot study. *Journal of Applied Sport Psychology, 29*(2), 199–214.
Dorsch, T. E., King, M. Q., Tulane, S., Osai, K. V., Dunn, C. R., & Carlsen, C. (2019). Parent education in organized youth sport: Recommendations from parents, coaches, and administrators. *Journal of Applied Sport Psychology*. (in press) https://doi.org/10.1080/10413200.2018.1510438.
Dorsch, T. E., Smith, A. L., & McDonough, M. H. (2009). Parents' perceptions of child-to-parent socialization in organized youth sport. *Journal of Sport & Exercise Psychology, 31*(4), 444–468.
Dorsch, T. E., & Vierimaa, M. (2017). Parents' roles in fostering positive youth development in sport: Theoretical and conceptual considerations. *International Journal of Behavioral Development, 41*(6), 6–10.
Dunn, C. R., Dorsch, T. E., King, M. Q., & Rothlisberger, K. J. (2016). The impact of family financial investment on perceived parent pressure and child enjoyment and commitment in organized youth sport. *Family Relations, 65*, 287–299. https://doi.org/10.1111/fare.12193.
D'Arripe-Longueville, F., Hars, M., Debois, N., & Calmels, C. (2009). Perceived development of psychological characteristics in male and female elite gymnasts. *International Journal of Sport Psychology, 40*, 424–455.
Elliott, S., & Drummond, M. (2015). The (limited) impact of sport policy on parental behaviour in youth sport: A qualitative inquiry in junior Australian football. *International Journal of Sport Policy and Politics, 7*(4), 519–530.
Elliott, S. K., & Drummond, M. J. N. (2017). During play, the break, and the drive home: The meaning of parental verbal behaviour in youth sport. *Leisure Studies, 36*, 645–656. https://doi.org/10.1080/02614367.2016.1250804.
Forneris, T., Camiré, M., & Trudel, P. (2012). The development of life skills and values in high school sport: Is there a gap between stakeholder's expectations and perceived experiences? *International Journal of Sport and Exercise Psychology, 10*(1), 9–23.
Fraser-Thomas, J. L., Côté, J., & Deakin, J. (2005). Youth sport programs: An avenue to foster positive youth development. *Physical Education and Sport Pedagogy, 10*(1), 19–40.
Fraser-Thomas, J., Côté, J., & Deakin, J. (2008). Examining adolescent sport dropout and prolonged engagement from a developmental perspective. *Journal of Applied Sport Psychology, 20*, 318–333.
Fraser-Thomas, J., Côté, J., & Deakin, J. (2009). Understanding dropout and prolonged engagement in adolescent competitive sport. *Journal of Sports Science and Medicine, 8*, 9–16.
Gagné, M., Ryan, R. M., & Bargmann, K. (2010). Autonomy support and need satisfaction in the motivation and well-being of gymnasts. *Journal of Applied Sport Psychology, 15*, 372–390. https://doi.org/10.1080/10413200390238031.
Gould, D. (2016). Conducting impactful coaching science research: The forgotten role of knowledge integration and dissemination. *International Sport Coaching Journal, 3*(2), 197–203.
Gould, D., & Carson, S. (2008). Life skills development through sport: Current status and future directions. *International Review of Sport and Exercise Psychology, 1*, 58–78. https://doi.org/10.1080/17509840701834573.
Gould, D., Collins, K., Lauer, L., & Chung, Y. (2007). Coaching life skills through football: A study of award winning high school coaches. *Journal of Applied Sport Psychology, 19*, 16–37. https://doi.org/10.1080/10413200601113786.
Gould, D., Lauer, L., Rolo, C., Jannes, C., & Pennisi, N. (2008). The role of parents in tennis success: Focus group interviews with junior coaches. *The Sport Psychologist, 22*, 18–37.
Gould, D., Pierce, S., Wright, E. M., Lauer, L., & Nalepa, J. (2016). Examining expert coaches' views of parent roles in 10-and-under tennis. *Sport, Exercise, and Performance Psychology, 5*(2), 89.
Gutiérrez, M., Caus, N., & Ruiz, L. M. (2005). The influence of parents on the intrinsic motivation of athletes with and without disabilities. *Policlinico - Sezione Medica, 112*(3/4), 73–86.
Hardcastle, S. J., Tye, M., Glassey, R., & Hagger, M. S. (2015). Exploring the perceived effectiveness of a life skills development program for high-performance athletes. *Psychology of Sport and Exercise, 16*, 139–149. https://doi.org/10.1016/j.psychsport.2014.10.005.
Harwood, C. G. (2008). Developmental consulting in a professional football academy: The 5Cs coaching efficacy program. *The Sport Psychologist, 22*(1), 109–133.
Harwood, C. G., & Johnston, J. (2016). Positive youth development and talent development. In N. Holt (Ed.). *Positive youth development through sport* (pp. 113–125). London: Routledge.
Harwood, C. G., & Knight, C. J. (2015). Parenting in youth sport: A position paper on parenting expertise. *Psychology of Sport and Exercise, 16*, 24–35.
Harwood, C., & Swain, A. (2002). The development and activation of achievement goals within tennis: II. A player, parent, and coach intervention. *The Sport Psychologist, 16*(2), 111–137.
Hassell, K., Sabiston, C. M., & Bloom, G. (2010). Exploring the multiple dimensions of social support among elite female adolescent swimmers. *International Journal of Sport Psychology, 41*, 340–359.
Hodge, C. J., Kanters, M. A., Forneris, T., Bocarro, J. N., & Sayre-McCord, R. (2017). A family thing: Positive youth development outcomes of a sport-based life skills program. *Journal of Park and Recreation Administration, 35*(1), 34–50.
Holt, N. L. (2016). *Positive youth development through sport* (2nd ed.). London: Routledge.
Holt, N. L., Kingsley, B. C., Tink, L. N., & Scherer, J. (2011). Benefits and challenges associated with sport participation by children and parents from low-income families. *Psychology of Sport and Exercise, 12*, 490–499.
Holt, N. L., & Neely, K. C. (2011). Positive youth development through sport: A review. *Revista de Iberoamericana de Psicología del Ejercicio y el Deporte (English version), 6*, 299–316.
Holt, N. L., Neely, K. C., Slater, L. G., Camiré, M., Côté, J., Fraser-Thomas, J., MacDonald, D., Strachan, L., & Tamminen, K. A. (2017). A grounded theory of positive youth development through sport based on results from a qualitative meta-study. *International Review of Sport and Exercise Psychology, 10*(1), 1–49.
Holt, N. L., Pankow, K., Camiré, M., Côté, J., Fraser-Thomas, J., MacDonald, D. J., Strachan, L., & Tamminen, K. A. (2018). Factors associated with using research evidence in national sport organisations. *Journal of Sports Sciences, 36*(10), 1111–1117. https://doi.org/10.1080/02640414.2017.1357830.
Holt, N. L., Tamminen, K. A., Black, D. E., Mandigo, J. L., & Fox, K. R. (2009). Youth sport parenting styles and practices. *Journal of Sport & Exercise Psychology, 31*, 37–59.
Holt, N. L., Tamminen, K. A., Black, D. E., Sehn, Z. L., & Wall, M. P. (2008). Parental involvement in competitive youth sport settings. *Psychology of Sport and Exercise, 9*(5), 663–685.
Jacobs, J. M., & Wright, P. M. (2018). Transfer of life skills in sport-based youth development programs: A conceptual framework bridging learning to application. *Quest, 70*(1), 81–99.
Johnston, J., Harwood, C. G., & Minniti, A. M. (2013). Positive youth development in swimming: Clarification and consensus of key psychosocial assets. *Journal of Applied Sport Psychology, 25*, 392–411. https://doi.org/10.1080/10413200.2012.747571.
Jowett, S., & Timson-Katchis, M. (2005). Social networks in sport: Parental influence on the coach-athlete relationship. *The Sport Psychologist, 19*, 267–287.
Juntumaa, B., Keskivaara, P., & Punamäki, R. L. (2005). Parenting, achievement strategies and satisfaction in ice hockey. *Scandinavian Journal of Psychology, 46*, 411–420. https://doi.org/10.1111/j.1467-9450.2005.00472.x.
Kaminski, J. W., Valle, L. A., Filene, J. H., & Boyle, C. L. (2008). A meta-analytic review of components associated with parent training program effectiveness. *Journal of Abnormal Child Psychology, 36*(4), 567–589.
Keegan, R., Spray, C., Harwood, C., & Lavallee, D. (2010). The motivational atmosphere in youth sport: Coach, parent, and peer influences on motivation in specializing sport participants. *Journal of Applied Sport Psychology, 22*, 87–105.
Knight, C. J., Berrow, S. R., & Harwood, C. G. (2017a). Parenting in sport. *Current Opinion in Psychology, 16*, 93–97. https://doi.org/10.1016/j.copsyc.2017.03.011.
Knight, C. J., Boden, C. M., & Holt, N. L. (2010). Junior tennis players' preferences for parental behaviours. *Journal of Applied Sport Psychology, 22*, 377–391.
Knight, C. J., Dorsch, T. E., Osai, K. V., Haderlie, K. L., & Sellars, P. A. (2016a). Influences on parental involvement in youth sport. *Sport, Exercise, and Performance Psychology, 5*(2), 161.
Knight, C. J., & Gould, D. (2016). The coach-parent interaction: Support or Distraction? In R. Thelwell, C. Harwood, & I. Greenlees (Eds.). *The psychology of sports coaching: Research and practice* (pp. 84–98). Abingdon, Oxon: Routledge.
Knight, C. J., Harwood, C. G., & Gould, D. (2017b). Introduction to working with young athletes. In C. J. Knight, C. G. Harwood, & D. Gould (Eds.). *Sport psychology for young athletes* (pp. 1–6). Abingdon, Oxon: Routledge.
Knight, C. J., & Holt, N. L. (2013). Factors that influence parents' experiences at junior tennis tournaments and suggestions for improvement. *Sport, Exercise, and Performance Psychology, 2*, 173–189.
Knight, C. J., & Holt, N. L. (2014). Parenting in youth tennis: Understanding and enhancing children's experiences. *Psychology of Sport and Exercise, 15*, 155–164.
Knight, C. J., Little, G. C., Harwood, C. G., & Goodger, K. (2016b). Parental involvement

ARTICLE IN PRESS

in elite junior slalom canoeing. *Journal of Applied Sport Psychology, 28*(2), 234–256.
Knight, C. J., & Newport, R. A. (2017). Understanding and working with parents of young athletes. In C. J. Knight, C. G. Harwood, & D. Gould (Eds.). *Sport psychology for young athletes*. Abingdon, Oxon: Routledge.
Lacroix, C., Camiré, M., & Trudel, P. (2008). High school coaches characteristics and their perspectives on the purpose of school sport participation. *International Journal of Coaching Science, 2*(2), 23–42.
Lauer, L., Gould, D., Roman, N., & Pierce, M. (2010). Parental behaviours that affect junior tennis player development. *Psychology of Sport and Exercise, 11*, 487–496. https://doi.org/10.1016/j.psychsport.2010.06.008.
Leo, F. M., Sánchez-Miguel, P. A., Sánchez-Oliva, D., Amado, D., & García-Calvo, T. (2015). Motivational climate created by other significant actors and antisocial behaviours in youth sport. *Kinesiology, 47*, 3–10.
Lerner, R. M., Fisher, C. B., & Weinberg, R. A. (2000). Toward a science for and of the people: Promoting civil society through the application of developmental science. *Child Development, 71*(1), 11–20.
Light, R. L. (2010). Children's social and personal development through sport: A case study of an Australian swimming club. *Journal of Sport & Social Issues, 34*, 379–395. https://doi.org/10.1177/0193723510383848.
McArdle, S., & Duda, J. L. (2004). Exploring social–contextual correlates of perfectionism in adolescents: A multivariate perspective. *Cognitive Therapy and Research, 28*(6), 765–788.
McCallister, S. G., Blinde, E. M., & Weiss, W. M. (2000). Teaching values and implementing philosophies: Dilemmas of the youth sport coach. *The Physical Educator, 57*, 35–42.
Morris, R. L., & Kavussanu, M. (2008). Antecedents of approach-avoidance goals in sport. *Journal of Sports Sciences, 26*, 465–476.
National Research Council and Institute of Medicine (2002). *Community programs to promote youth development.* Washington: National Academy Press.
Neely, K. C., & Holt, N. L. (2014). Parents' perspectives on the benefits of sport participation for young children. *The Sport Psychologist, 28*, 255–268. https://doi.org/10.1123/tsp.2013-0094.
Omli, J., & Wiese-Bjornstal, D. M. (2011). Kids Speak: Preferred parent behavior at youth sport events. *Research Quarterly for Exercise & Sport, 82*, 702–711.
Ommundsen, Y., Roberts, G. C., Lemyre, P. N., & Miller, B. W. (2006). Parental and coach support or pressure on psychosocial outcomes of pediatric athletes in soccer. *Clinical Journal of Sport Medicine, 16*, 522–526. https://doi.org/10.1097/01.jsm.0000248845.39498.56.
O'Rourke, D. J., Smith, R. E., Smoll, F. L., & Cumming, S. P. (2014). Relations of parent- and coach-initiated motivational climates to young athletes' self-esteem, performance anxiety, and autonomous motivation: Who is more influential? *Journal of Applied Sport Psychology, 26*, 395–408. https://doi.org/10.1080/10413200.2014.907838.
Petitpas, A. J., Cornelius, A. F., Van Raalte, J. L., & Jones, T. (2005). A framework for planning youth sport programs that foster psychosocial development. *The Sport Psychologist, 19*, 63–80.
Pierce, S., Gould, D., & Camiré, M. (2017). Definition and model of life skills transfer. *International Review of Sport and Exercise Psychology, 10*(1), 186–211.
Power, T. G., & Woolger, C. (1994). Parenting practices and age-group swimming: A correlational study. *Research Quarterly for Exercise & Sport, 65*(1), 59–66.
Riley, A., & Anderson-Butcher, D. (2012). Participation in a summer sport-based youth development program for disadvantaged youth: Getting the parent perspective. *Children and Youth Services Review, 34*, 1367–1377. https://doi.org/10.1016/j.childyouth.2012.03.008.
Sagar, S. S., & Lavallee, D. (2010). The developmental origins of fear of failure in adolescent athletes: Examining parental practices. *Psychology of Sport and Exercise, 11*, 177–187.
Sagar, S. S., & Stoeber, J. (2009). Perfectionism, fear of failure, and affective responses to success and failure: The central role of fear of experiencing shame and embarrassment. *Journal of Sport & Exercise Psychology, 31*(5), 602–627.
Sapieja, K. M., Dunn, J. G. H., & Holt, N. L. (2011). Perfectionism and perceptions of parenting styles in male youth soccer. *Journal of Sport & Exercise Psychology, 33*, 20–39.
Scanlan, T. K., & Lewthwaite, R. (1986). Social psychological aspects of competition for male youth sport participants: IV. Predictors of enjoyment. *Journal of Sport Psychology, 8*(1), 25–35.
Smoll, F. L., Cumming, S. P., & Smith, R. E. (2011). Enhancing coach-parent relationships in youth sports: Increasing harmony and minimizing hassle. *International Journal of Sports Science & Coaching, 6*(1), 13–26.
Strachan, L., Côté, J., & Deakin, J. (2011). A new view: Exploring positive youth development in elite sport contexts. *Qualitative Research in Sport, Exercise and Health, 3*, 9–32. https://doi.org/10.1080/19398441. 2010.541483.
Tamminen, K. A., & Holt, N. L. (2012). Adolescent athletes' learning about coping and the roles of parents and coaches. *Psychology of Sport and Exercise, 13*(1), 69–79.
Tamminen, K. A., McEwen, C. E., & Crocker, P. R. (2016). Perceived parental support, pressure, and the socialization of adolescent athletes' coping. *International Journal of Sport Psychology, 47*(4), 335–354.
Thrower, S. N., Harwood, C. G., & Spray, C. M. (2018). Educating and supporting tennis parents using web-based delivery methods: A novel online education program. *Journal of Applied Sport Psychology*, 1–21.
Turnnidge, J., Côté, J., & Hancock, D. J. (2014). Positive youth development from sport to life: Explicit or implicit transfer? *Quest, 66*, 203–217.
Turnnidge, J., Vierimaa, M., & Côté, J. (2012). An in-depth investigation of a model sport program for athletes with a physical disability. *Psychology, 3*, 1131–1141. https://doi.org/10.4236/psych.2012.312A167.
Wiersma, L. D., & Fifer, A. M. (2008). "The schedule has been tough but we think it's worth it": The joys, challenges, and recommendations of youth sport parents. *Journal of Leisure Research, 40*(4), 505–530.
Wolfenden, L. E., & Holt, N. L. (2005). Talent development in elite junior tennis: Perceptions of players, parents, and coaches. *Journal of Applied Sport Psychology, 17*, 108–126. https://doi.org/10.10413200590932416.
Wuerth, S., Lee, M. J., & Alfermann, D. (2004). Parental involvement and athletes' career in youth sport. *Psychology of Sport and Exercise, 5*, 21–33. https://doi.org/10.1016/S1469-0292(02)00047-X.
Wylleman, P., & Lavallee, D. (2004). A developmental perspective on transitions faced by athletes. In M. Weiss (Ed.). *Developmental sport and exercise psychology: A lifespan perspective* (pp. 507–527). Morgantown, WV: Fitness Information.

Journal of Adolescent Health 58 (2016) 433–439

ELSEVIER

JOURNAL OF ADOLESCENT HEALTH

www.jahonline.org

Original article

Not Just Academics: Paths of Longitudinal Effects From Parent Involvement to Substance Abuse in Emerging Adulthood



Momoko Hayakawa, Ph.D. [a,*], Alison Giovanelli, M.A. [b], Michelle M. Englund, Ph.D. [b], and Arthur J. Reynolds, Ph.D. [a,b]

[a] *Humphrey School of Public Affairs, University of Minnesota, Minneapolis, Minnesota*
[b] *Institute of Child Development, University of Minnesota, Minneapolis, Minnesota*

Article history: Received August 4, 2015; Accepted November 17, 2015
Keywords: Parent involvement; Substance abuse; Mechanisms of substance abuse prevention

A B S T R A C T

Purpose: By the 12th grade, half of American adolescents have abused an illicit drug at least once (Johnston et al., 2015). Although many substance misuse prevention programs exist, we propose an alternative mechanism for reducing substance use. There is evidence that parent involvement is related to reductions in children's behavior problems which then predict later substance abuse. We examine the Child-Parent Center (CPC) program, an early childhood intervention, as a strategy to impact substance abuse.
Methods: We conducted a path analysis from CPC to parent involvement through early adolescent problem behaviors and competencies to young adult substance abuse. Participants (N = 1,203; 51.5% female; 93.8% African-American) were assessed from age 3 to 26 years.
Results: CPC participation initiates a pathway to increased parent involvement and expectations, which positively impact adolescents' competencies and problem behaviors, lowering rates of substance abuse.
Conclusions: Through early childhood education, increasing early parental involvement and expectations can alter life-course outcomes by providing children with a foundation for positive behaviors and encouraging adaptive functioning in adolescence.
© 2016 Society for Adolescent Health and Medicine. All rights reserved.

IMPLICATIONS AND CONTRIBUTION

This study examined the Child-Parent Center program as an alternative substance abuse prevention mechanism. Through Child-Parent Center, parent involvement improved competencies and problem behaviors, influencing substance abuse. These results support early childhood education programs as a possible strategy to mitigate adolescent substance abuse.

By the 12th grade, approximately half of American adolescents have used an illicit drug at least once [1]. Owing to the detrimental impacts of substance abuse, there has been a plethora of research aimed at identifying the risk factors and causes of substance abuse, which has led to the development of multiple prevention programs with the aim of delaying and reducing substance abuse [2–5]. This study examines an early childhood intervention program as a potential approach to reduce substance abuse in emerging adulthood.

* Address correspondence to: Momoko Hayakawa, Ph.D., Humphrey School of Public Policy, University of Minnesota, 301 19th Ave. S., Minneapolis, MN 55455.
E-mail address: hayak006@umn.edu (M. Hayakawa).

1054-139X/© 2016 Society for Adolescent Health and Medicine. All rights reserved.
http://dx.doi.org/10.1016/j.jadohealth.2015.11.007

Prevention strategies for substance abuse

The National Registry of Evidence-Based Programs and Practices (http://nrepp.samhsa.gov/) identifies 33 evidence-based childhood substance abuse prevention programs, ranging from school-based social competency programs, curriculum-based programs, community-level interventions, and home-visiting programs. Although evidence based, these programs are limited in scope and target the delayed onset or prevention of substance abuse through a single strategy (e.g., home visitation, school curriculum). A more economically effective approach would be to fund an ecologically oriented program that includes reducing substance abuse as one among other positive changes.

The Child-Parent Center (CPC) program is a comprehensive early childhood education (ECE) intervention program with a parent involvement focus, targeted for economically disadvantaged families. Research has documented the long-term positive outcomes for CPC participants across a variety of developmental domains [6–9]. Although the CPC program has demonstrated increased parent involvement and has associated these increases with student achievement [10–12], the mechanisms leading from program involvement to substance abuse are unclear. There is evidence that parent involvement is related to children's behavior problems in adolescence [13] and that these problems then predict substance abuse in emerging adulthood [14]. Little research, however, has investigated the pathways within ECE programs from parent involvement and expectations to young adult substance abuse. Furthermore, the effects of parental factors on competencies, such as frustration tolerance, and problem behaviors, have gone relatively unstudied. An ECE program that demonstrates a long-term positive impact *beyond* academics, and including young adult health, would be a financially efficient prevention strategy; evidence indicates that the benefits of ECE programs on education and crime alone can return $7 for every $1 invested [9].

Competencies and problem behaviors and substance abuse

Young adult drug abuse poses a myriad of developmental risks through the increased odds of life-course persistent misuse. The likelihood of developing a substance use disorder (SUD) is considerably higher when substance abuse begins in adolescence [15,16]; although the median age of onset of SUD is 19–21 years [17], 90% of people who qualify for a diagnosis began using substances before the age of 18 years. These problem behaviors are situated in a complex-interacting ecological context including parent, school, and personality traits that has been recognized clinically as a premorbid feature of SUD [18–22]. Frustration tolerance in particular, which has been conceptualized as a self-regulatory competency [23], has been associated with substance abuse across a range of studies [19]. For example, boys at high risk for SUD have been found to be lower in frustration tolerance than boys who were not at risk [22].

Childhood and adolescent externalizing and antisocial behaviors also consistently link with later substance abuse [24,25]. Aggressiveness in early childhood predicts drug abuse and becomes more predictive with increasing age [26,27]. Furthermore, early adolescent behavior problems predispose children to the development of SUD even when controlling for attentional problems [26]. Bryant et al. [28] examined the association between children's behaviors and later substance abuse and found that school misbehavior was associated with substance abuse at the age of 14 years. In addition, children who evince behavior problems in middle childhood are more likely to have continued conduct problems later in life than children who do not [29]. Conduct problems have also been found to be associated with SUD [5,24]. Given their potential to lead to maladaptive behaviors, behavior problems are important to mitigate.

Parent involvement, competencies, and problem behaviors

Research indicates that early parent involvement has a sustained influence throughout children's development. Although the positive impact of parent involvement and expectations on achievement has been thoroughly examined [30,31], far less research has examined nonacademic outcomes. Especially of interest is the impact of early school parent involvement on later maladaptive behaviors (e.g., substance abuse) and its underlying mechanisms (e.g., frustration tolerance).

There is some evidence indicating that parent involvement and expectations impact domains of development beyond achievement. For example, Griffin et al. [32] found that parent involvement was associated with less delinquent activity. Moreover, research indicates that low parent involvement is related to a host of later problems (e.g., behavior problems, attendance) [13,26,28], which then predict adolescent substance use [1]. Relatedly, the relationship between substance use and academic achievement has also been well documented [33].

Furthermore, low parent expectations of a child's school progress have been found to be associated with later substance abuse [21,28]. However, the relations between parent involvement and later substance use have not been thoroughly investigated.

The present study

The CPC program is an ongoing center-based early intervention that provides educational- and family-support services to disadvantaged children and their families [34]. CPC programs provide opportunities to encourage parent participation in school events and activities to facilitate a welcoming parent involvement culture. Numerous longitudinal studies have documented the success of these efforts, identifying the positive impact of CPC parent involvement on children's reading achievement and reduced rates of grade retention and special education status [35].

Although the CPC program's impact on parent involvement has previously been examined within the framework of children's long-term academic success [12], its impact on young adults' tendency to abuse substances and predictive mechanisms within this context has not been examined. To extend current literature, in the present study, we examine the pathways leading from CPC involvement to substance abuse. As school parent involvement involves multiple contexts of bidirectional relationships, it is critical that we examine the potential long-term pathways from early parent involvement to young adult well-being. Moreover, it is important to identify the specific mechanisms that underlie these long-term associations so that interventions can be based on elements with proven effectiveness. We hypothesized that greater parent involvement and expectations increased through CPC participation, set in motion a pathway leading from these parenting factors to reduced early adolescent behavior problems, and higher frustration tolerance, resulting in lower rates of substance abuse in emerging adulthood.

Methods

Sample

The study sample is from the Chicago Longitudinal Study, an investigation of the effects of the CPC program [35]. Children who attended CPC in preschool ($n = 777$) and a matched comparison group ($n = 426$) were followed into adulthood (51.5% female). As both the CPC schools and comparison schools were located in inner city Chicago, there was very little variation in demographic characteristics—93.8% of the sample was

African-American. All descriptive statistics of independent, dependent, and covariate variables used are presented in Table 1. As a consequence of living in school neighborhoods eligible for Title I funding, all children in the study were eligible for and participated in government-funded early childhood programs. In this quasiexperimental study, groups were matched on preprogram characteristics (e.g., age, eligibility for intervention, family poverty).

Key variables

CPC participation. CPC participants were coded as 1 (0 = comparison).

Parent involvement and expectations. Teacher ratings of parent school involvement (i.e., frequency of attendance at school events) and expectations (i.e., parent expectation for child's educational attainment) assessed every year from kindergarten through third grade were used (all items were on a scale from 1 to 5). Teachers have been shown to be reliable assessors of parent school involvement and expectations [36]. All available data on parent involvement and expectations were standardized via *z* scores. Means for parent involvement and expectations were calculated by adding all available *z*-scored parent involvement and expectation items and dividing by the number of time points available. Students had different teachers at each grade level; therefore, creating a mean score from K third grade combines scores from a number of teachers, and minimizes potential common method bias attributable to information obtained from only one informant, and providing a more valid assessment of these constructs than relying on one information at one time point.

Competencies and problem behaviors. Problem behaviors and frustration tolerance, distinct areas of child functioning, were measured by the Teacher–Child Rating Scale in the sixth and seventh grades [23]. As with the earlier grades, participants had different teachers at sixth and seventh grades; a mean of the participants' scores on problem behaviors and frustration tolerance was used in analyses. Creating a mean of these two grade levels eases the potential for common method bias because of information obtained from one informant.

The problem behavior subscale is the mean of sixth and seventh grades combined total scores on acting out, shy/anxious, and problem behavior/learning problems, as recommended by the developer of the tool [23]. Teachers rated students on the following scale: 1 = "not a problem," 3 = "moderate," and 5 = "very serious problem"; range = 18–84; M = 36.31, standard deviation [SD] = 14.25.

Acting out. Each year's score is the sum of six items (e.g., "disruptive in class," "fidgety," "disturbs others while they are working," "constantly seeks attention," "overly aggressive to peers," "deviant, obstinate, stubborn"; range = 6–30; M = 12.25, SD = 6.21). The reliability coefficient (Cronbach's alpha) using a pairwise comparison for Grade 6 = .94 (n = 813) and Grade 7 = .95 (n = 718).

Shy/anxious. This scale is the sum of six items (e.g., withdrawn; shy, timid; range = 6–28; M = 9.94; SD = 3.96). The reliability

Table 1
Study variable descriptive statistics

Variable	Intervention status	N	*M* (standard deviation)	%	Range
Parent involvement	CPC	740	.11 (.71)		−1.88 to 2.00
	Control	405	−.26 (.73)		−2.07 to 2.00
Parent expectations	CPC	701	.07 (.78)		−3.33 to 1.54
	Control	367	−.22 (.91)		−3.40 to 1.43
Problem behaviors	CPC	565	35.58 (13.95)		18–84
	Control	292	37.72 (14.73)		18–78
Frustration tolerance	CPC	565	14.74 (4.60)		5–25
	Control	292	13.95 (4.53)		5–25
Substance abuse	CPC	777	.23 (.423)		0–1
	Control	426	.31 (.47)		0–1
Covariates					
Gender (female)	CPC	777		54.3	
	Control	426		46.5	
Race (black)	CPC	777		94.0	
	Control	426		93.4	
School neighborhood >60% poverty	CPC	777		77.2	
	Control	426		73.7	
Single parent	CPC	777		75.8	
	Control	426		75.4	
Mother < 18	CPC	777		16.5	
	Control	426		17.6	
Mother < high-school education	CPC	777		50.1	
	Control	426		58.7	
Four or more children	CPC	777		16.6	
	Control	426		19.5	
TANF participation	CPC	777		62.2	
	Control	426		61.3	
Kindergarten achievement	CPC	777	66.71 (12.68)		30–99
	Control	426	60.27 (13.27)		19–99

TANF = Temporary Assistance for Needy Families.

coefficient (Cronbach's alpha) using a pairwise comparison for Grade 6 = .81 (n = 812) and Grade 7 = .79 (n = 718).

Learning/behavior problems. This scale consists of six items (e.g., underachieving; poor work habits; poor concentration; range = 18–84; $M = 36.83$, SD = 14.22). The reliability coefficient (Cronbach's alpha) using a pairwise comparison for Grade 6 = .93 (n = 813) and Grade 7 = .94 (n = 718).

Frustration tolerance. This scale measures a total of five items (e.g., ignores teasing; tolerates frustration; range = 5–25; M = 14.47; SD = 4.59). The reliability coefficient (Cronbach's alpha) using a pairwise comparison for Grade 6 = .89 (n = 813) and Grade 7 = .91 (n = 718).

Substance abuse. We combined self-report survey data of substance abuse collected at the age of 24 years (e.g., Have you ever smoked marijuana, Have you ever used drugs harder than marijuana?) with an official adult drug arrest by the age of 26 years acquired from the Illinois Department of Corrections records (abusers = 315; nonabusers = 888). Participants who received a 1 on at least one source of data received a 1 (1 = substance abuse; 0 = no abuse).

Covariates

All covariates (dichotomous, e.g., 1 = teen mom, 0 = not teen mom; 1 = single mom, 0 = not single mom) acquired through birth records, and administrative data assessed before participating in the study, included in the path analysis, are presented in Table 1.

Missing data

The present study included all participants with substance abuse data (N = 1,203). Amount of missing data ranged from 0% to 28.7%, with a mean of 6.39% over all variables. Analysis of missing data for the sample of participants with substance use data were conducted to determine whether missingness was related to the value of the variables under investigation (i.e., correlations or chi-square analyses were run with missingness and variables in the analyses); none of the variables were significantly associated with missingness, indicating that data were missing at random [37]. To allow analysis of all participants included in this sample, full information maximum likelihood (ML) estimation was performed using Mplus version 7.3 [38]. For missing completely at random and missing at random data sets, this estimation has been shown to perform adequately and has all the strengths of multiple imputation [39].

Data analysis plan

We tested a path analysis using Mplus version 7.3 [38] examining the process among CPC participation, school parent involvement, parent expectations, adolescent competencies and problem behaviors, and young adult substance abuse (Figure 1). We predicted that parent involvement decreases problem behaviors and increases frustration tolerance, which in turn lowers the rate of substance abuse among young adults. We conducted a model with ML estimator and a Monte Carlo integration; substance abuse was defined as a categorical variable. Mplus estimates a logistic regression within the path model and provides odds ratios for variables regressed on the categorical-dependent variable when the estimator is specified as ML [38]. All the paths in the model controlled all covariates (Table 1) and within time cross-sectional construct correlations.

Results

Correlations

Zero-order correlations for key variables in the path analysis model are reported in Table 2. All key variables included in the model are significantly correlated with each other.

Path analysis

The results of the path analysis for the full model are shown in Figure 2. Omitted from the figure are nonsignificant paths and paths from covariates. The model accounts for 41% of the variance in substance abuse.

Table 3 displays the path coefficients, significance levels, and the standard errors, controlling for all covariates. Significant paths from (a) CPC participation to school parent involvement

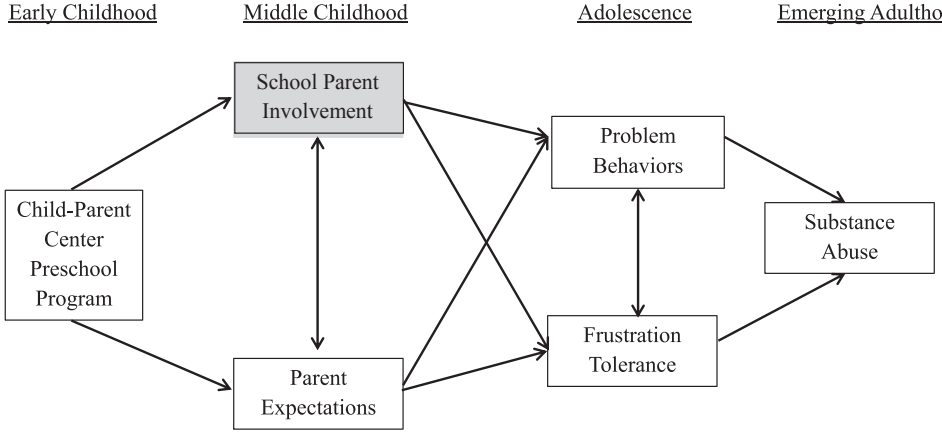


Figure 1. Hypothesized path examining preschool intervention, parent involvement, and social competencies on substance abuse.

Table 2
Correlation matrix for variables in path analysis model

	Problem behavior	Frustration tolerance	Parent involvement	Parent expectations	Substance abuse
CPC Participation	−.083**	.091**	.239***	.169***	−.089**
Problem behavior	—	−.678***	−.300***	−.316***	.226***
Frustration tolerance		—	.222***	.239***	−.226***
Parent involvement			—	.525***	−.143***
Parent expectations				—	−.158***

**$p < .01$; ***$p < .001$.

($\beta = .179$, $p = .000$) and parent expectations ($\beta = .096$, $p = .001$), (b) school parent involvement and parent expectations to behavior problems ($\beta = -.143$, $p = .000$; $\beta = -.160$, $p = .000$, respectively) and frustration tolerance ($\beta = .107$, $p = .006$; $\beta = .126$, $p = .001$, respectively), and (c) adolescent problem behaviors ($\beta = .123$, $p = .020$) and adolescent frustration tolerance ($\beta = -.107$, $p = .054$) to young adult substance use were found. Higher levels of problem behaviors increased the odds of substance abuse in emerging adulthood (odds ratio = 1.021), so that for every one unit increase in problem behaviors, the odds of substance abuse increased by a factor of 1.021; whereas higher levels of frustration tolerance in adolescence lowered the odds of substance abuse in emerging adulthood (odds ratio = .946), so that for every one unit increase in frustration tolerance, the odds of substance abuse decreased by a factor of .946.

In addition, the path analysis was also run with the inclusion of race as a covariate. Given that 93.8% of our participants were African-American, the results remained the same.

Indirect paths. Three significant indirect pathways were identified:

1. CPC participation increased school parent involvement and parent expectations in middle childhood which both decreased problem behaviors in adolescence and lead to a decrease in the likelihood of substance abuse.
2. Increased parent involvement in middle childhood decreased problem behaviors in adolescence leading to a lower likelihood of substance abuse.
3. Increased parent expectations decreased problem behaviors in adolescence leading to less likelihood of young adult substance abuse.

Discussion

Our findings highlight the importance of CPC participation as an interventional strategy to decrease substance abuse nearly two decades later. Participation in the CPC program in early childhood initiated a pathway increasing parent involvement and expectations that then lead to increased middle childhood competencies and decreased problem behaviors, which then lowered the likelihood of substance abuse in emerging adulthood. Thus, CPC participation sets in motion a positive developmental trajectory leading to reduced substance abuse. An important mechanism whereby CPC participation is effective is increased school-age school parent involvement.

Although our results provided evidence for the predictive impact of early adolescent problem behaviors on substance abuse, we also found a trending pathway from early adolescent frustration tolerance to substance abuse. Our analyses demonstrate that both problem behaviors and frustration tolerance may contribute two substantively different mechanisms in impacting substance abuse. Further investigation is needed to examine why problem behaviors had a clear, strong association with substance abuse, whereas frustration tolerance had a weaker trending association.

Although previous studies have documented the impact of school parent involvement on children's development, the

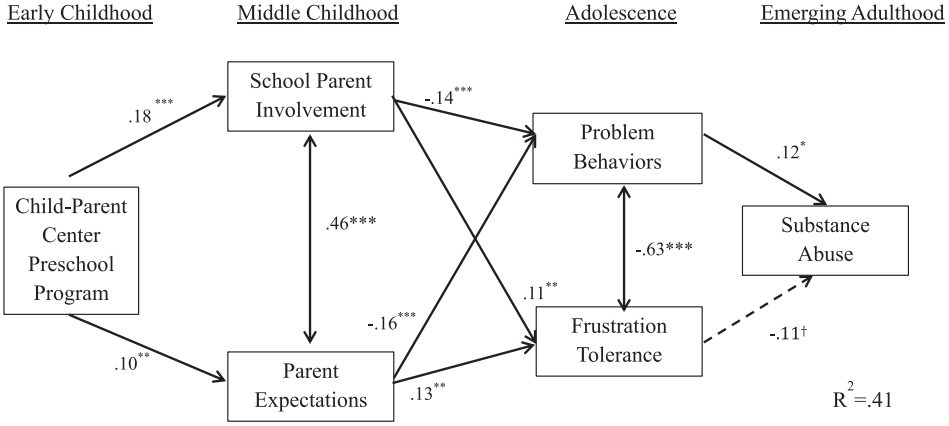


Figure 2. Path analysis examining preschool intervention, parent involvement, and social competencies on substance abuse. Note: All paths in the model included covariates; these are omitted from the figure for clarity purposes. Nonsignificant paths are omitted from the figure for clarity purposes. †$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.

Table 3
Path analysis results

Path model estimates	Unstandardized	Standardized	*p* value
CPC → parent involvement	.277 (.044)	.179	.000
CPC → parent expectation	.169 (.051)	.096	.001
Parent involvement → problem behaviors 6/7	−2.766 (.715)	−.143	.000
Parent expectation → problem behaviors 6/7	−2.728 (.630)	−.160	.000
Parent involvement → frustration tolerance 6/7	.663 (.242)	.107	.006
Parent expectation → frustration tolerance 6/7	.687 (.216)	.126	.001
Behavior problems 6/7 → drug abuse	.020 (.009)	.123	.020
Frustration tolerance 6/7 → drug abuse	−.055 (.029)	−.107	.054
Indirect effects			
Overall indirect effect			
CPC → drug abuse	−.042 (.013)		.001
Specific indirect effect			
CPC → parent involvement → problem behaviors 6/7 → drug abuse	−.016 (.008)		.058
CPC → parent expectation → problem behaviors 6/7 → drug abuse	−.009 (.005)		.083
Overall indirect effect			
Parent involvement → drug abuse	−.093 (.032)		.003
Specific indirect effect			
Parent involvement → problem behaviors 6/7 → drug abuse	−.056 (.029)		.047
Overall indirect effect			
Parent expectation → drug abuse	−.093 (.029)		.002
Specific indirect effect			
Parent expectation → problem behaviors 6/7 → drug abuse	−.056 (.027)		.042

"6/7" denotes behaviors assessed in sixth and seventh grade. Covariates are not included in this table for clarity purposes. Mplus does not provide standardized indirect effects for model maximum likelihood.

present study is the first of its kind not only to illustrate the long-lasting implications of school parent involvement on children's health status but also to identify specific mechanisms (i.e., frustration tolerance, problem behaviors) of this longitudinal process. Our research provides support for examining programs with a strong focus on promoting early school parent involvement and high parent expectations as a strategy to reduce substance abuse and other health- and well-being–related issues later in emerging adulthood.

Although there are a number of other factors that were not accounted for in the present study that may affect individuals during the transition to adulthood, work on social control by Gottfredson and Hirschi [40] provides support for our findings. The authors proposed a "General theory of crime" that pinpointed parent involvement as the origin of the process that leads to delinquent behavior. Parents who are involved in the success of their children and have high expectations for their achievement may recognize poor behaviors exhibited due to the lack of the child's self-control and appropriately modify the children's behaviors to reflect self-control. In this way, highly involved parents with high expectations for their children's success shape and develop their children's self-control skills. Parent involvement first sets the trajectory of an individual's life course in determining delinquent behavior.

Implications

The identification of mechanisms that connect CPC program participation in preschool to substance abuse in emerging adulthood accounted for >40% of the variance in predicting substance abuse. The influence, albeit indirect, of ECE on substance abuse >15 years later demands further consideration of high-quality ECE programs as an alternative prevention program to reduce long-term substance abuse. Policy makers should consider further endorsement of ECE programs with an emphasis on parent involvement as an alternative approach to impacting maladaptive behaviors, rather than taking myopic and targeted approaches to reducing substance abuse.

Furthermore, our results suggest that increasing school parental involvement and expectations of their children's academic success starting in early childhood can alter life-course outcomes by providing children with a foundation for prosocial behaviors and encouraging adaptive functioning in adolescence and emerging adulthood.

Based on our findings, along with other studies supporting the benefits of school involvement [13], it is clear that schools should provide a welcoming environment for parents and encourage parents to participate in school events—particularly during early and middle childhood.

Our study's findings highlight the persistent impact that a high-quality ECE program can have on young adult substance abuse among predominantly African-American populations. We have documented that ECE programs may have long-lasting impacts not just on academics but also on long-term well-being. ECE, combined with a strong emphasis on family engagement, is important for enhancing children's long-term health and well-being, through improving their competencies and problem behaviors. Thus, our recommendations are twofold: (1) we urge education and public health policy makers to begin reconceptualizing ECE as a prevention program not only for academics but also for well-being. Second, within these ECE programs, we urge schools and administrators to welcome parents into their schools and provide families with opportunities to be involved and engaged in a partnership with their school community.

Acknowledgments

Selected sections of this study were presented at the 2014 Society for Research on Adolescence poster session in Austin, TX. All authors who have significantly contributed to the article are listed.

Funding Sources

This research was supported by the National Institute of Health (grant: R01HD034294) and U.S. Department of Education (grant: U411B110098).

References

[1] Johnston LD, O'Malley PM, Miech RA, et al. Monitoring the future national survey results on drug use: 1975-2014: Overview. In: Key Findings on Adolescent Drug Use. Ann Arbor: Institute for Social Research, The University of Michigan; 2015.
[2] Enoch MA. The role of early life stress as a predictor for alcohol and drug dependence. Psychopharmacology 2011;214:17–31.
[3] Grant BF, Dawson DA. Age of onset of drug use and its association with DSM-IV drug abuse and dependence: Results from the national longitudinal alcohol epidemiologic survey. J Subst Abuse 1998;10:163–73.
[4] Kilpatrick DG, Acierno R, Saunders B, et al. Risk factors for adolescent substance abuse and dependence: Data from a national sample. J Consult Clin Psych 2000;68:19–30.
[5] Robins L, McEvoy L. Conduct problems as predictors of substance abuse. In: Robins L, Rutter M, eds. Straight and Devious Pathways From Childhood to Adulthood. New York, NY: Cambridge University Press; 1990:182–204.
[6] Reynolds AJ, Temple JA, Robertson DL, Mann EA. Long-term effects of an early childhood intervention on educational achievement and juvenile arrest: A 15-year follow-up of low-income children in public schools. JAMA 2001;285:2339–46.
[7] Reynolds AJ, Mathieson LC, Topitzes JW. Do early childhood interventions prevent child maltreatment? A review of research. Child Maltreat 2009;14:182–206.
[8] Reynolds AJ, Temple JA, Ou S, et al. School-based early childhood education and age-28 well-being: Effects by timing, dosage, and subgroups. Science 2011;333:360–4.
[9] Reynolds AJ, Temple JA, White BA, et al. Age 26 cost-benefit analysis of the child-parent center early education program. Child Dev 2011;82:379–404.
[10] Barnard WM. Parent involvement in elementary school and educational attainment. Child Youth Serv Rev 2004;26:39–62.
[11] Hayakawa M, Englund MM, Warner-Richter MN, Reynolds AJ. The longitudinal process of early parent involvement on student achievement: A path analysis. NHSA Dialog 2013;16:103–26.
[12] Ou S, Reynolds AJ. Predictors of educational attainment in the Chicago longitudinal study. Sch Psychol Quart 2008;23:199–229.
[13] Loeber R, Stouthamer-Loeber M. Family factors as correlates and predictors of juvenile conduct problems and delinquency. Crime & Just 1986;7:29–149.
[14] Reef J, Diamantopoulou S, Van Meurs I, et al. Predicting adult emotional and behavioral problems from externalizing problem trajectories in a 24-year longitudinal study. Eur Child Adoles Psy 2010;19:577–85.
[15] Staff J, Schulenberg JE, Maslowsky J. Substance use changes and social role transitions: Proximal developmental effects on ongoing trajectories from late adolescence through early adulthood. Child Y Psy 2010;22:917–32.
[16] The National Center on Addiction and Substance Abuse at Columbia University. Adolescent substance use: America's #1 public health problem. Available at: http://www.casacolumbia.org/addiction-research/reports/adolescent-substance-use. Updated June 2011. Accessed July 8, 2015.
[17] Sawyer SM, Afifi RA, Bearinger LH, et al. Adolescence: A foundation for future health. Lancet 2012;379:1630–40.
[18] Block J, Block JH, Keyes S. Longitudinally foretelling drug usage in adolescence: Early childhood personality and environmental precursors. Child Dev 1988;59:336–55.
[19] Arteaga I, Chen C, Reynolds AJ. Childhood predictors of adult substance abuse. Child Youth Serv Rev 2010;32:1108–20.
[20] Aronson H, Gilbert A. Preadolescent sons of male alcoholics: An experimental study of personality patterning. Arch Gen Psychiat 1963;8:235–41.
[21] Segal BM, Stewart JC. Substance use and abuse in adolescence: An overview. Child Psychiat Hum D 1995;26:193–210.
[22] Tarter RE. Are there inherited behavioral traits that predispose to substance abuse? J Consult Clin Psych 1988;56:189.
[23] Hightower AD. The teacher-child rating scale: A brief objective measure of elementary children's school problem behaviors and competencies. Sch Psychol Rev 1986;15:393–409.
[24] Fergusson DM, Horwood LJ, Ridder EM. Conduct and attentional problems in childhood and adolescence and later substance use, abuse and dependence: Results of a 25-year longitudinal study. Drug Alcohol Depen 2007;88(Suppl):S14–26.
[25] Gilvarry E, McArdle P. Determinants of substance misuse in young people. Dev Med Child Neurol 2007;49:636–40.
[26] Hawkins JD, Catalano RF, Miller JY. Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. Psychol Bull 1992;112:64–105.
[27] Reinherz HZ, Giaconia RM, Hauf AMC, et al. General and specific childhood risk factors for depression and drug disorders by early adulthood. J Am Acad Child Psy 2000;39:223–31.
[28] Bryant AL, Schulenberg JE, O'Malley PM, et al. How academic achievement, attitudes, and behaviors relate to the course of substance use during adolescence: A 6-year multiwave national longitudinal study. J Res Adolescence 2003;13:361–97.
[29] Moffitt TE. Adolescence-limited and life-course persistent antisocial behavior: A developmental taxonomy. Psychol Rev 1993;100:674–701.
[30] Fan X, Chen M. Parent involvement and students' academic achievement: A meta-analysis. Educ Psychol Rev 2001;13:1–22.
[31] Jeynes WH. A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. Urban Educ 2005;40:237–69.
[32] Griffin KW, Botvin GJ, Scheier LM, et al. Parenting practices as predictors of substance use, delinquency, and aggression among urban minority youth: Moderating effects of family structure and gender. Psychol Addict Behav 2000;14:174.
[33] Jeynes W. The relationship between the consumption of various drugs by adolescents and their academic achievement. Am J Drug Alcohol Ab 2002;28:1–21.
[34] Reynolds AJ. Educational success in high-risk settings: Contributions of the Chicago longitudinal study. J Sch Psychol 2000;37:449–55.
[35] Reynolds AJ, Clements M. Parental involvement and children's school success. In: Patrikakou EN, Weissberg R, Redding S, Walberg HJ, eds. School-Family Partnerships for Children's Success. New York, NY: Teachers College Press; 2005:109–27.
[36] Baker AJL, Kessler-Klar S, Piotrkowski CS, Fl Parker. Kindergarten and first-grade teachers' reported knowledge of parents' involvement in their children's education. Elem Sch J 1999;99:367–80.
[37] Shafer JL, Graham JW. Missing data: Our view of the state of the art. Psychol Methods 2002;7:147.
[38] Muthén LK, Muthén BO. Mplus user' guide. 7th edition. Los Angeles, CA: Muthén & Muthén; 1998-2012.
[39] Widaman KF. III. Missing data: What to do with or without them. Monogr Soc Res Child 2006;71:42–64.
[40] Gottfredson MR, Hirschi T. A General theory of crime. Stanford, CA: Stanford University Press; 1990.

ResearchGate

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/301560587

The relationship between parental literacy involvement, socio-economic status and reading literacy

Article *in* Educational Review · April 2016

DOI: 10.1080/00131911.2016.1164667

CITATIONS
15

READS
484

3 authors:



Kenneth Hemmerechts
Vrije Universiteit Brussel
18 PUBLICATIONS **37** CITATIONS
SEE PROFILE



Orhan Agirdag
KU Leuven
78 PUBLICATIONS **671** CITATIONS
SEE PROFILE



Dimokritos Kavadias
Vrije Universiteit Brussel
43 PUBLICATIONS **167** CITATIONS
SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Experiments View project

PRO-M : Promoting Early Multilingualism in Childhood and Childcare View project

All content following this page was uploaded by Kenneth Hemmerechts on 22 November 2017.

The user has requested enhancement of the downloaded file.



Educational Review

ISSN: 0013-1911 (Print) 1465-3397 (Online) Journal homepage: http://www.tandfonline.com/loi/cedr20

The relationship between parental literacy involvement, socio-economic status and reading literacy

Kenneth Hemmerechts, Orhan Agirdag & Dimokritos Kavadias

To cite this article: Kenneth Hemmerechts, Orhan Agirdag & Dimokritos Kavadias (2016): The relationship between parental literacy involvement, socio-economic status and reading literacy, Educational Review, DOI: 10.1080/00131911.2016.1164667

To link to this article: http://dx.doi.org/10.1080/00131911.2016.1164667

Published online: 21 Apr 2016.

Submit your article to this journal

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at
http://www.tandfonline.com/action/journalInformation?journalCode=cedr20

Download by: [UVA Universiteitsbibliotheek SZ] **Date:** 21 April 2016, At: 06:35

EDUCATIONAL REVIEW, 2016
http://dx.doi.org/10.1080/00131911.2016.1164667

Routledge
Taylor & Francis Group

The relationship between parental literacy involvement, socio-economic status and reading literacy

Kenneth Hemmerechts[a], Orhan Agirdag[b,c] and Dimokritos Kavadias[a]

[a]Political Science, Free University of Brussels (VUB), Brussels, Belgium; [b]Educational Sciences, Laboratory for Education and Society, Catholic University of Leuven (KU Leuven), Leuven, Belgium; [c]Department of Educational Sciences, University of Amsterdam, Amsterdam, The Netherlands

ABSTRACT

In this article, we explore the relationship between parental literacy activities with the child, socio-economic status (SES) and reading literacy. We draw upon the Bourdieusian theory of habitus development to explore this relationship. Multilevel analyses of a survey of 43,870 pupils (with an average age of 10 years) in 10 Western European regions reveal a positive relation between early parental involvement in literacy activities (before primary school) and an increasing level of reading literacy and parental education. Students with a lower SES also have lower reading literacy and reading attitudes than students with a higher SES. We also find that children with a lower SES experience more late parental involvement in literacy activities (during the fourth year of formal schooling) than children with a higher SES. We also show that late parental involvement in literacy activities is an adjustment for worse or better reading literacy during primary school.

ARTICLE HISTORY
Received 16 December 2015
Accepted 8 March 2016

KEYWORDS
Bourdieu; habitus; reading literacy; parental literacy involvement

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

Introduction

Parental involvement in children's education is one of the claimed keys to success at school (Hattie 2009; Hornby and Lafaele 2011). Scholars accordingly declare social class differences in parental involvement and child-rearing practices to be an important element contributing to the perpetuation of social inequalities from one generation to the next (Bourdieu and Passeron 1977; Lareau 2002, 2003; Horvat, Weininger, and Lareau 2003). This reflects the importance of the socialization process through which children begin to learn different ideas, skills and develop an identity. This socialization process is initiated in the early childhood in the family environment (i.e. primary socialization) and continues in the school environment (i.e. secondary socialization) (Corsaro 2010). When children start school, these two different types of socialization begin to coexist and possibly interrelate (Bourdieu 1984, 1990; Durkheim [1925] 1961).

A specific form of socialization that occurs in both environments and that is relevant for children's academic development is literacy activities with the child (including for example

CONTACT Kenneth Hemmerechts kenneth.hemmerechts@vub.ac.be

© 2016 Educational Review

shared book reading and learning the alphabet or to write). Previous studies have shown that parental literacy activities are a crucial predictor of academic success, including reading literacy among children (Melhuish et al. 2008; Kloosterman et al. 2010), but they also made clear that this type of parental involvement is unequally distributed among the parents' socio-economic levels (van Steensel 2006).

However, in most previous studies, the relationship between socio-economic status (SES), parental literacy activities with the child and reading literacy is regarded as *static* (e.g. Park 2008). They do not study whether and how the relationship between these three elements might be different before and during primary school. This static view does not correspond to the theoretical understanding of socialization as a dynamic process. Hence, the aim of this study is to explore the relationship between these three elements. For this purpose, we will largely draw upon the Bourdieusian theory of habitus development (Wacquant 2014; Bourdieu 1984, 1990; Bourdieu and Passeron 1977). This theory is particularly relevant because it conceptualizes both processes of socialization: that of the family and that of the school environment.

According to Bourdieu, children enter the school environment after they have already experienced a specific family upbringing conditioned by the family's SES (Bourdieu 1984). This upbringing entails the development of deeply ingrained skills and attitudes (the primary habitus). Children then enter the school environment where they are also socialized: they are taught specific skills and attitudes. This socialization at school depends on the primary habitus or the skills and attitudes of the child that were already learned before the formal entry into school. The socialization at school can thus be seen as an additional development of skills and attitudes. It is the period of the formation of the secondary habitus of the child.

Using this conceptual framework, we hypothesize the following relations between SES, parental literacy activities and reading literacy. Firstly, we theorize that the relationship between SES and the extent of literacy activities is not static. Corresponding to the theoretical difference between "primary habitus" and "secondary habitus", we make a distinction between *early* and *late* parental literacy activities. Early literacy activities are here defined as those happening at home before pupils are enrolled in primary school, whereas late parental literacy activities are conceptualized as the home-based involvement during primary school age. We expect that higher SES parents will invest more in early literacy activities than lower SES parents do, because higher SES parents tend to spend more time instilling skills and attitudes before primary school begins, which then later help children to be more successful in school.

Secondly, we expect that early parental literacy involvement is related to pupils' reading literacy skills and attitudes towards reading. Studies have investigated and reported a positive association between reading literacy in primary school and literacy activities at home before the start of primary school (e.g. Hoff 2003; Kloosterman et al. 2010; Melhuish et al. 2008; Roberts, Jurgens, and Burchinal 2005). Parents or caregivers who are/were more involved in literacy activities also transmit to their children the value of reading (e.g. Rowe 1991; Lutz Klauda 2009; Baker 2003; Mullis et al. 2009).

Thirdly, due to their primary habitus and their development up to this point, children of parents with a higher SES are more likely to have a successful passage through primary school. Children of higher SES parents are more likely to have a high level of reading literacy in primary school, and the reading attitudes of the children of these parents tend to be more in line with the academic goals of the school. Children of higher SES parents tend to like

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

reading. We therefore claim that for pupils with the "correct" primary habitus and thus skills and attitudes, less parental involvement in reading literacy might be needed during primary school, because their primary habitus is better suited to the primary school environment and its academic goals. Higher SES parents thus have to interfere less in reading literacy. The reverse might be true for pupils with the "wrong" primary habitus, as they tend to lack the skills and attitudes necessary for primary school. The relationship between SES and *late* parental literacy activities is thus hypothesized to be negative.

Finally, as a corollary of the previous hypothesis, we theorize that parents adapt the extent of their *late* literacy involvement at home to the reading literacy of their children in primary school. Indeed, parents of poor performing pupils might react by doing more parental literacy activities in order to help the child. Parents of well performing pupils might react by doing less late parental literacy activities when they notice that their child does not really need their involvement in literacy activities (e.g. Sénéchal and LeFevre 2002; Silinskas et al. 2010). We expect that this adaptation of parental involvement to the reading literacy of the child exists for all SES groups. However, the primary habitus (skills and attitudes) of lower SES children tends to fit worse with the academic goals of school. They tend to have worse reading literacy than higher SES children. We therefore hypothesize that the transition of a low level of early parental literacy involvement to a high level of late parental literacy involvement (from *before* to *during* primary school) will be more likely for lower SES children and less so for higher SES children.

The theoretical rationales of these four points are further elaborated in the following sections. We will then describe the data and methodology of the empirical study used for this article and end with a discussion and conclusion.

Theory and hypotheses

Socio-economic status and early parental literacy involvement

Parental involvement can be more generally described as the "dedication of resources by the parent to the child within a given domain" (Grolnick & Slowiaczek 1994, 238; Grolnick et al. 1997, 538). An important distinction can be drawn between parental involvement in education and parental involvement in other matters unrelated to education. Moreover, parental involvement in the educational sphere can be directed to the school (e.g. contact/meetings with teachers, participating in school meetings) and/or to the home environment (e.g. helping with homework and discussing topics with the child) (Pomerantz, Moorman, and Litwack 2007).

Compared to school-based parental involvement, parental involvement at home is a more intimate or private type of involvement making it possibly appear devoid of broader social influence. This appearance can, however, be deceiving, as will be argued in the following sections, since this type of parental involvement is likely to be influenced by patterns of social stratification. It is not independent from seemingly external influences.

According to Bourdieu, children enter the school environment after they have been instilled with specific skills and attitudes by their family upbringing until that point. This upbringing produces a primary habitus that contains deeply ingrained dispositions that endure and influence later practices. It is a structure embodied in the actor that is used to perceive and classify social life. Moreover, it includes skills and attitudes and is also generative of actions (Bourdieu 1984, 1990; Lizardo 2004).

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

The upbringing in the family and thus the habitus are conditioned by SES. Scholars have also shown that parental involvement at home is unequally distributed by SES (Grolnick et al. 1997; Bradley & Corwyn 2002; Arnold and Doctoroff 2003; Guryan, Hurst, and Kearney 2008; Gershenson 2013; Buckingham, Beaman, and Wheldall 2014).

Studies on the *early home literacy environment* of children (i.e. involvement before primary school) also show the importance of socio-economic stratification. Van Steensel (2006) followed a sample of children in the Netherlands from the end of kindergarten until second grade. Although variance in home literacy characteristics existed within families with the same socio-economic background, Van Steensel observed a tendency towards a "rich home literacy environment" as the educational level of the mother increased (2006, 374). Sénéchal (2006) studied the home literacy in Canadian families whose children were around six years old (in total 90 children). She followed 65 of these children until grade four. The educational level of the parents was positively related with storybook exposure and parental teaching of the alphabet, reading and printing words at home when these children were in kindergarten (Sénéchal 2006, 72).

On the basis of the discussed literature on the relation between SES and the early home literacy environment of children, we hypothesize that

H1: Early parental literacy involvement at home (before primary school) is positively related to SES.

Early parental literacy involvement, reading attitudes and reading literacy

The primary habitus constitutes "the basis for the subsequent formation of any other habitus" (Bourdieu and Passeron 1977, 45) and is constructed by parental literacy activities. The upbringing of children instills deeply ingrained attitudes and skills that influences later life. In the early years, children with a higher SES tend to develop a habitus that helps them to be more successful in school and therefore have a higher "scholastic profitability" (Bourdieu and Passeron 1979, 17).

A crucial element of the deeply ingrained attitudes that are first instilled in the primary habitus and further developed at school are attitudes towards reading (see Lutz Klauda 2009; Rowe 1991). Parents or caregivers who are/were more involved in literacy activities transmit to their children the value of reading (Baker 2003; Mullis et al. 2009). In line with our previous hypothesis, we expect that these attitudes are socio-economically stratified. This is because early parental literacy involvement seems a bigger part of the upbringing at home of higher SES children (for example as a way of spending time with their parents). Children with positive attitudes towards reading are more likely in higher SES families because children in higher SES families experience more literacy activities. We therefore hypothesize that

H2: Attitudes towards reading (in primary school) are positively related to SES and early literacy involvement.

Not only attitudes are instilled by the upbringing at home. From a Bourdieusian perspective, we also expect that early parental literacy activities will have a positive effect on reading literacy skills. Early parental involvement is generally considered to have a major influence on later academic skills (see Hattie 2009; Wilder 2014). Studies have investigated and reported a positive association between academic skills (including reading literacy) in primary school and literacy activities at home before the start of primary school (e.g. Hoff 2003; Kloosterman

et al. 2010; Melhuish et al. 2008; Roberts, Jurgens, and Burchinal 2005). On the basis of this discussion, we hypothesize that

H3: Early parental literacy involvement is positively related to reading literacy.

Socio-economic status (SES) and late parental literacy involvement

As noted in the introduction, there is an important distinction between early parental involvement (before primary school) and late parental involvement (during primary school). This distinction echoes the difference between socialization in the family and at school. When a child starts in primary school, these two different types of socialization begin to coexist and possibly interrelate (Durkheim [1925] 1961).

Bourdieu also makes the distinction between a primary and secondary socialization of children and a corresponding primary and secondary habitus. According to Bourdieu, children enter the school environment with a specific primary habitus moulded by a previous upbringing in the family (Bourdieu 1984, 1990; Lizardo 2004). The primary habitus is thus the foundation for further socialization at school or the development of a secondary habitus. The habitus and its construction and development imply that there are chronological versions of the habitus through time. The first chronological version of the habitus has an impact on the later version of the habitus and so on:

> the habitus acquired in the family is at the basis of the structuring of school experiences …; the habitus transformed by the action of the school, itself diversified, is in turn at the basis of all subsequent experiences … and so on, from restructuring to restructuring. (Bourdieu 1992, 134)

This socialization in school therefore depends on what was learned before the formal entry of school and can be interpreted as a further development of the habitus (Bourdieu 1984, 1990; Bourdieu and Passeron 1977).

Before primary school, parents with a higher SES tend to focus more on shaping skills and instilling specific attitudes that are more in line with the academic goals of school (for example by doing early literacy activities together). Children of parents with a more privileged background are thus more likely to experience a successful passage through primary school due to their development beforehand (Bourdieu and Passeron 1979). Their habitus tends to fit better with the school environment (Hanson 1994).

We claim that the involvement in activities that directly pertain to reading literacy will be performed to a lesser extent by higher SES parents *during primary school*. This is because children of higher SES parents are more likely to have a high level of reading literacy in primary school. This is also because, on average, the reading attitudes of the children of these parents are more in line with the academic goals of the school. Children of higher SES parents tend to like reading. Their habitus is more in line with the academic goals of school that are focused on reading. Higher SES parents thus have to interfere less in skills related to reading literacy. The reverse would be true for children of lower SES parents. This is an idea that Bourdieu himself later entertained regarding explicit or what he called "visible" activities that directly relate to academic matters: he remarked that "support provided by the family takes on different forms in different milieus: the amount of explicit support (advice, explanations, etc.) perceived as such increases as social level increases (…), although it appears to decrease with a student's increased success" (Bourdieu 1998, 21). We therefore

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

expect that parents with a higher SES are less likely to perceive home intervention in reading literacy as being necessary.

We therefore hypothesize with regards to home-based parental involvement in children's literacy activities that

H4: Late parental literacy involvement at home (in primary school) is negatively related to SES.

As a corollary of this hypothesis, we theorize that parents adapt the extent of their late literacy involvement at home to the reading literacy of their children in primary school. Indeed, parents of poorly performing pupils might react by doing more parental literacy activities in order to help their child(ren). Parents of well performing pupils might react by doing fewer parental literacy activities when they notice that their child does not really need their involvement in literacy activities. Studies that specifically focus on the distribution of home-based literacy activities found a relation between the home and school environment with regards to parental involvement and academic skills. Sénéchal and LeFevre (2002) and Silinskas et al. (2010) found that children's academic skills at school seemed to have an effect on the level of involvement in literacy activities at home. Both followed a group of children before and during primary school. Sénéchal and LeFevre (2002, 1555) followed 117 children from kindergarten until the end of Grade 2 in Canada. Silinskas et al. (2010, 64) followed 207 children from kindergarten until Grade 1 in Finland. In both studies, children who did poorly at school seemed to trigger more involvement in literacy activities at home. We formulate the following hypothesis:

H5: Late parental literacy involvement is related to the reading literacy of children: it is more likely when children have poor reading literacy and less likely when children have good reading literacy.

We expect that this adaptation of parental involvement to the reading literacy of the child exists for all SES groups. However, the primary habitus (skills and attitudes) of lower SES children tends to fit worse with the academic goals of school (including those focused on reading literacy). Lower SES children tend to have worse reading literacy than higher SES children (see OECD 2010). We therefore hypothesize that the transition of a low level of early parental literacy involvement to a high level of late parental literacy involvement (from *before* to *during* primary school) will be more likely for lower SES children. We expect that that kind of transition will happen less frequently among higher SES children. We formulate the following hypothesis:

H6: The transition of a low early parental literacy involvement to a high late parental literacy involvement is more likely for children with a lower SES than for children with a higher SES.

Methods

The sample

We use survey data from the 2006 wave of the Progress in International Reading Literacy Study (PIRLS). These data contain information on the process of learning to read as well as the reading comprehension of children in 40 countries and five Canadian provinces (see Martin, Mullis, and Kennedy 2007). This includes data on reading skills and demographic information as well as on parental involvement in literacy activities at home. Unfortunately, specific questions in PIRLS 2006 on parental involvement were excluded from later PIRLS

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

surveys. We therefore focus on the latest wave of PIRLS (2006) that has information on the early and the late forms of parental literacy activities at home.

We use a data-set of Western European countries. Within the group of available Western European countries in the PIRLS data-set, we selected those with a reasonably high response (80% or higher) on the home (or parent/primary caregiver) questionnaire of the PIRLS 2006 wave. This questionnaire includes questions on the home literacy environment of children. We excluded data on the Netherlands, Britain and Spain because of a non-response of respectively 31.3, 53.2 and 37.4% on the home questionnaire.[1]

This leaves us with data collected in schools in Belgium (the Flemish and French school system), Austria, Denmark, France, Germany, Italy, Luxembourg, Norway and Sweden. Pupils in the fourth year of formal schooling were sampled (with an average age of 10.3 years). These students are expected to be "at the transition from learning to read to reading to learn" with four years of formal education in reading behind them (Martin, Mullis, and Kennedy 2007, 36). These pupils thus tend to be of the same age.

The survey used a stratified cluster design that included two stages (Appendix B in Martin, Mullis, and Kennedy 2007).[2] The PIRLS team selected schools (in total, 1774) with a probability proportional to size (i.e. the selection probability of large schools is higher than for small schools). Only schools with very few students were selected with an equal probability. Within these schools, 2653 classes in the fourth year of formal schooling were selected at random with an equal selection probability. In Luxembourg, all schools and classrooms were sampled. In total, the sample includes 47,315 students. We excluded those students without a home questionnaire providing information on the literacy activities at home (7.3% or 3445 respondents). The resulting sample, including missing values, comprises 43,870 cases.

We use multiple imputation (MI) to deal with missing values. In MI, the interrelations between the variables and the available information of cases are used to fill in (i.e. impute) the missing data. It does this with Bayesian estimation techniques (see Enders 2010). We entered all variables described in the next section into the imputation phase (including the separate involvement variables and the distinction between countries, schools and classes). We calculated 10 different imputed datasets. MI has the advantage that it can deal with item-level non-response. This is advantageous because we have different early and late involvement items with missingness that we want to combine into two separate indices (an early and late involvement index). In total, 35,993 of the remaining students, or 82% of our sample, have no missing values on any of the independent variables (gender, parental educational level, non-native background and language at home). Thus, 39,597 of 43,870 students, or 90.3%, have no missing value on any outcome variable (early or late involvement in literacy activities at home and attitudes towards reading). The data on reading literacy have no missing values. With the use of multiple imputation, we get a sample of 43,870 students in 2639 classes and 1770 schools.

Variables

We use four outcome variables in this article (see Table 1 for all variables). The first outcome variable is *early parental literacy involvement*, measured as parents' involvement in literacy activities with children before first grade (ISCED level 1). It measures whether a parent or a caregiver that takes up that role by doing literacy activities with the child is involved in different activities. Respondents were asked the following question in the parent/primary

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

Table 1. Descriptive statistics: frequency, range, percentages, pooled means, standard deviations and percentage imputed.

Variables	*N*	Range	Pooled mean or % (standard deviation)	% imputed
1. Female gender of the child	43,870	0–1	50%	0.7%
2. Parental education				7.8%
Some primary, lower-secondary (finished or not) or no schooling	43,870	0–1	19.56%	7.8%
Finished upper-secondary	43,870	0–1	31.22%	7.8%
Finished post-secondary or university or higher	43,870	0–1	49.22%	7.8%
3. Instruction language as home language	43,870	0–1	65%	8.5%
4. Non-native background of the child	43,870	0–1	30.7%	4.9%
5. Attitudes towards reading				
High attitudes	43,870	0–1	49.56%	2.6%
Medium attitudes	43,870	0–1	40.81%	2.6%
Low attitudes	43,870	0–1	9.63%	2.6%
6. Early literacy involvement				
Reading books	43,870	0–2	1.50 (0.6)	1.6%
Telling stories	43,870	0–2	1.41 (0.6)	1.4%
Singing songs	43,870	0–2	1.34 (0.7)	1.9%
Playing with ABC toys	43,870	0–2	1.04 (0.7)	1.7%
Playing word games	43,870	0–2	1.02 (0.7)	2.1%
Writing letters or words	43,870	0–2	1.23 (0.7)	1.7%
Reading aloud signs and labels	43,870	0–2	1.20 (0.7)	2%
7. Early literacy involvement scale (Z-score$_{early}$)	43,870	−3.15–1.89	0 (1)	5.2%
8. Late literacy involvement				
Listening to the child reading aloud	43,870	0–3	2.00 (0.9)	1.3%
Talking on his/her reading	43,870	0–3	2.04 (0.8)	1.6%
Discussing classroom reading	43,870	0–3	2.04 (0.9)	1.5%
Helping with reading for school	43,870	0–3	1.92 (1.1)	1.5%
9. Late literacy involvement scale (Z-score$_{late}$)	43,870	−2.95–1.47	0 (1)	3.2%
10. Difference between late and early involvement (Z-score$_{late}$ − Z-score$_{early}$)	43,870	−4.84–4.62	0 (1.18)	7.4%
11. Reading literacy achievement				
PV1	43,870	226.2–780.7	539.9 (67.5)	0%
PV2	43,870	261.6–780.1	539.6 (68)	0%
PV3	43,870	208.4–787.1	539.5 (67.6)	0%
PV4	43,870	195.6–788.3	539.4 (67.8)	0%
PV5	43,870	115.7–797.2	539.8 (67.7)	0%

Note: PV, plausible value; unweighted data; imputed values.

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

caregiver questionnaire: "Before your child began the first grade, how often did you or someone else in your family do the following activities with him or her?" Seven of the following activities deal with language and literacy activities at home: "read books, tell stories, sing songs, play with alphabet toys (for example, blocks with letters of the alphabet), play word games, write letters or words and read aloud signs and labels" (Foy and Kennedy 2008, 27). Answer categories are often, sometimes and never or almost never. The questions were combined into one index going from 0 to 2 (from never or almost never to often) by summing the scores of the items and dividing by the number of items (7). The mean of this scale was 1.25 (standard deviation = 0.4). We standardized the scale on the student level.[3] The range of Cronbach alpha values calculated in a categorical principal component analysis with the variables analysed as ordinal for each country separately is 0.66 (Germany)–0.73 (Sweden).[4]

The second outcome variable is *late parental literacy involvement*, which measures parental involvement in literacy activities with children in the fourth year of formal schooling. The following questions of the parent/primary caregiver questionnaire measure this type of home-based involvement: "how often do you or someone else in your home … listen to your child read aloud?", "(…) talk with your child about what he/she is reading on his/her own?", "(…) discuss your child's classroom reading work with him/her?", "(…) help your child with reading for school?" (Foy and Kennedy 2008, 34). Answer categories were every day or almost every day; once or twice a week; once or twice a month; never or almost never. These questions were also combined into one index ranging from 0 to 3 (from never to every day or almost every day) by summing the scores of the items and dividing by the number of items (4). We standardized the scale on the student level. The mean of this scale was 2 (standard deviation = 0.7). The range of Cronbach alpha values calculated in a categorical principal component analysis with the variables analysed as ordinal for each country separately is 0.69 (Norway)–0.79 (Belgium (Flanders)) with four items.[5] We use a compository logic to construct the involvement scales. In this compository logic, the researcher summarizes different variables because they complement each other conceptually, not because they overlap empirically. As Welzel notes: "elements are seen in this perspective as "components" that cover separate domains in the definitional range of an overarching construct. (…) Unique variation among elements is not defined as measurement error but simply as complementary parts of variation, each of which contributes to the completion of the construct" (2014: 60).

The third outcome variable is the reading literacy test of PIRLS. The children were not overburdened and only completed a limited set of test blocks. PIRLS uses item response theory and multiple imputation to produce five plausible values for the whole reading literacy test (see Mullis et al. 2007, 306). We also standardized the five plausible variables on the student level in the multivariate analysis so they have a mean of zero and a standard deviation of one. Analyses that use these variables were repeated for each plausible value (five times) and for each imputation. Results were then pooled: the parameter estimates were averaged and the significances were checked.

The reading literacy test of PIRLS 2006 is not directly measuring previous academic achievement. It measures a general ability for reading literacy with the use of item response theory that classifies children into higher- or lower-ability students; however, we argue that the reading literacy test information can be interpreted as a proxy variable for previous achievement. Although reading literacy ability is definitely not stable, it does not change radically but *tends* to grow cumulatively. On average (with the exception of children with reading problems), children who have a high (or low) ability in reading literacy do not suddenly and abruptly digress or advance to a *radically* lower or higher ability. On average, they *tend* to stay in the same ability range.

The last outcome variable is the index on attitudes of students toward reading. We use an index that was made by the PIRLS 2006 team and that is used in their reports. The use of this index increases the comparability of this study with other research using the PIRLS reading attitude index (e.g. Mullis et al. 2007). PIRLS calculated this index based on the following questions: "I read only if I have to", "I like talking about books with other people", "I would be happy if someone gave me a book as a present", "I think reading is boring" and "I enjoy reading". The PIRLS team averaged the question scores. An average score greater than

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

three is a high score (0). An average score of two to three is a medium score (1). An average score of one to less than two is a low score (2).

We also calculated a variable that measures the extent that children tend to experience less or more late involvement than early involvement. We subtracted the standardized values of the early parental involvement variable from the standardized values of the late parental involvement variable.[6] A positive score indicates that the standardized score of the late involvement variable is *higher* than the standardized score of the early involvement variable. A negative score indicates that the standardized score of the late involvement variable is *lower* than the standardized score of the early involvement variable. A score of zero indicates that the standardized scores of the early and late involvement variable are the same.

We include the following independent variables in our analysis: gender, non-native background, the language spoken at home, highest level of education of the parent(s) but also reading literacy or early literacy activities. *Gender* is coded as 0 (male) and 1 (female). In the student questionnaire, the students were asked whether the mother and the father were born in the country where the survey was conducted. The PIRLS team used these questions to construct a variable that indicates the *number of parents with a non-native background* (see Foy and Kennedy 2008, 4). Three possibilities exist: neither, either or both of the parents have a non-native background. We dichotomized this variable (0 = native background, 1 = non-native background). We also include a variable that measures how often the *language of instruction* at school is spoken at home (0 = never or sometimes spoken at home, 1 = always spoken at home). SES will be operationalized as the highest educational level of the father (or stepfather/male guardian) and mother (stepmother/female guardian). Both questions were asked in the home questionnaire. The different levels are: "finished post-secondary or university or higher" (2), "finished upper-secondary" (1), "some primary/lower secondary education (finished or not) or no schooling" (0) (Foy and Kennedy 2008, 3). These categories indicate a low, medium and high level of parental education. We use parental education as the measure of SES because it is one of the most stable aspects of SES: "it is typically established at an early age and tends to remain the same over time" (Sirin 2005, 419). The *reading literacy scores* of PIRLS 2006 were also used as an independent variable.[7]

Research procedures

In order to account for the nested character of our data, we use multilevel model specifications (with robust maximum likelihood estimation) (Heck and Thomas 2015).

We estimate five random intercept linear regression models with students (*i*) nested in schools (*j*) in the models on reading literacy, early and late parental involvement with *n* covariates. Country (*k*) is estimated as a fixed effect. We model the fact that students in schools are in different countries as a fixed effect for two reasons: (a) we only have 10 possible values for this variable (see Stegmueller 2013 on this issue). As the selection of countries in the PIRLS study is not random, we do not use random country effects. (b) The unobserved heterogeneity at the country level (for example because of different socio-economic national compositions or educational systems) is taken into account by using country fixed effects (Allison 2009; see also Bol et al. 2014). There are nine country dummies (*D*) in each model. We do not model the school or country level with independent variables because we do not test hypotheses that are specified on those levels. We do, however, take into account the

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

nesting of students on the country and school levels and have a school level variance u_{0j} and an error term e_{ij}. The form of the equation used is

$$Y_{ij} = \gamma_{00} + \beta_1 x_{1ij} + ... + \beta_n x_{nij} + \sum_{k=k-1} \beta_x D_k + e_{ij} + u_{0j}$$

We also use a random intercept multinomial logistic regression model to relate class membership in one of the three categories (*c*) of reading attitudes (low, medium or high) with early parental involvement (Heck and Thomas 2015). In this form of model, the cumulative probabilities of the categories of the outcome are estimated. The sum of these probabilities equals one. Consequently, modelling 3 – 1 categories is sufficient to know all probabilities. The excluded category is the reference category (*C*). A multilevel multinomial logistic regression models the log odds of outcome *c* relative to this reference category (*C*) for individual *i* in school *j* (η_{cij}). Because our dependent variable has three categories, two series of log odds coefficients will be estimated. The form of the equations for 2 categories and *n* covariates (and fixed country effects) is

$$\eta_{cij} = ln\left(\frac{\pi_{cij}}{\pi_{Cij}}\right) = \beta_{o(c)} + \beta_{1(c)} x_{1ij} + ... + \beta_{n(c)} x_{nij} + \sum_{k=k-1} \beta_x D_k + u_{j(c)}$$

The data was weighted to account for the school and within school sample design (see Martin, Mullis and Kennedy 2007; Foy and Kennedy 2008, 39). The weight addresses the selection probability of students in schools as well as non-response. We use a weight of which the sums of weights correspond to the sample sizes of each country (called HOUWGT in the PIRLS data-set). The data were analysed with SPSS 21 (for data description and preparation) and Mplus 7.3 (for multilevel analyses).

Results

In this section, we use multilevel model specifications to test our hypotheses.[8] In Model 1 of Table 2, we examine effects on early parental literacy involvement (as a standardized score). It is clear that parental education is significantly related to early parental involvement (controlling for background variables). When the level of education of parents increases, the level of early parental involvement increases also. For children with parents who finished upper-secondary, the level of early involvement increases on average by 0.16 standard deviation (or an average increase of 0.06 (= multiplying the standard deviation of the early involvement scale (0.4) with (0.16)) compared with children with low-educated parents. For children with parents who finished post-secondary, university or higher, the level of early involvement increases on average by 0.34 standard deviation compared with children with low-educated parents (or an average increase of 0.14 (= 0.4 × 0.34)).

In the multinomial logistic model (with low reading attitude as the reference category and with control variables included) in Table 3, Model 1a and 1b, we notice that the odds for having high reading attitudes over low reading attitudes with an increase of one standard deviation of the level of early literacy involvement is 1.37 ($e^{0.312}$) on average. Thus, the relative probability or odds of having high rather than low reading attitudes is 37% higher with an increase of one standard deviation of the early literacy variable. The odds for having medium reading attitudes over low reading attitudes with an increase of one standard deviation of

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

Table 2. Two-level linear regression models with fixed country effects: parameters and standard errors (10 imputed datasets).

	Model 1 (Z-score$_{\text{early involvement}}$)[a]	Model 2 (Z-score$_{\text{late involvement}}$)[b]	Model 3 (Z-score$_{\text{late involvement}}$)	Model 4 (Z-score$_{\text{reading literacy}}$)[c]	Model 5 (Z-score$_{\text{late}}$ – Z-score$_{\text{early}}$)[d]
Fixed effects					
Early literacy involvement	–	–	–	0.112 (0.005)***	–
Parental education (Ref. cat. = some primary, lower-secondary (finished or not) or no schooling)					
Finished upper-secondary	0.156 (0.019)***	−0.093 (0.018)***	−0.032 (0.018)	0.301 (0.015)***	−0.137 (0.020)***
Finished post-secondary, university or higher	0.340 (0.019)***	−0.220 (0.017)***	−0.098 (0.017)***	0.606 (0.016)***	−0.334 (0.020)***
Female gender of the child	0.190 (0.011)***	0.026 (0.011)*	0.048 (0.011)***	0.101 (0.010)***	−0.124 (0.013)***
Non-native background of the child	−0.104 (0.015)***	0.054 (0.014)***	0.005 (0.014)	−0.244 (0.014)***	0.069 (0.015)***
Instruction language as home language	0.030 (0.015)*	−0.024 (0.016)	−0.005 (0.016)	0.100 (0.014)***	−0.020 (0.017)
Reading literacy	–	–	−0.178 (0.006)***	/	−0.313 (0.007)***
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Intercept	−0.637 (0.029)***	−0.182 (0.033)***	−0.266 (0.032)***	−0.375 (0.023)***	0.308 (0.032)***
Random effects					
Level-two residual	0.022	0.038	0.036	0.112	0.034
Level-one residual	0.922	0.888	0.865	0.687	1.127

Notes: Weighted coefficients.
Two-tailed significance test.
[a]In an empty model, the first-level residual is 0.05 and the second-level residual is 0.95.
[b]In an empty model, the first-level residual is 0.1 and the second-level residual is 0.9.
[c]In an empty model, the first-level residual is 0.2 and the second-level residual is 0.8.
[d]In an empty model, the first-level residual is 0.1 and the second-level residual is 1.2.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Table 3. Two-level multinomial logistic regression model with fixed country effects of reading attitudes: log odds and standard errors (10 imputed datasets).

	Model 1a (High versus low reading attitudes)	Model 1b (Medium versus low reading attitudes)
Fixed effects		
Early literacy involvement	0.312 (0.021)***	0.097 (0.020)***
Parental education (Ref. cat. = some primary, lower-secondary (finished or not) or no schooling)		
Finished upper-secondary	0.296 (0.068)***	0.147 (0.068)*
Finished post-secondary, university or higher	0.858 (0.062)***	0.362 (0.060)***
Female gender of the child	1.335 (0.048)***	0.616 (0.046)***
Non-native background of the child	−0.095 (0.053)	0.032 (0.050)
Instruction language as home language	−0.113 (0.060)	−0.072 (0.059)
Reading literacy	–	–
Country fixed effects	Yes	Yes
Intercept	−0.152 (0.094)	0.688 (0.085)***
Random effects		
Level-two residual	0.210	0.040
Level-one residual	–	–

Note: Weighted coefficients.
$^{*}p < 0.05$;; $^{**}p < 0.01$; $^{***}p < 0.001$.
Two-tailed significance test.

the level of early literacy involvement is 1.10 ($e^{0.097}$) on average. The relative probability of having medium rather than low reading attitudes is 10% higher with an increase of one standard deviation of the early literacy variable. We also focus on the relation between parental educational level and reading attitudes. The odds that a child with parents who finished upper-secondary school has high reading attitudes over low reading attitudes is 1.34 ($e^{0.296}$) times the odds for children with parents with a low educational level, on average. The relative probability of having high rather than a low reading attitude is 34% higher for children with high-educated parents than for children with low-educated parents. The odds that a child with parents who finished post-secondary, university or higher has high reading attitudes over low reading attitudes is 2.36 ($e^{0.858}$) times the odds for children with parents with a low educational level, on average (thus, the relative probability is 136%).

In Model 2 in Table 2, the effect of parental education on the late form of involvement (also standardized) is significant, but *negative*. This means that it is more likely that children with a low-educated parental background experience high levels of late involvement in literacy activities (controlling for background variables). With low parental education as the reference category, the level of late involvement decreases by −0.09 standard deviation for children (or −0.06 (= −0.09 × 0.7)) with parents who finished upper-secondary education, and −0.22 standard deviation (or −0.15 (= −0.22 × 0.7)) for children with parents who finished post-secondary, university or higher.

In Table 2, we see in Model 4 that early parental involvement in literacy activities is positively related to reading literacy (controlling for background variables). An increase of one standard deviation of the early parental involvement variable (namely 0.4) results in an increase of 0.11 standard deviation of reading literacy (or an average increase of 7.5 (68 × 0.11)). We also see that children with parents with a high SES have higher reading literacy.

In Model 3 of Table 2, we see that the level of late involvement decreases by −0.18 standard deviation when reading literacy (or an average decrease of −0.13 (= −0.18 × 0.7) increases

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

with one standard deviation (this means 68). We also see that the effects of SES on late involvement diminish. As hypothesized, reading literacy explains a part of these effects.

In Model 5 in Table 2, we model the difference between the standardized levels of late and early involvement. We see that reading literacy is negatively associated with the difference between the standardized late and early involvement variables: when reading literacy increases by one standard deviation (this means 68), the difference between the standardized values of late and early involvement decreases by −0.31. A negative parameter indicates that the standardized values of the early involvement variable are higher than the standardized values of the late involvement variable when the level of reading literacy is higher. We also see that a high level of parental education has a negative relation with the difference between the standardized late and early involvement variables (a parameter estimate of −0.14 for children with medium educated parents and −0.33 for children with high-educated parents).

It is noteworthy that parents did not know the (range of the plausible) values of the PIRLS reading literacy test. The questions on literacy involvement were asked in the parent/primary caregiver questionnaire.

Discussion and conclusion

This article focused on home-based parental involvement in children's literacy activities, including its stratification in 10 European educational systems.

We found a positive relation between early involvement in literacy activities (before primary school) and reading literacy and parental education. Children from a family with a low SES experience the late type of involvement in literacy activities more than children with a high SES (hypotheses H1, H3 and H4).

We also saw that positive attitudes towards reading are more likely for children in higher SES families and who experienced a high level of early literacy involvement (H2). Late parental literacy involvement is also related to the reading literacy of children: it is more likely when children have poor reading literacy and less likely when children have good reading literacy (H5). The transition of a low early parental literacy involvement to a high late parental literacy involvement is more likely for children with a lower SES than for children with a higher SES (H6). Those children who experience more late than early involvement also have lower reading literacy. Taking into account that early involvement has a positive relationship with reading literacy, this supports the idea of an adjustment of parental involvement to the level of academic skills of the child.

This article showed that further research should continue to focus on the evolution of the relation between background characteristics of parents and the school setting. Home-based parental involvement in literacy and language activities is socially stratified and not independent from external influences. We have also shown that the level of parental education tends to have an enduring influence on parental involvement.

Besides being of theoretical importance, this article is also relevant from a policy perspective. Research has shown that in educational systems with central examinations (including standardization), the effect of parental education on achievement for students around the age of 15-years-old is less strong (Bol et al. 2014). We argue on the basis of this article that the children's academic achievement in primary school might also be a guide for parents in terms of how involved they become in the educational sphere. The results of tests in

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

primary school might offer an incentive for more or less parental involvement. We thus argue that especially for children who tend to achieve less at school, a continuing development and implementation of a standardized testing of achievement might be beneficial.

A number of limitations of this article can be identified. The PIRLS data is cross-sectional. Ideally, one would want to use longitudinal data, however, such data do not exist. We used the best European (cross-sectional) data available. Future research should also include more dimensions of SES besides parental educational level. The data is also only focused on parental involvement before primary school and in the fourth grade.

This article showed that further research should focus on the socially stratified evolution of the relation between background characteristics of parents and the school setting.

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

Notes

1. Non-response of the other countries: 3% in Belgium (Flanders), 9.6% in Belgium (Wallonia), 4% in Austria, 6.2% in Denmark, 7.3% in France, 13% in Germany, 3.7% in Italy, 7.6% in Norway, 7.1% in Luxembourg and 6.4% in Sweden. No data on Switzerland available.
2. Before selecting schools and classes, the research areas in the countries were stratified according to so-called "explicit" stratification variables: school type (in Belgium and Sweden), region (in Austria), state (in Germany), student characteristics (Norway), school size (in France), urbanization (in Luxembourg) and school finance (in Norway). In these "explicit" strata, there was a sorting according to "implicit" strata: region (in Belgium, Austria, Italy and Germany), school type (in France and Germany), urbanization (in Italy), school finance and student characteristics (in Norway). There was no implicit stratification in Luxembourg or explicit stratification in Italy. Within these implicit strata there was a distinction according to a measure of size of the schools. No schools that educate children with special needs, special schools or very small schools were included. Students with a disability and who could not speak the language of instruction were excluded.
3. For each student: (value of the scale – grand mean of the scale)/standard deviation of the scale.
4. Weighted analysis excluding the cells in the data frame with missing data.
5. Idem ditto.
6. Graphical inspections of the early and late involvement variable show resemblances to the normal distribution. We do not report Kolmogorov–Smirnov or Shapiro–Wilk tests of normality: the large sample size would report small deviations from normality as significant departures from normality.
7. A comparison between the listwise and imputed values shows that the mean reading literacy declines for the imputed data-set. Imputing the data includes more children with a relatively low SES and non-native background.
8. Regression diagnostics for the full models of reading literacy, early and late parental involvement and the transition between early and late involvement were good: we plotted the conditional residuals with the conditional predicted values and Q-Q plots of the conditional residuals for each imputed data-set; variance inflation factors were also calculated. We also checked for the multivariate linearity of the relationships between the variables with the transformation plot of non-linear principal components analysis.

Disclosure statement

No potential conflict of interest was reported by the authors.

ORCID

Orhan Agirdag http://orcid.org/0000-0002-5508-1501

References

Allison, P. 2009. *Fixed Effects Regression Models*. London: Sage.

Arnold, D. H., and G. L. Doctoroff. 2003. "The Early Education of Socio-Economically Disadvantaged Children." *Annual Review of Psychology* 54: 517–545.

Baker, L. 2003. "The Role of Parents in Motivating Struggling Readers." *Reading & Writing Quarterly* 19 (1): 87–106.

Bol, T., J. Witschge, H. Van de Werfhorst, and J. Dronkers. 2014. "Curricular Tracking and Central Examinations: Counterbalancing the Impact of Social Background on Student Achievement in 36 Countries." *Social Forces* 92 (4): 1545–1572.

Bourdieu, P. 1984. *Distinction*. London: Routledge.

Bourdieu, P. 1990. *The Logic of Practice*. Cambridge: Polity Press.

Bourdieu, P. 1992. *An Invitation to Reflexive Sociology*. Cambridge: Polity Press.

Bourdieu, P. 1998. *The State Nobility*. Stanford: Stanford University Press.

Bourdieu, P., and J. C. Passeron. 1977. *Reproduction in Education, Society and Culture*. London: Sage.

Bourdieu, P., and J. C. Passeron. 1979. *The Inheritors. French Students and Their Relation to Culture*. Chicago, IL: University of Chicago Press.

Bradley, R. H., and R. F. Corwyn 2002. "Socioeconomic Status and Child Development." *Annual Review of Psychology* 53: 371–99.

Buckingham, J., R. Beaman, and K. Wheldall. 2014. "Why Poor Children Are More Likely to Become Poor Readers: The Early Years." *Educational Review* 66 (4): 428–446.

Corsaro, W. 2010. *The Sociology of Childhood*. London: Sage.

Durkheim E. [1925]1961. *Moral Education*. New York & London: The Free Press.

Enders, C. 2010. *Applied Missing Data Analyses*. New York: Guilford Press.

Foy, P., and A. M. Kennedy. 2008. *International Version of the PIRLS 2006 Background and Curriculum Questionnaires*. Boston, MA: IEA.

Gershenson, S. 2013. "Do Summer Time-Use Gaps Vary by Socio-Economic Status?" *American Educational Research Journal* 50 (6): 1219–1248.

Grolnick, W. S., C. Benjet, C. O. Kurowski, and N. H. Apostoleris. 1997. "Predictors of Parent Involvement in Children's Schooling." *Journal of Educational Psychology* 89 (3): 538–548.

Grolnick, W. S., and M. L. Slowiaczek. 1994. "Parents' Involvement in Children's Schooling: A Multidimensional Conceptualization and Motivational Model." *Child Development* 65 (1): 237–252.

Guryan, J., E. Hurst, and M. Kearney. 2008. "Parental Education and Parental Time with Children." *Journal of Economic Perspectives* 22 (3): 23–46.

Hanson, S. 1994. "Lost Talent: Unrealized Educational Aspirations and Expectations among U.S. Youth." *Sociology of Education* 67 (3): 159–183.

Hattie, J. 2009. *Visible Learning: A Synthesis of over 800 Meta-Analyses Relating to Achievement*. London: Routledge.

Heck, R. H., and S. L. Thomas. 2015. *An Introduction to Multilevel Modeling Techniques: MLM and SEM Approaches Using Mplus*. London: Routledge.

Hoff, E. 2003. "The Specificity of Environmental Influence: Socioeconomic Status Affects Early Vocabulary Development via Maternal Speech." *Child Development* 74 (5): 1368–1378.

Hornby, G., and R. Lafaele. 2011. "Barriers to Parental Involvement in Education: An Explanatory Model." *Educational Review* 63 (1): 37–52.

Horvat, E. M., E. B. Weininger, and A. Lareau. 2003. "From Social Ties to Social Capital: Class Differences in the Relations between Schools and Parent Networks." *American Educational Research Journal* 40 (2): 319–351.

Kloosterman, R., N. Notten, J. Tolsma, and G. Kraaykamp. 2010. "The Effects of Parental Reading Socialization and Early School Involvement on Children's Academic Performance: A Panel Study of Primary School Pupils in the Netherlands." *European Sociological Review* 27 (3): 291–306.

Lareau, A. 2002. "Invisible Inequality: Social Class and Childrearing in Black Families and White Families." *American Sociological Review* 67 (5): 747–776.

Lareau, A. 2003. Unequal Childhoods: Class, Race, and Family Life. Berkeley, CA: University of California Press.

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

Lizardo, O. 2004. "The Cognitive Origins of Bourdieu's Habitus." *Journal for the Theory of Social Behavior* 34 (4): 375–401.
Lutz Klauda, S. 2009. "The Role of Parents in Adolescents' Reading Motivation and Activity." *Educational Psychology Review* 21 (4): 325–363.
Martin M. O., I. V.Mullis, & A. M. Kennedy 2007. *Progress in International Reading Literacy Study PIRLS: PIRLS 2006 Technical Report*. Boston, MA: IEA.
Melhuish, E. C., M. B. Phan, K. Sylva, P. Sammons, I. Siraj-Blatchford, and B. Taggart. 2008. "Effects of the Home Learning Environment and Preschool Center Experience upon Literacy and Numeracy Development in Early Primary School." *Journal of Social Issues* 64 (1): 95–114.
Mullis, I., M. O. Martin, A. Kennedy, P. Foy, 2007. *PIRLS 2006 International Report*. Boston, MA: IEA.
Mullis, I., M. Martin, A. Kennedy, K. Trong, and M. Sainsbury. 2009. *Pirls 2011 Assessment Framework*. Boston, MA: IEA.
OECD. 2010. *PISA 2009 Results: Overcoming Social Background. Equity in Learning Opportunities and Outcomes*. Paris: OECD.
Park, H. 2008. "Home Literacy Environments and Children's Reading Performance: A Comparative Study of 25 Countries." *Educational Research and Evaluation* 14 (6): 489–505.
Pomerantz, E. M., E. A. Moorman, and S. D. Litwack. 2007. "The How, Whom, and Why of Parents' Involvement in Children's Schooling: More is Not Necessarily Better." *Review of Educational Research* 77: 373–410.
Roberts, J., J. Jurgens, and M. Burchinal. 2005. "The Role of Home Literacy Practices in Preschool Children's Language and Emergent Literacy Skills." *Journal of Speech Language and Hearing Research* 48: 345–359.
Rowe, K. 1991. "The Influence of Reading Activity At Home on Students' Attitudes Towards Reading, Classroom Attentiveness and Reading Achievement: An Application of Structural Equation Modelling." *British Journal of Educational Psychology* 61 (1): 19–35.
Sénéchal, M. 2006. "Testing the Home Literacy Model: Parent Involvement in Kindergarten is Differentially Related to Grade 4 Reading Comprehension, Fluency, Spelling, and Reading for Pleasure." *Scientific Studies of Reading* 10 (1): 59–87.
Sénéchal, M., and J. A. LeFevre. 2002. "Parental Involvement in the Development of Children's Reading Skill: A Five-Year Longitudinal Study." *Child Development* 73 (2): 445–460.
Silinskas, G., U. Leppänen, K. Aunola, R. Parrila, and J. E. Nurmi. 2010. "Predictors of Mothers and Fathers' Teaching of Reading and Mathematics in Kindergarten and Grade 1." *Learning and Instruction* 20 (1): 61–71.
Sirin, S. R. 2005. "Socioeconomic Status and Academic Achievement: A Meta-Analytic Review of Research." *Review of Educational Research* 75 (3): 417–453.
Stegmueller, D. 2013. "How Many Countries for Multilevel Modeling? A Comparison of Frequentist and Bayesian Approaches." *American Journal of Political Science* 57 (3): 748–761.
van Steensel, R. 2006. "Relations between Socio-Cultural Factors, the Home Literacy Environment and Children's Literacy Development in the First Years of Primary Education." *Journal of Research in Reading* 29 (4): 367–382.
Wacquant, L. 2014. "Homines in Extremis: What Fighting Scholars Teach Us about Habitus." *Body & Society* 20 (2): 3–17.
Welzel, C. 2014. *Freedom Rising: Human Empowerment and the Quest for Emancipation*. Cambridge: Cambridge University Press.
Wilder, S. 2014. "Effects of Parental Involvement on Academic Achievement: A Meta-Synthesis." *Educational Review* 66 (3): 377–397.

Downloaded by [UVA Universiteitsbibliotheek SZ] at 06:35 21 April 2016

View publication stats

ResearchGate

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/305522086

Improving Teacher Perceptions of Parent Involvement Patterns: Findings From a Group Randomized Trial

Article *in* School Psychology Quarterly · July 2016

DOI: 10.1037/spq0000169

CITATIONS
3

READS
72

2 authors:



Keith Herman
University of Missouri
121 PUBLICATIONS **2,325** CITATIONS
SEE PROFILE



Wendy M Reinke
University of Missouri
94 PUBLICATIONS **1,855** CITATIONS
SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Links between academic and social competence, likeability, and child depression. View project



Development and Validation of the Direct Behavior Rating - Classroom Management View project

All content following this page was uploaded by Keith Herman on 02 September 2016.

The user has requested enhancement of the downloaded file.

School Psychology Quarterly

Improving Teacher Perceptions of Parent Involvement Patterns: Findings From a Group Randomized Trial

Keith C. Herman and Wendy M. Reinke

Online First Publication, July 21, 2016. http://dx.doi.org/10.1037/spq0000169

CITATION

Herman, K. C., & Reinke, W. M. (2016, July 21). Improving Teacher Perceptions of Parent Involvement Patterns: Findings From a Group Randomized Trial. *School Psychology Quarterly*. Advance online publication. http://dx.doi.org/10.1037/spq0000169

School Psychology Quarterly
© 2016 American Psychological Association
1045-3830/16/$12.00 http://dx.doi.org/10.1037/spq0000169

Improving Teacher Perceptions of Parent Involvement Patterns: Findings From a Group Randomized Trial

Keith C. Herman and Wendy M. Reinke
University of Missouri

For children with the most serious and persistent academic and behavior problems, parent involvement in education, particularly teacher perceptions of involvement, is essential to avert their expected long-term negative outcomes. Despite the widespread interest in and perceived importance of parent involvement in education, however, few experimental studies have evaluated programs and practices to promote it. In this group randomized trial, we examined the effects of the Incredible Years Teacher Classroom Management program (IY TCM) on teacher perceptions of contact and comfort with parents. One hundred five classrooms with 1818 students were randomly assigned to an IY TCM or to a control, business as usual condition. Measures of key constructs included teacher ratings of parent and student behaviors, direct observations in the classroom, and a standardized academic achievement test. Latent transition analysis (LTA) was used to identify patterns of involvement over time and to determine if intervention condition predicted postintervention patterns and transitions. Four patterns of involvement were identified at baseline and at follow-up; parents of students with academic and behavior problems were most likely to be in classes with the least adaptive involvement patterns. Intervention status predicted group membership at follow-up. Specifically, intervention classroom parents were significantly more likely to transition to more adaptive teacher-rated parenting profiles at follow-up compared to control classroom parents. This is the first randomized trial we are aware of that has found that teacher training can alter teacher perceptions of parent involvement patterns. Clinical implications for students with behavior and academic problems are discussed.

Keywords: parent involvement, teacher–parent relationships, student outcomes, LTA

Supplemental materials: http://dx.doi.org/10.1037/spq0000169.supp

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

For students with the most serious and persistent academic and behavior problems, parent involvement is essential to avert their expected long-term negative outcomes (Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005). Although the pathway to serious antisocial behavior and academic failure is often set in motion by coercive parent–child interactions, the transition to elementary school represents a crucial developmental opportunity for interrupting the negative cascade of social and academic outcomes that typically occurs for these children (Patterson, Reid, & Dishion, 1992). Children at high risk for antisocial behavior often develop poor relations with teachers and receive less support and instruction and more criticism in the classroom (Arnold, Griffith, Ortiz, & Stowe, 1998; Campbell & Ewing, 1990; Carr, Taylor, & Robinson, 1991). In turn, these children are often rejected by their teachers and well-adjusted peers over the course of elementary school and fail to develop the "survival skills" necessary for academic and social success (Kellam, Rebok, Ialongo, & Mayer, 1994). Eventually, according to Patterson et al. (1992), these children are likely to drift into a deviant peer group where

Keith C. Herman and Wendy M. Reinke, Department of Educational, School, & Counseling Psychology, University of Missouri.

The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305A100342 to the University of Missouri (PI: Wendy Reinke). The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education.

Correspondence concerning this article should be addressed to Keith C. Herman, Department of Educational, School, & Counseling Psychology, University of Missouri, Columbia, MO 65211. E-mail: hermanke@missouri.edu

antisocial behavior and academic failure are reinforced.

Teachers of students with severe behavior and academic problems often develop negative perceptions not only of the students but also of their families (Stormont, Herman, Reinke, David, & Goel, 2013). Teacher perceptions are especially important given that teacher beliefs about parents, regardless of their accuracy, may influence their interactions with parents and their children (Henderson & Berla, 1997; McCoach et al., 2010; McDermott & Rothenberg, 2000). For instance, it is likely that teachers interact differently with parents whom they perceive as committed and interested in their child's education compared with parents whom they perceive as less involved in learning (Henderson & Berla, 1997; McDermott & Rothenberg, 2000). These perceptions in turn influence parents' ability, willingness, and motivation to participate in education (see Herman et al., 2012). Not surprisingly, families from disadvantaged backgrounds and those with children with the highest service needs have the lowest level of school participation (El Nokali, Bachman, & Votruba-Drzal, 2010; Park, Pullis, Reilly, & Townsend, 1994).

Teacher Perceptions of Parent Involvement

Teacher perceptions of parent involvement patterns have been found to be especially important predictors of student outcomes (Bakker, Denessen, & Brus-Laeven, 2007; Barnard, 2004). For instance, using a sample of 1,165 students from the Chicago Longitudinal study, Barnard (2004) found that only teacher ratings of parent involvement in elementary school predicted student outcomes in high school. Controlling for background characteristics, elementary students of higher versus lower participating parents were less likely to drop out and more likely to graduate from high school. Specifically, students whose parents were rated by teachers as having average or better participation for three or more years were 96% more likely to graduate from high school than students of parents never rated as having average or better participation. Parent ratings of their own involvement were largely unrelated to student outcomes in high school. Bakker et al. (2007) reported similar findings about the predictive power of teacher versus parent perceptions of involvement in an elementary sample from the Netherlands. Other authors have found teacher perceptions of parent involvement in early grades predict student achievement in later elementary school (Izzo et al., 1999) and reading achievement, grade retention, and special education status in eighth grade (Miedel & Reynolds, 2000), even after controlling for a host of known correlates of academic success.

Teacher ratings of parent involvement commonly focus on the amount of contact parents have with school personnel (e.g., attending meetings, volunteering, and visiting the school). A second equally important aspect of teacher perceptions is their comfort with parents (Miller-Johnson & Maumary-Gremaud, 1995). Comfort, sometimes called "bonding" or "alliance," refers to the quality of the relationship, not just the frequency of contact. In particular, teacher comfort with parents includes how aligned the teacher perceives the parent's goals and values to be with his or her own (Miller-Johnson & Maumary-Gremaud, 1995).

Although most studies have examined levels of contact or comfort separately as individual variables, their co-occurrence may provide even more important information about relationship patterns (McCoach et al., 2010). For instance, some parents may be characterized as having low contact with schools but still be perceived as having a comfortable relationship. In fact, a recent study (Stormont et al., 2013) found this pattern of teacher-rated parent involvement to be associated with the most favorable student outcomes. On the other hand, some parents may have frequent contact with teachers but be perceived as intrusive and unhelpful. Thus, it is the combination of contact and comfort, not either in isolation, that may determine how adaptive they are. Two recent studies have found that teacher perceptions of the combination of these two dimensions of contact and comfort are strong correlates of student success (McCoach et al., 2010; Stormont et al., 2013). For instance, Stormont et al. (2013) found three profiles of teacher-rated contact and comfort: high contact and comfort, low contact/high comfort, and low contact and comfort. Students in the latter group had significantly higher levels of behavior problems at school and lower levels of academic achievement.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Pathways Between Parent Involvement and Student Outcomes

What are the mechanisms by which teacher perceptions of parent contact and comfort influence student outcomes? First, teacher bias may undermine parent willingness and ability to support their child's educational achievement and social development. Much research has documented that parents are unlikely to seek services through schools or mental health providers when they feel judged (McKay, Atkins, Hawkins, Brown, & Lynn, 2003; Nock & Kazdin, 2001). Biases and negative perceptions of school staff may also make schools unwelcoming to parents and will likely influence both contact and comfort levels (Stormshak et al., 2005). The parents of students with behavior and/or academic problems and from culturally diverse backgrounds tend to have the lowest levels of school involvement (El Nokali et al., 2010; Park, Pullis, Reilly, & Townsend, 1994) which may contribute to a cycle of underachievement for these students.

A second, complementary mechanism of parent involvement may be through its impact on teacher and student interactions. In a longitudinal study with 443 1st-grade students, Hughes and Kwok (2007) found that teacher perceptions of parent involvement (a latent factor composed of both contact and alliance) mediated the effects of student background characteristics (race, gender) on student engagement; engagement in turn mediated the effects of teacher-perceived involvement on student academic achievement. Thus, teacher perceptions of both dimensions of involvement may directly influence student engagement in learning which contributes to student performance. A study with 894 3rd-grade students also found that parent involvement predicted quality of student–teacher interactions (Wyrick & Rudasill, 2009), suggesting a plausible additional link in the pathway to student outcomes. That is, positive teacher perceptions of parent involvement may lead to improved teacher-student interactions and higher levels of student engagement, both of which contribute to better student behaviors and academic performance.

These findings suggest that altering teacher perceptions of parent involvement patterns, especially perceived contact and comfort, may be a key leverage point in fostering more positive outcomes for at-risk students. Interventions designed to change teacher attitudes and behaviors toward parents hold promise for altering parent participation patterns, which in turn could improve student outcomes. Given that teachers interact with dozens of parents and students each year, teacher focused training that addresses parent involvement also has the advantage of broader, class-wide impact than interventions delivered individually to parents. One teacher focused intervention is the Incredible Years Teacher Classroom Management (IY TCM) program (Webster-Stratton & Reid, 2010).

IY TCM Program and Parent Involvement

IY TCM was developed as a companion to the IY Parent intervention, the well-established treatment for youth with conduct problems, to address the common finding that parenting interventions alone do not always improve student behaviors at school (Taylor & Biglan, 1998; Webster-Stratton, 1990). IY TCM was designed as a 6-day teacher training program focused on improving teacher–student and teacher–parent relationships and increasing teacher use of effective classroom management strategies. In particular, IY TCM has a primary goal of encouraging teachers to examine their assumptions and biases about parents and to develop and/or repair relationships with challenging students and families. Although IY TCM has been shown to improve teacher classroom management behaviors and child outcomes in a stand-alone intervention (Reinke, Herman, & Dong, 2014; Reinke, Stormont, Herman, & Newcomer, 2014) and as part of multicomponent interventions (Webster-Stratton, Reid, & Hammond, 2001, 2004; Webster-Stratton, Reid, & Stoolmiller, 2008), no research has reported its impact on parent involvement.

This study examined the effects of the IY TCM on teacher perceptions of contact and comfort with parents. We believe this is the first randomized trial to evaluate the effects of any universal teacher training program on parent involvement profiles. Using a person-centered approach, we conducted latent profile analyses (LPA) on teacher ratings of parent contact and comfort at baseline and follow-up to identify profiles of involvement. Given our definition of

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

teacher perceived parent involvement as a pattern of co-occurring constructs, contact and comfort, LPA was the optimal method for defining these patterns. Similar to findings from Stormont et al. (2013), which relied on the baseline scores of the first cohort of participants in the present trial, we hypothesized that three profiles would emerge at both time points characterized by the following: (a) high contact/high comfort, (b) low contact/high comfort, and (c) low contact/low comfort. To validate the profiles, we next examined their relations with documented correlates. Specifically, we hypothesized that students of parents in the low contact and low comfort profile would have significantly higher observed and teacher-rated behavior problems and lower academic performance compared to other profiles.

Next, we conducted latent transition analyses (LTA) to test the hypothesis that teachers who received the training would be more likely to shift into adaptive profiles at follow-up. LTA is an advanced analytic method for examining changes in profile membership (e.g., low contact/high comfort, low contact/low comfort) derived from LPAs at two time points (see Thompson, Macy, & Fraser, 2011). LTA afforded the opportunity to examine intervention effects on these patterns rather than on mean level changes of singular variables. We expected teachers who received IY TCM would be more likely to have parents shift into more adaptive profile patterns (characterized by either higher levels of contact and comfort or by favorable student outcomes) at follow-up compared to teachers in the business-as-usual condition.

Method

Participants

Participants in this group randomized trial were 105 teachers and 1818 students in Grades kindergarten to third from nine urban schools serving primarily African American students. As indicated in the participant flowchart (see Figure 1), the study had high rates of enrollment for eligible teachers (96%) and students (84%). All teacher participants and parents provided written consent, and all students provided written assent to participate in the study. Teachers were randomly assigned within schools to receive IY TCM or to a wait-list, business-as-usual control group. The majority of teacher participants were female (97%) and White (75%; 22% African American and 3% other). The student sample included more males (52%) and African Americans (76%; 22% White, and 2% other), and half the student sample qualified for free or reduced lunch.

Measures

Student demographics. Free and reduced lunch status (FRL), student race, and sex were obtained from the school district for all participating students. Students were coded as 1 if they received FRL and 0 if not. Students were coded as 1 if they were African American, and 0 if not, because of small cell size for students in the other race category.

Parent contact and comfort. The *Parent Involvement Measure – Teacher* (Conduct Problems Prevention Research Group [CPPRG], 1991) is a 21-item measure that assesses facets of parent involvement. This measure was completed by the classroom teacher for each student. Two subscales, Parent—Teacher Contact and Parent Comfort, were included in the latent profile analysis to explore specific subtypes of parent involvement. The item responses ranged from 0 (*not at all or never*) to 4 (*very interested, very often, very comfortable, a whole lot, more than once a week*). Factor analysis on this measure documented strong support for the comfort and contact factors (Miller-Johnson & Maumary-Gremaud, 1995). Malone (2000) found evidence that the measure can discriminate between high and low risk samples. For the current control group sample, the test–retest reliability from fall to spring for each subscale were .57 (Parent–Teacher Contact) and .68 (Parent Comfort), respectively.

Academic achievement. The W*oodcock–Johnson III Normative Update Tests of Achievement* (WJ III ACH; Woodcock, McGrew, & Mather, 2007) is an assessment of student academic achievement. The present study included two subscales, Broad Reading and Broad Math. The WJ III ACH is a well-established measure with strong psychometrics. Teachers also rated student academic competence using the *Social Competence Scale – Teacher version* (T-COMP; CPPRG, 1995). The item responses range from 0 (*almost never*) to 4 (*almost al-*

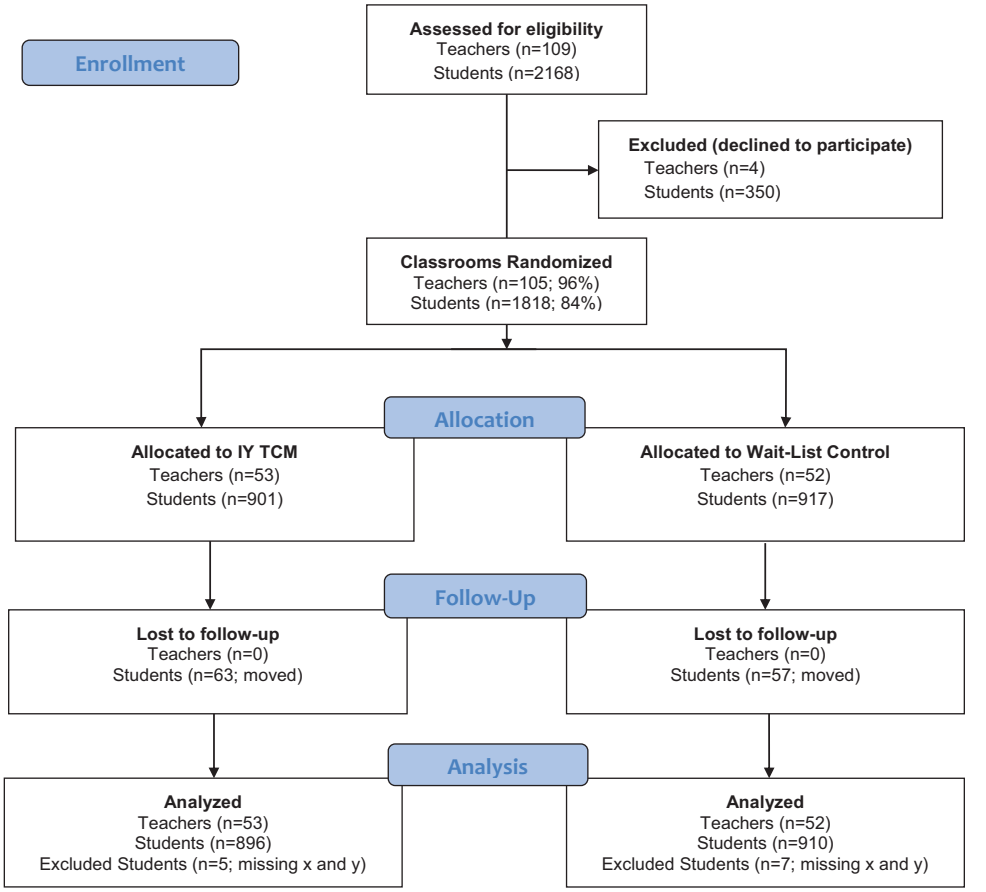


Figure 1. IY TCM randomization participant flowchart. See the online article for the color version of this figure.

ways). Previous research has found adequate psychometric properties for the T-COMP (CP-PRG, 1995; Gouley, Brotman, Huang, & Shrout 2008).

Direct observations of students. Independent observers conducted direct observations of teacher and student behaviors using the Multi-Option Observation System for Experimental Studies (MOOSES; Tapp, 2004) interface for handheld computers to gather real-time data using the Brief Student–Teacher Classroom Interaction Observation code (ST-CIO; Reinke & Newcomer, 2010). The ST-CIO simultaneously collects counts/duration of teacher behaviors (praise, reprimands/teaching) and student behaviors (disruptions/off task). Each student was observed for 5 min during academic instruction times (reading or math). Prior to data collection, full-time research staff and graduate student observers were trained for 2 weeks using videos and practice sessions to reach 85% reliability with a master coder. Reliability checks were conducted on a random subset of 29% of all observations, and observers received continuing supervision to ensure against observer drift. The mean percent agreement on the ST-CIO was 93% for end-of-the-year observations. MOOSES utilizes a rigorous second-by-second comparison of raters to determine reliability, and an overall reliability of 80% is considered acceptable; thus 93% is considered highly reliable (Tapp, 2004).

Teacher ratings of student disruptive behaviors and family problems. Teachers also rated student disruptive behaviors and family problems on the *Teacher Observation of Class-*

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

room Adaptation-Checklist (TOCA-C; Koth, Bradshaw, & Leaf, 2009) in October and April of the academic year. The item responses ranged from 1 (*never*) to 6 (*almost always*). The TOCA-C is a reliable and valid measure. A recent factor analytic study confirmed the factor structure of the TOCA-C in our sample and found it to have strong psychometric properties in terms of goodness of fit and measurement invariance (Wang et al., 2015).

Procedures

Teachers and students were recruited at the beginning of the school year. All baseline assessments occurred in late September and early October, prior to the intervention. Postassessments occurred at the end of the same school year, in late April and early May.

In three sequential, annual cohorts of 15–20, teachers in the IY TCM condition attended three sets of two full-day group trainings in late October, December, and February. All trainings were cofacilitated by two doctoral level IY TCM group leaders who were supervised by the program developer; one of these trainers also served as a coach who supported teacher implementation following sessions.

IY TCM is a comprehensive curriculum for improving teacher classroom management and relationship skills. IY views solid relationships with all students and parents as a necessary element of successful classroom management. In particular, the IY TCM logic model identifies "positive parent–teacher partnerships" as one of three program goals, specifies parent involvement activities as a key modality or strategy, and targets positive parent–teacher relations as a proximal outcome of the program. Parental involvement is discussed in every training workshop and includes strategies to assist teachers to develop better relationships with parents and create opportunities for parents to get involved in a child's education. The entire first full day of training (seven hours) is focused on building relationships with parents and students. Much time during all training sessions is devoted to observing video vignettes of actual teacher interactions with students and parents. Each vignette provides a model for effective interaction and also evokes discussion and insight about the *teacher's beliefs, biases, and perceptions* of these interactions. The trainers prompt reflections with Socratic questioning about the videos ("How are you feeling as the teacher in this situation?" "How is the student/parent feeling?" "What is the student/parent learning?" "How would you respond in this situation?") and facilitate group discussion. These conversations spark role plays to practice challenging interactions. In this way teachers can serve as models for others and/or get feedback about improving their interactions. Each section of the training provides ample time for self-reflection; teachers respond to a series of questions about their current practices (e.g., what do I do to make parents feel valued and welcome, what am I doing that may lead parents to feel unvalued or unwelcome) and what they can do differently.

Time is also allotted for teachers to develop plans for improving their classroom ecology and for developing behavior support plans for responding to challenging students and parents. These plans always include specific prompts for how the teacher will engage parents (see Reinke et al., 2014 for more details about these plans and outcomes in this sample). Specific tools and strategies are provided in the materials that each teacher receives including letters that can be sent home to facilitate home school communication. A coach meets with teachers on a regular basis after the first workshop through the end of the school year; the amount of time and focus of these meetings is tailored to the teachers' interests and needs. (For more information about curriculum content see http://incredibleyears.com/programs/teacher/classroom-mgt-curriculum). Fidelity of implementation of the program and teacher implementation skills were monitored over the course of the year and are documented in a separate report (see Reinke, Herman, Stormont, Newcomer, & David, 2013). In summary, teachers in the intervention were all exposed to the training workshops; nearly all teachers attended all six workshops (attendance rate was 94%–100% for each workshop), and the few teachers who missed a workshop because of illness met with a coach to review missed material. Teachers rated the workshops with high satisfaction and likelihood of recommending the training to others (mean ratings of 6.44–6.75 on a scale from 1–7 with high scores indicating greater satisfaction). Teachers also received a strong dose of coaching. The average amount of time each teacher spent with a

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

coach between and after workshop sessions was nearly six hours (358 min). Direct observations revealed that teachers in the intervention condition used higher rates of proactive teaching strategies compared to control teachers at each follow-up point. Follow-up assessments were collected in late April and May of the same academic year.

Control

Teachers assigned to the wait-list control condition continued their business as usual teaching and pursuing professional development opportunities during the study period. They were offered IY TCM at the end of the study after follow-up data had been collected.

Analysis Plan

Latent profile and transition analyses (LPA and LTA, respectively) were used to examine patterns of two indicators of teacher perceived parent involvement, contact and comfort (Nylund et al., 2005). First, we conducted unconditional LPAs at each time point to determine the optimal number of profiles. Second, we examined independent correlates of identified classes to confirm their distinctiveness and meaningfulness using the Auxiliary function in MPlus. Third, we conducted an LTA to report transitions between profiles over time. Finally, we repeated the LTA with treatment condition as a covariate to determine if treatment predicted class membership at follow-up. Conditional models also accounted for clustering of students within classrooms and included student sex, race, and lunch status as covariates. All analyses were conducted using MPlus 6.1 (Muthén & Muthén, 1998–2010). In LPA, a combination of statistical considerations and substantive theory are used to decide on the best fitting model. LPA decision rules are given in the supplemental materials. In LTA, we used the KNOWNCLASS command to identify treatment condition as a categorical latent variable for which class membership was known (Muthén & Muthén, 1998–2010).

To accommodate for missing data, Mplus software uses full information maximum likelihood with the assumption that the data are missing at random (Little, 1995), a common approach employed within this analysis method (Schafer & Graham, 2002). The minimum covariance coverage recommended for reliable model convergence is 0.10 (Muthén & Muthén, 1998-2010). In this study, coverage ranged from 0.924 to 0.987.

Results

Latent Profile Analysis of Baseline and Follow-Up Parent Contact and Comfort

Teacher ratings of parent contact and comfort were entered as indicators in LPAs at baseline and follow-up. LPA fit indices for class solutions are summarized in Table 1. We used these fit indices as well as theory and prior literature to select the four class solution as the best fitting model at both time points. The four class solutions had significantly lower values than the three class solutions, and a parametric bootstrapping likelihood ratio test in mixture analyses confirmed it as a better fit than the three class model. The BIC values for the four and five class solutions

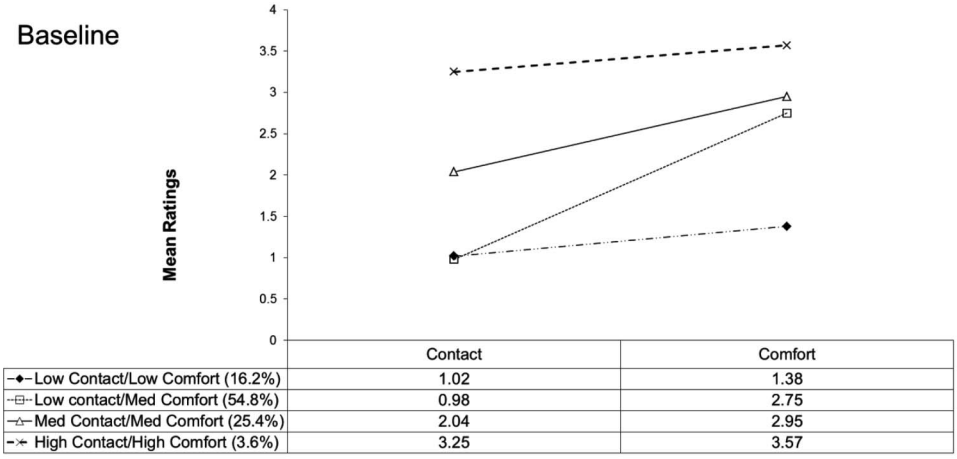
Table 1
Model Fit Indices For 1–5 Class Solutions of Baseline and Follow-Up

	Baseline				Follow-Up			
LC	BIC	aBIC	VLMR	Entropy	BIC	aBIC	VLMR	Entropy
1	7898.84	7886.14	—	—	6479.47	6466.76	—	—
2	7624.67	7602.44	.04	.74	6289.45	6267.21	.02	.67
3	7579.16	7547.39	.27	.62	6163.54	6131.77	.46	.73
[a]**4**	**7562.48**	**7521.17**	**.10**	**.63**	**6109.68**	**6068.39**	**.04**	**.72**
5	7561.62	7510.79	.42	.67	6101.86	6051.03	.42	.72

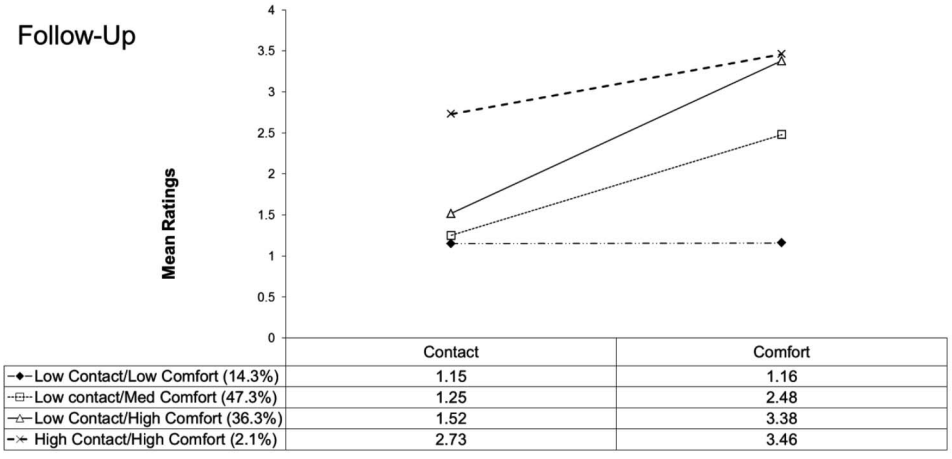
Note. LC = Latent Classes; BIC = Bayesian Information Criterion; aBIC = adjusted Bayesian Information Criterion; VLMR = Vuong-Lo-Mendell-Rubin.
[a] Bold indicates equal selected class solution.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

were comparably low, and the fifth class did not provide additional information relevant to the outcome questions of interest to the study. That is, the fifth class that emerged in both five class models represented a very small percentage of parents (3%) and was not conceptually relevant (i.e., the average ratings on both indicators were very similar to those observed for the fourth class); moreover, subsequent analyses revealed the fifth class was not distinguished by behavior or academic correlates. Thus, we rejected the fifth class in favor of the more parsimonious four class solution. Figure 2 summarizes the prevalence and characteristics of the classes at each time point. The four class solution included three classes that we hypothesized: (1) High Contact/High Comfort, (2) Low Contact/Medium Comfort, and (3) Low Contact/Low Comfort. The fourth class was characterized by Medium Contact/Medium Comfort at baseline and Low Contact/High Comfort at follow-up. For transition purposes, we considered these fourth classes as comparable because they represented a similar proportion of participants at each time point, and they were both characterized by contact and comfort mean ratings that fell between the High/High and Low/Medium profiles at both time points. Roughly half the sample fell into Low Contact/Medium Comfort at both time points (54.8% and 47.3%, respectively). The Low



	Contact	Comfort
Low Contact/Low Comfort (16.2%)	1.02	1.38
Low contact/Med Comfort (54.8%)	0.98	2.75
Med Contact/Med Comfort (25.4%)	2.04	2.95
High Contact/High Comfort (3.6%)	3.25	3.57



	Contact	Comfort
Low Contact/Low Comfort (14.3%)	1.15	1.16
Low contact/Med Comfort (47.3%)	1.25	2.48
Low Contact/High Comfort (36.3%)	1.52	3.38
High Contact/High Comfort (2.1%)	2.73	3.46

Figure 2. Baseline and follow-up profiles of contact and comfort.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Contact/Low Comfort (16.2% and 14.3%, respectively) and High Contact/High Comfort (3.6% and 2.1%, respectively) profiles were less common.

Demographic Correlates of Class Membership

Demographic variables were uniquely related to several baseline and follow-up classes. At baseline, the Low Contact/Low Comfort class was significantly more likely to have FRL students than the High Contact/High Comfort class (*OR*: 2.79; 1.59–4.42); girls were more likely to appear in the Low Contact/Medium Comfort (*OR*: 1.73; 1.16–2.41) and Medium Contact/Medium Comfort (*OR*: 2.14; 1.09–4.23). At baseline, the Low Contact/Low Comfort class was significantly more likely to have FRL (*OR*: 3.35; 1.66–6.75) and African American students (*OR*: 13.51; 2.20–83.33) than the Low Contact/High Comfort class. At follow-up, African American students were more likely to appear in the Low Contact/Low Comfort class compared to the High Contact/High Comfort class (*OR*: 5.56; 1.15–27.03), and girls were more likely to be in the Low Contact/Medium Comfort class compared to the Low Contact/High Comfort class (*OR*: 1.99; 1.32–3.01).

Academic Skills and Behaviors Associated With Follow-Up Classes

We examined the association between classes at follow-up and indicators of academic performance, student behaviors, and family problems (see Table 2). Equality tests of means across classes using posterior probability-based multiple imputations revealed a number of significant differences among the parent involvement profiles. The Low Contact/Low Comfort class had significantly lower academic performance compared to the other three groups across all comparisons. Additionally, the Low Contact/High Comfort class had the highest academic performance on all academic measures, even in comparison to the High Contact/High Comfort group on teacher ratings and WJ Reading scores. Notably, the mean standard score on the math and reading subtests of the WJ was 10 points lower for students in the Low Contact/Low Comfort compared to the Low Contact/High Comfort class. Additionally, independent

Table 2
Estimated Mean Scores On Family Problems and Student Achievement and Behaviors by Class at Follow-Up

Variables	1 Low Contact Low Comfort M (SE)	2 Low Contact Medium Comfort M (SE)	3 Low Contact High Comfort M (SE)	4 High Contact High Comfort M (SE)	Significant class comparisons
Teacher report					
Family Problems	3.80 (.09)	2.34 (.04)	1.74 (.04)	2.21 (.21)	1 vs. All***, 2 vs. 3***, 3 vs. 4*
Disruptive	2.38 (.07)	1.87 (.03)	1.69 (.03)	2.41 (.19)	3 vs. All***, 2 vs. 1,4***
Prosocial	4.03 (.08)	4.69 (.04)	5.12 (.04)	4.34 (.21)	3 vs. All***
Academics (COMPS)	2.22 (.08)	3.39 (.05)	4.05 (.05)	3.44 (.22)	1 vs. All***, 2,3 vs. 4***
Achievement					
WJ Reading	92.42 (1.00)	99.51 (.52)	103.47 (.50)	100.80 (2.41)	1 vs. All***, 2 vs. 3***
WJ Math	89.78 (1.12)	96.66 (.63)	100.17 (.65)	94.25 (2.74)	1,2 vs. 3***, 3 vs. 4*
Direct observations					
Off Task	.095 (.01)	.070 (.01)	.059 (.01)	.071 (.02)	1 vs. 3**
Disruptions	.076 (.01)	.064 (.01)	.045 (.01)	.101 (.03)	1,2 vs. 3*

* $p < .05$. ** $p \leq .01$. *** $p \leq .001$.

direct observations of student behavior in the classroom found that students of parents in the Low Contact/Low Comfort class had significantly higher rates of disruptive and off-task behaviors compared to students of parents in the Low Contact/High Comfort class. Teacher ratings of student disruptive behaviors confirmed these findings. Additionally, teachers rated families in the Low Contact/Low Comfort class as having significantly more family problems than the other classes. Across most comparisons, the Low Contact/High Comfort profile emerged as having the most positive child and family correlates. The High Contact/High Comfort profile was associated with some student academic and behavior problems. As did Stormont et al. (2013), we interpreted this finding as indicating an adaptive pattern of parent involvement in education, perhaps in response to student challenges with school, given that teachers were perceiving these parents favorably (i.e., as highly involved and comfortable).

LTA Intervention Effects

We first conducted an LTA without covariates. (We provide joint and conditional probabilities from these analyses in the supplemental materials.) We then repeated the LTA with intervention, sex, race, and lunch status as predictors of baseline and follow-up class membership. Intervention condition was unrelated to baseline class membership, suggesting that randomization resulted in baseline equivalence between intervention conditions in profile patterns. Thus, analyses focused on intervention effects of follow-up class membership.

As hypothesized, intervention predicted follow-up class membership. Parents of intervention teachers were more likely to be in the High Contact/High Comfort class at follow-up versus the Low Contact/Low Contact (*OR*: 4.55; 1.09–19.03) and Low Contact/Medium Comfort classes (*OR*: 5.30; 1.21–22.36). Intervention teachers were also more likely to rate parents as being in the Low Contact/High Comfort class compared to the Low Contact/Low Comfort (*OR*: 2.95; 1.40–6.49) and Low Contact/Medium Comfort classes (*OR*: 3.43; 1.40–8.43). One quarter of the sample (459 parents) were in the most adaptive classes (High Contact/High Comfort and Low Contact/High Comfort) at follow-up, and 77% of these parents were from the intervention group.

Examining transitions among classes also provided support for the treatment condition. Only 7% of parents for control teachers in the lower two adaptive classes at baseline transitioned to a more adaptive class at follow-up, compared to 39% of parents for intervention teachers who transitioned to a more adaptive class. Particularly striking, only 2% of control parents in the Low/Low class at baseline transitioned to the most adaptive classes at follow-up, compared to 25% for the intervention group. Moreover, 80% of parents who transitioned to the High Contact/High Comfort class at follow-up were from the intervention group, versus 20% from the control group.

Finally, we examined likelihood of progressing, digressing, or staying in a given class between conditions (see Figure 3). We defined Stayers as those with stable membership in a class at both time points. Progressors were those who moved from a less adaptive class to a more adaptive class from baseline to follow-up. Digressors were defined by movement from a more adaptive class to a less adaptive class. Given that Low Contact/High Comfort and High Contact/High Comfort both were characterized as types of adaptive involvement (the former because students in this class had the most favorable outcomes and the latter because it represented the highest scores on both types of involvement), we considered movements between these classes as types of Stayers (i.e., it did not make conceptual sense to characterize movement between these classes either as a type of progression or digression). Chi-square analyses indicated that progression was more likely in the intervention group and digression was more likely in the control group ($\chi^2[2] = 65.21$; $p < .0001$; $\varphi_c = .19$). Specifically, the observed occurrence of progression was 38% less than expected for the control group and 38.6% more than expected for the intervention group. Counterfactual evidence was also found in the observed frequency of digression in the control group, which was 22.4% more than expected and 22.8% less than expected in the intervention condition (see Table 3).

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

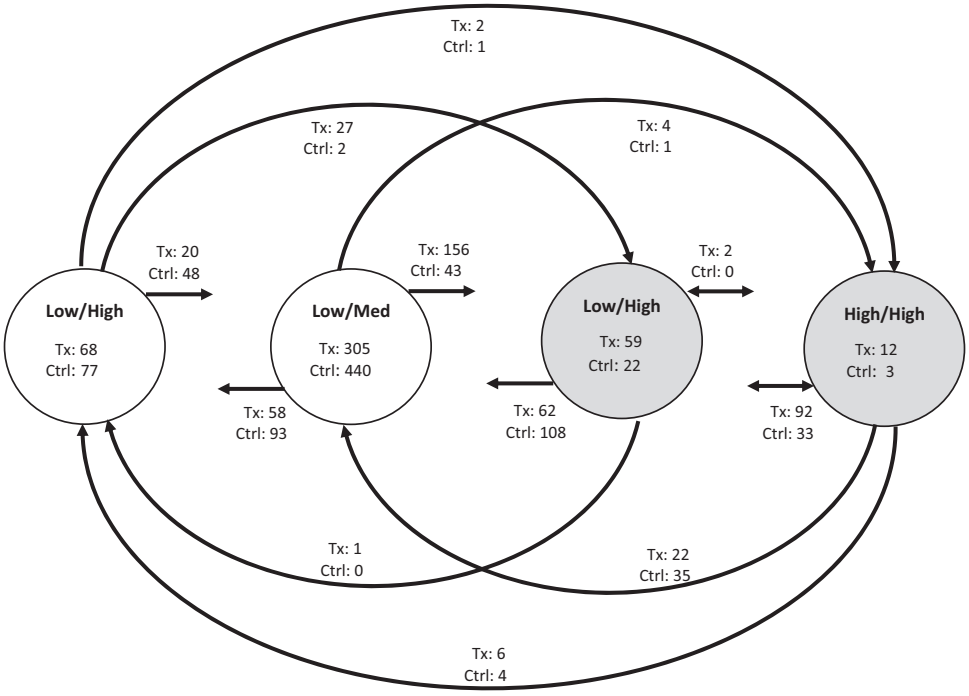


Figure 3. Transition patterns for intervention (n = 896) and control (n = 908) participants. Note: Circles indicate Stayers, those with stable membership within class over time. Forward arrows (→) indicate Progressors, those who moved from a less adaptive class to more adaptive class. Back arrows (←) indicate Digressors, those who moved from a more adaptive class to a less adaptive class. Double arrows (←→) indicate transitions between the most adaptive classes (shaded gray).

Discussion

This may be the first randomized trial to find significant improvement in teacher perceptions of parent educational involvement following a universal teacher training intervention. Although the primary outcome focused on teacher perceptions of involvement only, existing evidence suggests that such perceptions are a meaningful educational outcome. First, prior studies suggest that teacher perceptions of parent involvement may provide the strongest predictors of future student success and thus are a highly relevant target of intervention. The compelling literature showing longitudinal, independent links between teacher perceptions of parent involvement and educational outcomes through high school (see Bakker et al., 2007; Barnard, 2004; Izzo et al., 1999; Miedel & Reynolds, 2000) suggest that IY TCM's significant impact on parent involvement profiles may lead to long-term educational benefit for students. Second, profiles of teacher-rated parent involvement were associated with objective educational outcomes in this study including performance on standardized achievement tests, teacher ratings of academic skills and behavior problems, and independent observations of disruptive and off task classroom behaviors.

Table 3
Chi Square Analysis of Progressors, Stayers, and Digressors

Transitions	Control	Treatment	Totals
Progressors	95	209	304
Stayers	575	538	1113
Digressors	240	149	389
Totals	910	896	1806

Note. χ^2 (2) = 65.21; $p < .002$; $\varphi_c = .19$.

The primary focus of the study was on using sophisticated modeling techniques to

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

determine if teacher ratings of parent involvement could be altered by an intervention. The person-centered analyses indicated that profiles of perceived contact and comfort provide a valuable method for understanding parent involvement and supporting student outcomes. Low contact alone was not associated with adverse student performance or outcomes. The worst correlates were observed for students with low contact and low comfort parents, whereas, the low contact and high comfort profile was associated with higher academic achievement and lower behavior problems. These findings imply that a dimensional, profile approach adds a more nuanced portrayal of involvement patterns than can be captured by single indicators.

Notably, the low contact and low comfort profile had a greater probability of being composed of parents of African American students, students from low income backgrounds, and students with academic and behavior problems. Other researchers have documented that involvement, however it is measured, tends to be lowest for families from cultural minority groups and students at risk for school failure (El Nokali et al., 2010; Park et al., 1994; Stormont et al., 2013). That students in intervention classrooms had a greater probability of appearing in the most adaptive profiles versus the least adaptive profile (i.e., low contact and low comfort) at follow-up suggests IY TCM may hold benefit for improving educational outcomes for families and students with the greatest needs.

In line with Stormont et al. (2013), low contact alone was not a risk for teacher-rated discomfort or for negative student outcomes. This implies that teachers base their discomfort on something other than actual contact with parents. Given the background characteristics of students and parents in the low contact and low comfort group, prime candidates to explain teacher perceived discomfort with parents include racial or social economic differences and teacher interpretation of students' misbehavior and/or skill deficits as a reflection of the parent (see Stormont et al., 2013). Given the amount of focus devoted to examining teacher bias and building empathy for children and parents in IY TCM, a tenable hypothesis is that the training improves teacher perceptions of parent involvement by altering what otherwise would remain ingrained assumptions about parents who differ from them and/or who have students with school problems. Notably, a recent study found that the effects of an intensive teacher–parent consultation model on youth outcomes were mediated by teacher perceptions of parent involvement, but not parent perceptions of involvement (Sheridan et al., 2012). This finding is consistent with the idea that changing teacher attitudes about parents contributes to student outcomes, possibly by fostering improved relations with students and in turn increases in student engagement (Hughes & Kwok, 2007).

Limitations and Future Directions

Unfortunately, the present study design did not allow us to test mechanisms between intervention, teacher perceptions of parents, and student outcomes. IY TCM is a multifaceted intervention so we cannot be sure the observed changes in teacher perceptions occurred because of specific program components or because of the intervention package. Because IY TCM provides explicit instruction and practice to support improvements in teacher–parent interactions, it is possible that teachers became more skilled at involving parents in school, which led to successful interactions and improved perceptions of one another. It is also possible that teacher-observed improvements in student behaviors may have been the result of the entire program package (including effective classroom management behaviors), which led them to develop more positive attitudes about parents. One way to examine these alternate hypotheses of program effects would be through a dismantling study comparing the effects of the entire program to a condensed version with only content related to parent–teacher relationships. Additionally, future studies are needed that include measures of parent–teacher and teacher–student interactions at multiple time points to provide more fine-tuned analyses of when and how changes in teacher perceptions contribute to student success. Future studies are also needed to assess parent perceptions of their own involvement and of teacher efforts in involving them in school. Such studies would help determine if improvement in teacher perceptions of parents coincide with parent perceptions and whether any new perceptions lead to changes in behavior.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Implications

Findings from the present study suggested that training teachers to assess their perceptions of parents and students and equipping them with skills to be more effective in parent interactions holds promise for promoting parent involvement in education on a broad scale. Improvements in teacher-perceived parent involvement is associated with positive educational and social outcomes for all students. Given that teachers interact with entire classrooms of students and their parents each year, improving teacher skill in and awareness of promoting parent involvement has the potential to foster positive youth development more efficiently than working with one parent at a time. For youth at highest risk for academic and behavior problems, working with parents alone may not be enough to improve success in school settings for these children (Taylor & Biglan, 1998; Webster-Stratton, 1990). Yet it may not be realistic for a school psychologist to work with each child's teacher to promote more effective parent involvement strategies. Instead, universal teacher training programs like IY TCM may complement efforts to improve academic and social outcomes for all students, including those with the greatest need.

School psychologists implementing evidence-based parenting programs for children with behavior disorders are encouraged to consult with the child's teacher about classroom management issues based on IY TCM principles. Equipping teachers with skills and adaptive cognitions in working with parents of children with behavior problems using IY TCM strategies may help overcome the common challenges teachers experience in these relationships. Prior studies have implemented IY TCM with teachers of students with conduct problems whose parents also received IY Parent and found additive effects on student outcomes (Webster-Stratton et al., 2004). The present findings suggested that part of the benefit of the IY TCM approach on student outcomes may arise from improvements in teacher assumptions about parents and/or knowledge of strategies to improve parent school involvement and not simply changes in the classroom environment. IY TCM also provides school psychologists with a training model for addressing teacher biases about students and parents that can undermine academic success. Given the well-established influence of teacher expectancy on student educational success (see Rosenthal, 1994), any strategy for fostering adaptive expectations of students and parents will likely go a long way toward helping students with the most intense needs in schools to be successful.

Conclusion

Parent involvement in education is a valued outcome in itself. Teacher beliefs about and attitudes toward parents likely affect their interactions with students. Thus, altering these perceptions to be more favorable can promote student learning and development. The findings from the present study suggested that IY TCM provides one method for fostering greater parent involvement in education that may benefit students with academic and behavior problems.

References

Akaike, H. (1987). Factor analysis and AIC. *Psychometrika, 52,* 317–332. http://dx.doi.org/10.1007/bf02294359

Arnold, D. H., Griffith, J. R., Ortiz, C., & Stowe, R. M. (1998). Day care interactions and teacher perceptions as a function of teacher and child ethnic group. *Journal of Research in Childhood Education, 12,* 143–154. http://dx.doi.org/10.1080/02568549809594880

Bakker, J., Denessen, E., & Brus-Laeven, M. (2007). Socio-economic background, parental involvement and teacher perceptions of these in relation to pupil achievement. *Educational Studies, 33,* 177–192. http://dx.doi.org/10.1080/03055690601068345

Barnard, W. M. (2004). Parent involvement in elementary school and educational attainment. *Children and Youth Services Review, 26,* 39–62. http://dx.doi.org/10.1016/j.childyouth.2003.11.002

Campbell, S. B., & Ewing, L. J. (1990). Follow-up of hard-to-manage preschoolers: Adjustment at age 9 and predictors of continuing symptoms. *Journal of Child Psychology and Psychiatry, 31,* 871–889. http://dx.doi.org/10.1111/j.1469-7610.1990.tb00831.x

Carr, E. G., Taylor, J. C., & Robinson, S. (1991). The effects of severe behavior problems in children on the teaching behavior of adults. *Journal of Applied Behavior Analysis, 24,* 523–535. http://dx.doi.org/10.1901/jaba.1991.24-523

Conduct Problems Prevention Research Group (CPPRG). (1991). *Parent and Teacher Involvement*

Measure – Teacher. Available from the Fast Track Project website: http://www.fasttrackproject.org

Conduct Problems Prevention Research Group (CPPRG). (1995). *Teacher–Social Competence Scale*. Available from the Fast Track Project website: http://www.fasttrackproject.org

El Nokali, N. E., Bachman, H. J., & Votruba-Drzal, E. (2010). Parent involvement and children's academic and social development in elementary school. *Child Development, 81,* 988–1005. http://dx.doi.org/10.1111/j.1467-8624.2010.01447.x

Gouley, K. K., Brotman, L. M., Huang, K. Y., & Shrout, P. E. (2008). Construct validation of the social competence scale in preschool-age children. *Social Development, 17,* 380–398. http://dx.doi.org/10.1111/j.1467-9507.2007.00430.x

Henderson, A. T., & Berla, A. (1997). *A new generation of evidence: The family is critical to student achievement*. Washington, DC: National Committee for Citizens in Education.

Herman, K. C., Reinke, W. M., Bradshaw, C., Lochman, J., Borden, L., & Darney, D. (2012). Increasing parental engagement in school-based preventive interventions: The integration of the Family Check-Up and the Parent Coping Power Program. In M. Weist, N. Lever, C. Bradshaw, & J. Owens (Eds.), *Handbook of school mental health* (2nd ed., pp. 223–236). New York, NY: Springer.

Hughes, J., & Kwok, O. M. (2007). Influence of student–teacher and parent–teacher relationships on lower achieving readers' engagement and achievement in the primary grades. *Journal of Educational Psychology, 99,* 39–51. http://dx.doi.org/10.1037/00220663.99.1.39

Izzo, C. V., Weissberg, R. P., Kasprow, W. J., & Fendrich, M. (1999). A longitudinal assessment of teacher perceptions of parent involvement in children's education and school performance. *American Journal of Community Psychology, 27,* 817–839. http://dx.doi.org/10.1023/A:1022262625984

Kellam, S. G., Rebok, G. W., Ialongo, N., & Mayer, L. S. (1994). The course and malleability of aggressive behavior from early first grade into middle school: Results of a developmental epidemiologically-based preventive trial. *Journal of Child Psychology and Psychiatry, 35,* 259–281. http://dx.doi.org/10.1111/j.1469-7610.1994.tb01161.x

Koth, C. W., Bradshaw, C. P., & Leaf, P. J. (2009). Teacher Observation of Classroom Adaptation – Checklist: Development and factor structure. *Measurement and Evaluation in Counseling and Development, 42,* 15–30. http://dx.doi.org/10.1177/0748175609333560

Lo, Y., Mendall, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika, 88,* 767–778. http://dx.doi.org/10.1093/biomet/88.3.767

Little, R. J. (1995). Modeling the dropout mechanism in repeated-measures studies. *Journal of the American Statistical Association, 90,* 1112–1121. http://dx.doi.org/10.2307/2291350

Malone, P. S. (2000). *Parent and Teacher Involvement Measure – Teacher: Year 3 update*. Available from http://www.fasttrackproject.org/

McCoach, D., Goldstein, J., Behuniak, P., Reis, S. M., Black, A. C., Sullivan, E. E., & Rambo, K. (2010). Examining the unexpected: Outlier analyses of factors affecting student achievement. *Journal of Advanced Academics, 21,* 426–468. http://dx.doi.org/10.1177/1932202X1002100304

McDermott, P., & Rothenberg, J. (2000). Why urban parents resist involvement in their children's elementary education. *Qualitative Report, 5*(3&4). Retrieved from http://www.nova.edu/ssss/QR/QR5-3/mcdermott.html

McKay, M. M., Atkins, M. S., Hawkins, T., Brown, C., & Lynn, C. J. (2003). Inner-City African American Parental Involvement in Children's Schooling: Racial Socialization and Social Support from the Parent Community. *American Journal of Community Psychology, 32*(1–2), 107–114. http://dx.doi.org/10.1023/a:1025655109283

Miedel, W. T., & Reynolds, A. J. (2000). Parent involvement in early intervention for disadvantaged children: Does it matter? *Journal of School Psychology, 37,* 379–402. http://dx.doi.org/10.1016/s0022-4405(99)00023-0

Miller-Johnson, S., & Maumary-Gremaud, A. (1995). *Parent–teacher involvement: Parent version* (Fast Track Project Technical Report. Year 2). Durham, NC: Duke University.

Muthén, L. K., & Muthén, B. O. (1998–2010). *Mplus user's guide* (6th ed.). Los Angeles, CA: Author.

Nock, M. K., & Kazdin, A. E. (2001). Parent expectancies for child therapy: Assessment and relation to participation in treatment. *Journal of Child and Family Studies, 10,* 155–180. http://dx.doi.org/10.1023/A:1016699424731

Nylund, K., Muthén, B., Bellmore, A., Nishina, A., Graham, S., & Juvoven, J. (2005, May). *The state of victimization during middle school: A latent transition mixture model approach*. Paper presented at the annual convention of the Society for Prevention Research, Washington, DC.

Park, E., Pullis, M., Reilly, T., & Townsend, B. (1994). Cultural biases in the identification of students with behavioral disorders. In R. L. Peterson & S. Ishii-Jordan (Eds.), *Multicultural issues in the education of students with behavioral disorders* (pp. 14–26). Cambridge, MA: Brookline Books.

Patterson, G., Reid, J., & Dishion, T. (1992). *Antisocial boys*. Eugene, OR: Castalia Publishing Company.

Ramaswamy, V., DeSarbo, W. S., Reibstein, D. J., & Robinson, W. T. (1993). An empirical pooling

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

approach for estimating marketing mix elasticities with PIMS data. *Marketing Science, 12,* 103–124. http://dx.doi.org/10.1287/mksc.12.1.103

Reinke, W. M., Herman, K. C., & Dong, N. (2014, March). *Incredible Years Teacher Classroom Management Program: Initial findings from a group randomized trial*. Paper presented at the Society for Research on Educational Effectiveness Spring Conference, Washington, DC.

Reinke, W. M., Herman, K. C., Stormont, M., Newcomer, L., & David, K. (2013). Illustrating the multiple facets and levels of fidelity of implementation to a teacher classroom management intervention. *Administration and Policy in Mental Health and Mental Health Services Research, 40,* 494–506. http://dx.doi.org/10.1007/s10488-013-0496-2

Reinke, W. M., & Newcomer, L. (2010). *Brief Classroom Interaction Observation Revised* (BCIO-R) *manual*. Columbia, MO: University of Missouri.

Reinke, W. M., Stormont, M., Herman, K. C., & Newcomer, L. (2014). Using coaching to support teacher implementation of classroom-based interventions. *Journal of Behavioral Education, 23*(1), 150–167.

Rosenthal, R. (1994). Interpersonal expectancy effects: A 30-year perspective. *Current Directions in Psychological Science, 3,* 176–179. http://dx.doi.org/10.1111/1467-8721.ep10770698

Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods, 7,* 147–177. http://dx.doi.org/10.1037/1082-989X.7.2.147

Schwartz, G. (1978). Estimating the dimensions of a model. *The Annals of Statistics, 6,* 461–464.

Sclove, S. L. (1987). Application of model-selection criteria to some problems in multivariate analysis. *Psychometrika, 52,* 333–343. http://dx.doi.org/10.1007/bf02294360

Sheridan, S. M., Bovaird, J. A., Glover, T. A., Garbacz, S. A., Witte, A., & Kwon, K. (2012). A randomized trial examining the effects of conjoint behavioral consultation and the mediating role of the parent–teacher relationship. *School Psychology Review, 41,* 23–46.

Stormont, M., Herman, K. C., Reinke, W. M., David, K., & Goel, N. (2013). Latent profile analysis of teacher perceptions of parent contact and comfort. *School Psychology Quarterly, 28,* 195–209. http://dx.doi.org/10.1037/spq0000004

Stormshak, E. A., Dishion, T. J., Light, J., & Yasui, M. (2005). Implementing family-centered interventions within the public middle school: Linking service delivery to change in student problem behavior. *Journal of Abnormal Child Psychology, 33,* 723–733. http://dx.doi.org/10.1007/s10802-005-7650-6

Taylor, T. K., & Biglan, A. (1998). Behavioral family interventions for improving child-rearing: A review of the literature for clinicians and policy makers. *Clinical Child and Family Psychology Review, 1,* 41–60. http://dx.doi.org/10.1023/A:1021848315541

Tapp, J. (2004). *Multi-option observation system for experimental studies (MOOSES)*. Retrieved from http://kc.vanderbilt.edu/mooses/mooses.html

Thompson, A. M., Macy, R. J., & Fraser, M. W. (2011). Assessing person-centered outcomes in practice research: A latent transition profile framework. *Journal of Community Psychology, 39,* 987–1002. http://dx.doi.org/10.1002/jcop.20485

Vuong, Q. H. (1989). Likelihood ratio tests for model selection and non-nested hypotheses. *Econometrica, 57,* 307–333. http://dx.doi.org/10.2307/1912557

Wagner, M., Kutash, K., Duchnowski, A. J., Epstein, M. H., & Sumi, W. C. (2005). A national picture of the characteristics of students with emotional disturbances receiving special education. *Journal of Emotional and Behavioral Disorders, 13,* 79–96. http://dx.doi.org/10.1177/10634266050130020201

Wang, Z., Rohrer, D., Chuang, C. C., Fujiki, M., Herman, K., & Reinke, W. (2015). Five methods to score the Teacher Observation of Classroom Adaptation Checklist and to examine group differences. *The Journal of Experimental Education, 83*(1), 24–50.

Webster-Stratton, C. (1990). Long-term follow-up of families with young conduct problem children: From preschool to grade school. *Journal of Clinical Child Psychology, 19,* 144–149. http://dx.doi.org/10.1207/s15374424jccp1902_6

Webster-Stratton, C., Reid, J. M., & Stoolmiller, M. (2008). Preventing conduct problems and improving school readiness: Evaluation of the Incredible Years Teacher and Child Training Programs in high-risk schools. *Journal of Child Psychology and Psychiatry, 49,* 471–488. http://dx.doi.org/10.1111/j.1469-7610.2007.01861.x

Webster-Stratton, C., Reid, M. J., & Hammond, M. (2001). Preventing conduct problems, promoting social competence: A parent and teacher training partnership in head start. *Journal of Clinical Child Psychology, 30,* 283–302. http://dx.doi.org/10.1207/S15374424JCCP3003_2

Webster-Stratton, C., Reid, M. J., & Hammond, M. (2004). Treating children with early-onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology, 33,* 105–124. http://dx.doi.org/10.1207/S15374424JCCP3301_11

Webster-Stratton, C., & Reid, M. J. (2010). The incredible years parents, teachers and child training series: A multifaceted treatment approach for

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

young children with conduct problems. In J. R. Weisz, & A. E. Kazdin (Eds.), *Evidence based psychotherapies for children and adolescents* (2nd ed.). New York, NY: Guilford Press.

Woodcock, R. W., McGrew, K. S., & Mather, N. (2001, 2007). *Woodcock-Johnson III Tests of Achievement*. Rolling Meadows, IL: Riverside Publishing.

Wyrick, A. J., & Rudasill, K. M. (2009). Parent involvement as a predictor of teacher–child relationship quality in third grade. *Early Education and Development, 20,* 845–864. http://dx.doi.org/10.1080/10409280802582803

Received June 25, 2015
Revision received May 12, 2016
Accepted May 14, 2016 ■

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

View publication stats

Developmental Psychology
2015, Vol. 51, No. 2, 224–235

© 2014 American Psychological Association
0012-1649/15/$12.00 http://dx.doi.org/10.1037/a0038367

From Middle School to College: Developing Aspirations, Promoting Engagement, and Indirect Pathways From Parenting to Post High School Enrollment

Nancy E. Hill and Ming-Te Wang
Harvard University

Based on a longitudinal sample of 1,452 African American and European American adolescents and their parents, parenting practices (i.e., monitoring, warmth, and autonomy support) at 7th grade had significant indirect effects on college enrollment 3 years post high school, through their effects on aspirations, school engagement, and grade point average (GPA). All 3 parenting practices were related to aspirations and behavioral engagement at 8th grade, with 2 of the 3 parenting practices related to the emotional (monitoring and warmth) and cognitive (autonomy support and warmth) engagement. The reciprocal relations between aspirations and engagement/GPA were significant, although the effects from 8th aspirations to 11th engagement were stronger than the reverse path. Ethnic differences were found only for parenting practices: monitoring had stronger associations with GPA and behavioral engagement for African Americans, whereas autonomy support had stronger associations with GPA for European Americans. For African American parents, a delicate balance is needed to capture the benefits of higher levels of monitoring for promoting GPA and behavioral engagement *and* the benefits of autonomy support for developing aspirations and cognitive engagement. Parental warmth was equally beneficial for supporting aspirations, engagement, and achievement across ethnicity.

Keywords: parenting, aspirations, engagement, adolescence, college-readiness

Supplemental materials: http://dx.doi.org/10.1037/a0038367.supp

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

College-readiness and postsecondary success are increasingly important developmental milestones for adolescents, especially as a college degree is increasingly necessary to earn a living wage. Adolescents' emerging cognitive and identity development enable them to envision and internalize goals for college attendance and careers and understand the connections among their goals, schoolwork, and opportunities post high school (Hill et al., 2004; Hill & Chao, 2009; Jodl, Michael, Malanchuk, Eccles, & Sameroff, 2001). Parents are essential to helping adolescents develop aspirations, plan, prepare, and succeed throughout high school and postgraduation (Eccles, 2007; Helwig, 2008; Hill et al., 2004) and have a significant role in and influence on developmental outcomes into early adulthood (Harris, 2008; Melby, Conger, Fang, Wickrama, & Conger, 2008). Parents remain the most important source of information for youth about goals and careers, despite youths' desire for independence from parents (Helwig, 2008). Because the curricular pathways to college begins as early as middle school (Eccles & Harold, 1993), understanding the ways parenting practices equip youth for post high school success is especially salient for adolescence.

Because youth often feel prepared for life upon graduating from high school, but by age 23, report that their high school experiences left them ill-prepared for the job market (Helwig, 2008), youth need significant support in utilizing opportunities in high school and preparing for post high school transitions. This is even more pronounced among ethnic minorities (Greene & Winters, 2002), who are significantly more likely to attend underresourced and underfunded schools that result in disengagement from school and foreclosed opportunities (Hill, 2011). To this end, the current study examined how parenting practices in middle school are related to adolescents' college enrollment 3 years after students' expected high school graduation date and the indirect effects of students' aspirations and school engagement. Further, this study examined the reciprocal relations between adolescents' aspirations and school engagement and tested the comparative strength of these relations as pathways connecting parenting practices to college enrollment (see Figure 1). We hypothesized that parenting practices (i.e., monitoring, warmth, and autonomy support) will be positively related to school engagement, grade point average

This article was published Online First December 8, 2014.

Nancy E. Hill and Ming-Te Wang, Graduate School of Education, Harvard University.

The authors acknowledge Jacqueline C. Eccles and Arnold Sameroff, the Principal Investigators of the MADIC Study, a rich, public access, longitudinal dataset that provides the field the ability to examine significant and innovative questions on the importance of ethnicity, socioeconomic status, neighborhood and other contextual influences on adolescents' academic and behavioral adjustment, along with mental and physical health and wellbeing. Further, we acknowledge the MacArthur Foundation Research Network on Successful Pathways through Adolescence, chaired by Richard Jessor, for their role in launching and this study.

Correspondence concerning this article should be addressed to Nancy E. Hill, Graduate School of Education, Harvard University, Graduate School of Education, Larsen, 703, 14 Appian Way, Cambridge, MA 02138. E-mail: hillna@gse.harvard.edu

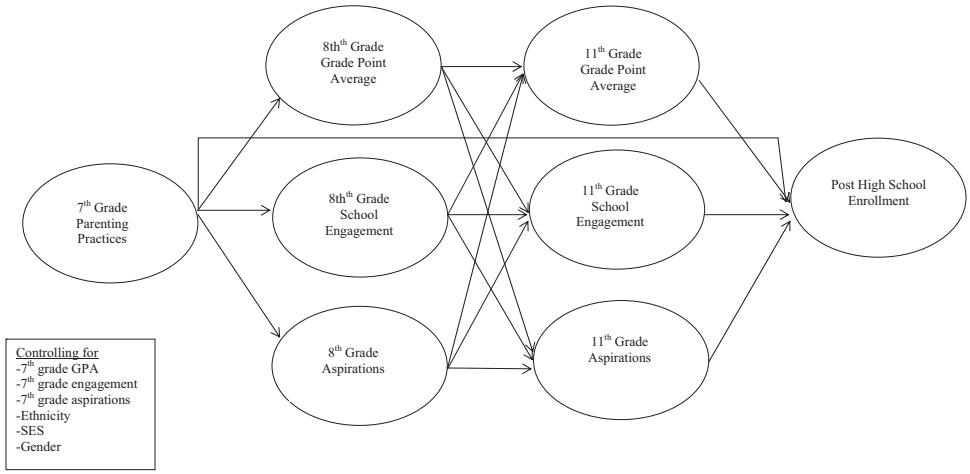


Figure 1. Hypothesized model.

(GPA), and aspirations, which in turn, will be positively associated with post high school enrollment. Finally, based on prior research reviewed later in this introduction, we expected variations across ethnicity and prior achievement levels, whereby monitoring will be more strongly related to GPA, engagement, and aspirations for African Americans, compared with European Americans, and autonomy support with be more strongly related to these constructs for European Americans, compared with African Americans.

Among domains of parenting practices, autonomy support, monitoring, and warmth increase in salience during adolescence as youth have greater control over their own development (Collins & Laursen, 2004; Eccles, 2007; Steinberg & Silk, 2002). Parental autonomy support is the provision of opportunities for youth to make choices, participate in decision-making, and develop solutions to problems independently (Grolnick & Ryan, 1989; Wong, 2008). Parental monitoring includes providing clear and consistent guidelines and maintaining knowledge about youth's whereabouts, activities, and friendships (Coley & Hoffman, 1996; Fulton & Turner, 2008). Parental warmth reflects the affective relationship between the parent and child (Juang & Silbereisen, 2002). These parenting practices are related to outcomes in adolescence and early adulthood, as well as related to more proximal outcomes like school engagement and achievement.

These types of parenting practices are related to school engagement during middle school and educational attainment at age 26 (Melby et al., 2008). Parenting practices also are associated with other outcomes in early adulthood including general life satisfaction (Dumas, Lawford, Tieu, & Pratt, 2009), substance use (Gutman, Eccles, Peck, & Malanchuk, 2011), and relationship quality (Nosko, Tieu, Lawford, & Pratt, 2011). Whereas parenting practices remain important through early adulthood, there are plausibly more proximal factors that explain the impact of parenting on early adult outcomes, including developing aspirations, school achievement, and engagement.

Parents' role during adolescence is to support the development of sound goals and identities and help youth conduct themselves in ways that are consistent with those identities (Chao & Hill, 2009). Youth move from parent-encouraged pursuits to developing and pursuing their own interests and identities. Parenting practices during middle school are associated with educational aspirations in late high school (Hill et al., 2004; Jodl et al., 2001; Perry, Liu, & Pabian, 2010). Positive relationships with parents are associated with higher educational expectations in late adolescence (Trusty, 1998) and quality increased likelihood that children will take advantage of opportunities (Bryant, Zvonkovic, & Reynolds, 2006). Autonomy support is particularly effective in helping youth internalize socialization goals (Joussemet, Landry, & Koestner, 2008). As adolescents are solidifying their identities, parents' role is to encourage school engagement, help youth experience successes, help interpret these successes (Eccles et al., 1983), and develop appropriate goals. Therefore, we hypothesized that autonomy support, monitoring, and warmth will be positively related to aspirations.

There is even stronger evidence for the relation between parenting practices and academic achievement during adolescence. Autonomy support, as reflected in authoritative parenting, is positively associated with academic achievement, especially among European American samples (Eccles, Early, Fraser, Belanksy, & McCarthy, 1997; Steinberg, Dornbusch, & Brown, 1991; Steinberg, Lamborn, Dornbusch, & Darling, 1992). Youth who are monitored more, even if they are unsupervised, have higher levels of academic achievement than those who are monitored less (Coley & Hoffman, 1996; Eccles et al., 1997; Fulton & Turner, 2008). In addition, parental warmth is associated with self-confidence and efficacy at the transition to middle school and higher grades at the transition to high school (Juang & Silbereisen, 2002). A single composite of "involved parenting" (i.e., communication, use of inductive reasoning, warmth, and responsiveness) was positively related to achievement across 4 years of middle and early high school, even after controlling for prior achievement (Melby & Conger, 1996). Further, it is indirectly related to educational attainment when youth were 26 years old (Melby et al., 2008). Therefore, we also hypothesized that monitoring, autonomy support, and warmth will be positively related to students' grades.

In addition to aspirations and achievement, parenting practices have been shown to increase school engagement. Autonomy support, monitoring, and warmth are associated with increased interest in, engagement in, and motivation for achievement (Annunziata,

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Hogue, Faw, & Liddle, 2006; Eccles, 2007; Grolnick & Ryan, 1989; Murray, 2009; Steinberg, Dornbusch, & Brown, 1991). Whereas these studies examined general engagement, school engagement has been conceptualized as three types: *Behavioral*, including completing homework, participating in school activities, and paying attention; *Emotional*, including students' sense of belonging and attachment to school; and *Cognitive*, including students' commitment to school and ability to plan and develop strategies for learning (Fredricks, Blumenfeld, & Paris, 2004). Examining behavioral and cognitive engagement, parental support curbed general declines in engagement (Wang & Eccles, 2012b) and was positively related to emotional engagement (Melby et al., 2008). Based on these findings, we hypothesized a positively relation between parenting and school engagement, as well. However, these seemingly consistent associations between parenting practices and academic outcomes potentially mask ethnic differences.

In contrast to findings with European Americans, autonomy support is not consistently related to academic outcomes among African Americans (Gutman, Sameroff, & Eccles, 2002). Indeed, autonomy support, reflecting youth-involved decision making, is related to lower academic adjustment for African Americans (Baldwin, Baldwin, & Cole, 1990; Gonzales, Cauce, Friedman, & Mason, 1996). Similarly, authoritative parenting practices (i.e., autonomy support and democratic decision making) were not predictors of achievement for African Americans, whereas they were for other ethnic groups (Steinberg, Dornbusch, & Brown, 1991). Instead, directive parenting practices and rule enforcement are related to achievement among African Americans (Brody & Flor, 1998; Steinberg et al., 1992). As a partial explanation, parents who perceive threats to the health and development of their children were found to exercise more controlling parenting practices (Gurland & Grolnick, 2005), often as a means to protect their children. African American parents often find that there are real environmental threats to the likelihood that their children will reach their potential (Cross, 2011; Hill, 2011). Consistent with this premise, African American tend to use more directive parenting practices, including less autonomy-granting, and more monitoring and control and such parenting practices are associated with higher levels of achievement (Mason, Walker-Barnes, Tu, Simons, & Martinez-Arrue, 2004; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000). Because of these differences, we examined ethnic variations in our hypothesized model and expect that monitoring might be more strongly related to academic outcomes for African Americans, compared with European Americans, whereas autonomy support is expected to be more strongly related to academic outcomes for European Americans.

In examining parenting, engagement, and achievement, most studies have used a single indicator of parenting or a composite of parenting practices. Further, many of the studies of school engagement only examined one or two types. Finally, most studies have not included students' own aspirations as an organizer or motivator for achievement and as a mediating process through which parenting practices are related to engagement, achievement, and post high school enrollment. The present study simultaneously examined three types of parenting practices, three types of engagement, and adolescents' goals to understand how they function together to support post high school enrollment. As parenting practices cohere and function together, rather than in isolation, the present study extends our understanding by determining how parenting practices are uniquely related to different types of engagement and achievement, across ethnicity.

Whereas parenting practices are related to school engagement and aspirations and both aspirations and school engagement are central to students' post high school enrollment, it is less clear how aspirations, engagement, and achievement influence each other, function together, and are supported by parents. Do parenting practices encourage the development of youths' goals, which then motivate engagement and ultimately college enrollment (e.g., Eccles, 2007)? Or, do parenting practices increase adolescents' engagement and achievement in school directly, which serve to inform, increase, and solidify aspirations for youth (e.g., Simons-Morton & Chen, 2009)?

Among the mediating variables, aspirations may inspire, shape, and give meaning to school engagement (Fredricks et al., 2004; Wang & Eccles, 2012a) or engagement might inform aspirations. Based on Social Cognitive Theory (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001) and Self-Determination Theory (Park, Holloway, Arendtsz, Bempechat, & Li, 2012), adolescents internalize their goals and direct their own development by engaging in experiences that foster their emerging identities and goals. Youth who have well-developed aspirations have higher levels of engagement (Deci & Ryan, 2008) because their engagement has meaning for them (Fredricks et al., 2004; Wang & Eccles, 2012a). Similarly, Eccles' expectancy-value model suggests that youth will engage in school when they understand and internalize the importance of engagement and achievement for their future (Eccles, 2007). In contrast, students' school engagement has the potential to inform and shape goals. That is, observing one's own experiences at school (i.e., engagement and grades) provides the information needed to establish and meet realistic goals (Bandura, 1991). As youth understand their own potential through their engagement in school, they develop goals, which, in turn, motivate post high school educational pursuits. Aspirations may help youth internalize their engagement and engagement informs future goals so that they are reciprocal and self-perpetuating. Whereas some studies have only examined a single direction of effect or focused either on aspirations or engagement, this study addresses these directional and reciprocal effects and examines the role of parents in supporting them.

To this end, we tested a prospective, longitudinal model from parenting practices in 7th grade to educational outcomes 3 years postexpected high school graduation, while testing indirect effects through school engagement, GPA, and aspirations. Further, we tested the directional and reciprocal relations between aspirations and engagement, all while controlling for prior levels of achievement, engagement, and aspirations, gender, socioeconomic status (SES), and ethnicity. We also tested for differences between African Americans and European Americans and whether the parenting practices were differentially related to aspirations, engagement, and post high school enrollment across prior achievement levels.

This study used the MADICS dataset. There are numerous studies published on parenting, engagement, and achievement based on these intellectually rich data. The present study replicates some of this research, but extends it in important and significant ways. For example, whereas Wang and Eccles (2012b) found that supportive parenting practices curb declines in engagement, the

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

present study broadens the focus to three domains of parenting practices and links parenting across four waves of data to post high school enrollment through aspirations and engagement. Eccles et al. (1997) examined autonomy support, connection, and the provision of regulation from parents, peers, and school context as they relate to GPA using a single wave of the MADICS dataset. Our study extends these findings longitudinally and situates them among youth's aspirations, engagement, and post high school enrollment. Gutman, Sameroff, and Eccles (2002) examined parenting and achievement using only the African American sample from Wave 1 and found that democratic parenting was not related to achievement for African Americans, a finding that is consistent with other research on the benefits of more no-nonsense parenting for African Americans. Similarly, Gutman, Eccles, Peck, and Malanchuk (2011) found ethnic differences in the relations between parenting (i.e., negative interactions and positive identity with parents) and cigarette and alcohol use. The present study extends these findings by systematically testing the moderating role of ethnicity for three domains of parenting practices for engagement, achievement, and college enrollment. The present study examined prospective longitudinal relations between parenting and youths' college enrollment and identifies possible indirect effects through engagement, achievement, and aspirations.

Method

Participants

Because ethnicity and SES are often confounded, it is often difficult to determine whether differences between ethnic groups are truly ethnic differences and not differences based on SES or other confounding factors. Therefore, to effectively examine ethnic variations in the hypothesized model, it was important that the African American and European American samples are as similar as possible in demographic background and communities of residence. Although economic background and ethnicity are confounding in the United States, the MADICS sample comes close to achieving this level of comparability. The sample is broadly representative of SES levels, with the mean pretax, family annual income between $45,000 and $49,999 (range: $5,000 to >$75,000), 86% of primary caregivers were employed, 54% were high school graduates, with 40% college graduates. Furthermore, in the county from which MADICS sample was drawn, the socioeconomic distribution is nearly equivalent for the African American and European American populations (Cook, Herman, Phillips, & Settersten, 2002; Eccles et al., 1997; see also www.rcgs.isr.umich.edu/garp for details). Parents in African American families reported somewhat lower family income levels (range of $40K to $44,999 vs. $50K to $54,999) and years of education (M = 14.16 vs. M = 15.11) than did parents of European American families (Gutman et al., 2011). Notably, these differences are smaller than usual. Nevertheless, we controlled for SES and examined ethnicity in the analyses.

As described in numerous MADICS publications, participants were recruited from 23 of 25 middle schools in a single large county (e.g., Eccles et al., 1997). Among the 1,961 who agreed to be contacted, a sample of 1,472 families (75%) agreed to participate. Most of those who declined reported time constraints, scheduling conflict, and disinterest as the chief reasons. In this study, we used Wave 1, collected when the adolescents were in 7th grade (mean age = 12.9 years), Wave 3, collected when the adolescents were in 8th grade (mean age = 14.5 years), Wave 4, collected when most of the adolescents were in 11th grade (mean age = 17.4 years), and Wave 6, collected 3 years beyond when most of the adolescents graduated from high school (mean age = 21.6 years).

The MADICS sample is 58% African American, 35% European American (7% were biracial or other ethnic minorities), and 51% female. In this study, we used data from African Americans and European Americans from Wave 1 (n = 1,452), Wave 3 (n = 1,157), Wave 4 (n = 1,084), and Wave 6 (n = 987). Waves 3, 4, and 6 retained 72%, 81%, and 84% of the sample from Wave 1 (Peck & Eccles, nd). For the entire dataset, data are missing at random (MAR; Little & Rubin, 1987). Those with missing data differ from those without missing data, but the differences cannot be predicted from variables used in this study or in the full dataset, with the exception of achievement (Peck & Eccles, nd). However, the full range of GPA was represented in the sample, although the lower end of the distribution was somewhat underrepresented. Therefore, there remains evidence that this sample is valid to address the questions posted in this study.

Procedures

Letters requesting consent to contact were sent to families of 7th graders. Interested families signed and returned a form. Face-to-face interviews were conducted, along with self-administered questionnaires for adolescents and their primary caregivers, respectively, for Waves 1, 3, and 4. Interviews were conducted by ethnically matched interviewers and took approximately 1 hr and the self-administered questionnaire took approximately 30 min to complete. Adolescents were paid $20 for participation for Waves 1, 3, and 4. Wave 6 data were self-administered questionnaires. Adolescents received $35 for their participation in Wave 6.

Measures

Post high school enrollment. Adolescents' post-high school enrollment was assessed at Wave 6 by a single, self-reported item: "What is the highest grade of school you have completed? "Responses were on a 10-point scale, ranging from 10th grade or below to completion of a bachelor's degree. All items for all constructs can be found in online Supplemental material, Appendix A.

School engagement. Three types of school engagement were assessed (i.e., Behavioral, Cognitive, and Emotional) and GPA, an indicator of effort and achievement. This combination of engagement and GPA as an operationalization of school engagement has been used in prior research (e.g., Melby et al., 2008). Behavioral, emotional, and cognitive engagement were assessed in 7th, 8th, and 11th grades. The assessments have strong psychometric properties across gender and ethnicity (Wang, Willett, & Eccles, 2011). They were scaled such that the higher scores indicate higher school engagement. *Behavioral engagement* was assessed by five items adapted from (Elliott, Huizinga, & Menard, 1989) and reliability was acceptable (α = .86–.90 for African Americans and α = .85–.90 for European Americans between 7th and 11th grades). *Emotional engagement* was assessed by using five items originally from The Michigan Study of Adolescent Life Transitions study (Eccles et al., 1993) and reliability was acceptable (α = .89–.94

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

for African Americans and α = .91–.94 for European Americans between 7th and 11th grades). *Cognitive engagement* was assessed by six items (Eccles et al., 1993) and was reliable (α = .85–.88 for African Americans and α = .87–.88 for European Americans between 7th and 11th grades). Adolescents' GPAs in 7th and 8th grades were collected from their school records. In 11th grade, they were collected through students' self-report. GPA was an average of adolescents' grades in the core subjects (English, math, science, and social sciences). Letter grades were converted into numerical values (A = 5, B = 4, C = 3, D = 2, and Failing = 1).

Educational aspirations. Adolescents' educational aspirations were assessed by two items commonly used in national surveys to assess aspirations at 7th, 8th, and 11th grades (e.g., PSID, Add Health, and NELS and in other published work; Hill et al., 2004; Wang & Eccles, 2012a). The first item was "If you could do exactly what you wanted, how far would you like to go in school?" To increase the likelihood of obtaining realistic and thoughtful goals and to be consistent with other work on aspirations, a second question was asked: "We cannot always do what we most want to do. How far do you think you actually will go in school?" Each question was rated along a 9-point scale, ranging from 9–11th grade to earning a doctorate (e.g., PhD, JD, MD, DO, or DVM). These two items are highly correlated (r = .79). A mean score was created at each wave. Higher scores indicate higher levels of educational aspirations.

Parenting practices. Parental monitoring, autonomy support, and warmth were assessed from mothers' perspective using items from the Family Management Study (Furstenberg, Cook, Eccles, Elder, & Sameroff, 1999). Items were rated on a Likert Scale ranging from *never* to *always.* For *Parental Monitoring*, four items reflected the degree to which parents monitor their children's activities, whereabouts, and plans in the past three months (α = .87 and .85 for African Americans and European Americans, respectively). For A*utonomy Support*, four items were used to assess the degree of autonomy and decision-making opportunities parents provided (α = .86 and .87 for African Americans and European Americans, respectively). For *Parental Warmth*, six items were used that pertained to the amount of trust, warmth, fun, and togetherness between parents and adolescents in the past 3 months (α = .92 and .90 for African Americans and European Americans, respectively).

Demographic variables. Gender and ethnicity were assessed by student self-report (0 = girl, 1 = boy; 0 = European American, 1 = African American). The SES indicators included highest family educational attainment, employment status, and combined family income reported by primary caregiver. To create a composite SES indicator, we standardized these indicators and averaged them (M = 0.57, SD = 0.86, α = .77; range from −2.15 to 2.31).

Data Analyses

We used structural equation modeling (SEM) in the Mplus 6.1 program to fit the hypothesized path models to data (see Figure 1). Mplus was chosen, in part, because the data were nested (students were nested within 23 schools). Mplus is able to account for nested data by fitting a multilevel model with random-effects and produce correctly adjusted standard errors in the model estimations. The amount of missing data was less than 7% and the data were missing completely at random, as evidenced by nonsignificant results derived from the generalized least squares combined test of homogeneity of means and covariance matrices representing complete and incomplete data, $\chi^2(1,452) = 945.37$, $p = .14$ (Little, 1988). Missing data were handled through full-information maximum likelihood estimation, allowing us to include all available data and identifying the parameter values with the highest probability of producing the sample data (Baraldi & Enders, 2010).

First, we created latent factors for the parenting practices, GPA, and school engagement. We conducted a series of measurement models for each latent variable using confirmatory factor analysis (CFA) to verify that the hypothesized constructs measure discrete, single latent variables. Then, we tested the relations among parenting, school engagement, aspirations, and post high school enrollment using SEM. We used cross-lagged panel analysis to evaluate the reciprocal relations between grades/engagement and aspirations between 8th and 11th grades. We controlled for stability of each construct over time and we controlled for demographic background (i.e., SES gender, and ethnicity) and 7th grade assessments of GPA, school engagement, and aspirations by including paths between each control variable and all variables in the model. We estimated indirect effects of parenting practices on post high school enrollment through aspirations and engagement with delta method of standard errors (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). We examined the model fit on the basis of the χ^2 Statistic, the Comparative Fit Index (CFI), the Standardized Root Mean Square Residual (SRMR), and the Root Mean Square Error Estimate (RMSEA). Finally, to determine whether the theoretical model was generalizable across ethnicity or students' prior academic achievement levels, we conducted two sets of multigroup models that compared models where the factor loadings were free to vary across ethnicity or prior achievement level with models where the factor loadings were constrained to be equal. If the constraints led to a significant decrease in overall model fit, it would indicate that there were differences across the groups in the pattern of associations. For academic ability, we divided the sample into "high," "moderate," and "low" achievers based on their average grades in 7th grade (Wave 1). The high achieving group was defined as having a GPA that was 0.5 SD above the mean (group M = 4.50, n = 600). The low achieving group included students whose GPAs were 0.5 SD below the mean (group M = 3.19, n = 400). The moderate achieving group included students who had GPAs within 0.5 SD of the mean (group M = 3.96, n = 452). We removed the moderate achieving group and ran the multigroup analysis between the high and low achieving groups to increase confidence in the findings. The two groups differed significantly on GPA, $t(998) = 37.52$, $p < .001$. African Americans and European Americans were equally likely to be in the high or low achievement groups ($\chi^2(3) = 6.13$, *ns* for high achievement and $\chi^2(3) = 7.24$, *ns* for low achievement).

Results

Correlations among the study variables and a multivariate analysis of covariance (MANCOVA) to test mean differences across ethnicity were calculated (see online Supplemental material Appendix B for correlations and Table 1 for means). The magnitudes and direction of the correlations provide support for our model. There were mean level differences across ethnicity, with European

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 1
Summary of Adjusted Means From Analyses of Covariance

	Overall *M* (*SD*)	African American *M* (*SD*)	European American *M* (*SD*)	Multivariate *F*
Parental monitoring (7)	4.26 (0.77)	4.21 (0.78)	4.35 (0.73)	5.61**
Provision of autonomy (7)	2.94 (0.73)	2.87 (0.73)	3.06 (0.72)	12.96***
Parental warmth (7)	4.11 (1.01)	4.19 (1.09)	3.96 (1.05)	19.17***
Educational aspiration (8)	7.42 (1.36)	7.41 (1.38)	7.49 (1.25)	4.48*
Educational aspiration (11)	6.76 (1.59)	6.65 (1.62)	6.98 (1.53)	5.31**
GPA (8)	3.64 (0.86)	3.44 (0.86)	4.01 (0.75)	58.23***
GPA (11)	3.32 (0.96)	3.06 (0.95)	3.55 (0.96)	5.51**
Behavioral engagement (8)	4.23 (0.96)	4.13 (0.97)	4.39 (0.92)	10.48***
Emotional engagement (8)	3.30 (0.81)	3.34 (0.81)	3.24 (0.81)	1.67
Cognitive engagement (8)	3.76 (0.69)	3.72 (0.71)	3.84 (0.67)	0.75
Behavioral engagement (11)	4.03 (1.16)	4.09 (1.11)	3.94 (1.23)	1.04
Emotional engagement (11)	3.22 (0.87)	3.22 (0.85)	3.24 (0.91)	4.52*
Cognitive engagement (11)	3.96 (0.66)	3.98 (0.65)	3.95 (0.66)	0.81
Post high school enrollment	7.62 (1.93)	7.44 (1.97)	7.98 (1.85)	7.04***
SES	6.07 (1.73)	6.00 (1.46)	6.22 (0.50)	14.21***

Note. SD = standard deviation; GPA = grade point average; SES = socioeconomic status. We included socioeconomic status and 7th grade achievement as covariates.

Americans reporting higher monitoring and provision of autonomy. Autonomy support is similar to, although a broader construct than, the single item on decision-making reported in Gutman and Eccles (2007), which reported similar ethnic differences. In contrast, African Americans reported higher levels of warmth. European Americans had higher GPAs and educational aspirations at 8th and 11th grade, higher levels of behavioral engagement at 8th grade (but not 11th), and higher levels of emotional engagement at 11th grade (but not 8th). These findings are similar to ethnic differences in Wave 1 levels reported in Wang and Eccles (2012a). Finally, European Americans had higher post high school enrollment than did African Americans.

Model Testing

We began by testing the fit of the measurement model using CFA. All variables were allowed to intercorrelate simultaneously. The measurement model provided good fit. The standardized factor loadings ranged from .39 to .81 and were all statistically significant at the .05 level. To test the fit of the hypothesized model and the cross-lagged panel analysis, we first tested a baseline model (Model 1 in Table 2) that examined the temporal stability of GPA, educational aspirations, and school engagement across time and the relations between parenting at 7th grade and these variables and their impact on post high school enrollment, all while controlling for 7th grade levels of the constructs, gender, ethnicity, and SES. The fit of this baseline model was poor, $\chi^2(46, 1{,}452) = 432.45$, $p < .001$, CFI = .88, RMSEA = .11, SRMR = .12. To test our hypothesized model and the reciprocal relations among aspirations, grades, and school engagement, we examined three alternative models (Models 2, 3, and 4, in Table 2). With Models 2 and 3, we tested the direction of effects and reciprocal relations among aspirations, grades, and school engagement.

Table 2
Summary of Goodness-of-Fit Statistics for Hypothesized Model Fitting and Model Comparison

Model testing	χ^2	*df*	*p*	CFI	RMSEA	SRMR
Model 1: Baseline model (stability)	432.45	46	<.001	.88	.11	.12
Model 2: Alternative model (Aspiration to engagement and GPA)	421.57	42	<.001	.90	.10	.10
Model 3: Alternative model (Engagement and GPA to aspiration)	419.23	42	<.001	.91	.08	.08
Model 4: Alternative model (cross-lagged)	401.63	38	<.001	.97	.02	.03
Model 5: Trimmed model	404.67	40	<.001	.97	.02	.03

Model comparison	$\Delta\chi^2$	*df*	*p*
2 vs. 1	10.88	4	<.05
3 vs. 1	13.22	4	<.05
4 vs. 1	30.82	8	<.001
2 vs. 4	19.94	4	<.01
3 vs. 4	17.57	4	<.01
4 vs. 5	3.04	2	*ns*

Note. CFI = Comparative Fit Index; RMSEA = root mean square error estimate; SRMR = standardized root mean square; GPA = grade point average.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Model 2 examined solely the effects from 8th grade aspirations to 11th grade school engagement and GPA, along with the role of parenting and the effects on post high school enrollment and the fit was adequate $\chi^2(42, 1{,}448) = 421.57$, $p < .001$, CFI = .90, RMSEA = .10, SRMR = .10. Similarly, Model 3, which tested the effects from 8th Grade GPA and school engagement to 11th grade aspirations fit the data adequately, $\chi^2(42, 1{,}448) = 419.23$, $p < .001$, CFI = .91, RMSEA = .08, SRMR = .08. However, Model 4, which included the reciprocal effects of school engagement, GPA, aspirations, along with 7th grade parenting and post high school enrollment fit, the data significantly better than the baseline model, $\Delta\chi^2(8) = 26.82$, $p. < .001$, and better than the alternative models (see comparison at the bottom of Table 2). Finally, we removed nonsignificant paths from Model 4 and tested the fit of the trimmed model (Model 5) and compared the fit to Model 4. The χ^2 difference test was not significant, $\Delta\chi^2(2) = 3.04$, *ns*, indicating that removing the nonsignificant paths did not affect the fit of the model. Because the trimmed model (i.e., Model 5) is more parsimonious than Model 4, we selected this model as our final model (see Figure 2; see online Supplemental material Appendix C for table of coefficients for control variables).

As shown in Figure 2, all three parenting practices were positively and significantly related to aspirations, GPA, and behavioral engagement. In addition, warmth was positively related to cognitive and emotional engagement. In fact, warmth was related to all four endogenous constructs. Autonomy support was also positively associated with cognitive engagement and monitoring was positively related to emotional engagement. Among the endogenous variables, higher levels of educational aspirations at 8th grade were related to increases in GPA and the three types of school engagement between 8th and 11th grades. Further, higher levels of GPA and school engagement at 8th grade were associated with increases in educational aspirations. The cross-lagged paths were significant. All three types of engagement, aspirations, and GPA in 11th grade were positively associated with post high school enrollment, with slightly stronger relationships for GPA and aspirations, than for school engagement.

To determine whether the paths from 8th grade aspirations to 11th Grade GPA and school engagement were stronger or weaker than the paths from 8th Grade GPA and school engagement to 11th grade aspirations, we tested the differential contribution of the cross-lagged paths. We compared the model with another model in which the four cross-lagged paths were constrained to be equal. The model specifying invariant cross-lagged paths differed significantly from the model without the invariant constraints, $\Delta\chi^2(4) = 14.51$, $p. < .01$. We then released the constraint on the cross-lagged paths between aspirations and the three types of school engagement and the model was not significantly different, $\Delta\chi^2(1) = 1.02$, *ns*. The findings suggest that the contributions of 8th grade aspirations to 11th grade behavioral, emotional, cognitive engagement (β = .22, .20, and .26, respectively) were stronger than the contributions of 8th grade behavioral, emotional, and cognitive engagement to 11th grade aspirations (β = .10, .09, and .16, respectively).

Further, looking across middle and high school (i.e., from 7th grade to post high school), controlling for prior levels of engagement, aspirations, GPA, and demographics, parenting practices had a significant indirect effects on post high school enrollment (see Table 3). The direct effects from parenting to post high school enrollment were not significant. Next, we tested whether the final

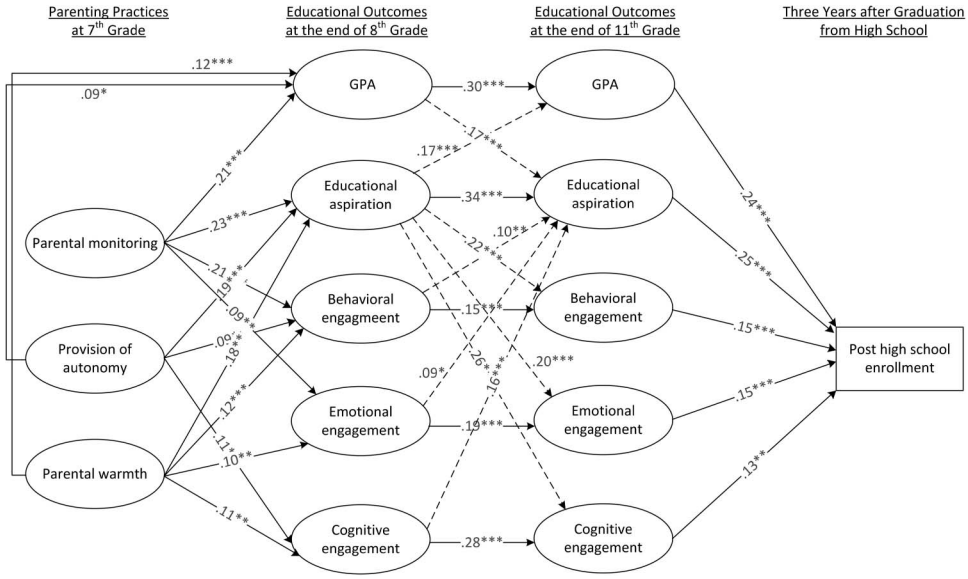


Figure 2. Path model depicting the longitudinal relations among parenting practices, educational aspiration, engagement, and post high school enrollment. All coefficients are standardized and statistically significant at $p < .05$. Dashed lines between the mediating variables at 8th and 11th grades reflect the hypothesized paths of interest (i.e., alternative models), whereas the solid lines represent the stability coefficients (i.e., Baseline Model). Paths for the controlling variables (i.e., gender, ethnicity, socioeconomic status [SES], educational aspiration, grade point average [GPA], and school engagement in 7th grade) to outcome variables at 8th, 11th, and post high school can be accessed in online Supplemental material Appendix B.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 3
Standardized Direct, Indirect, and Total Effects for the Final Model

Predictors	Post high school education		
Effect	Direct effect	Indirect effect	Total effect
Parental monitoring	.08	.25***	.33***
Autonomy support	.06	.19***	.25***
Parental warmth	.07	.20***	.27***

trimmed model fit similarly across ethnicity and prior achievement levels.

Ethnic Variations

To determine whether ethnicity moderated the trimmed model, a multigroup SEM analysis was conducted where a model that allowed the factor loadings to vary across ethnicity was compared with a model where the factors loadings were constrained to be equal (see Table 4). The multigroup model with paths allowed to vary across ethnicity provided a good fit to the data, $\chi^2(80) = 947.42$, $p < .001$, CFI = .96, RMSEA = .03, SRMR = .03. However, when the paths were constrained to be equal across groups, the model fit the data less well, $\Delta\chi^2(30) = 51.22$, $p < .01$. There were significant ethnic differences. Parental monitoring was more strongly associated with GPA and with behavioral engagement for African Americans (GPA: $\beta = .29$, $p < .001$; behavioral engagement: $\beta = .30$, $p < .001$) than for European Americans (GPA: $\beta = .14$, $p < .01$; behavioral engagement: $\beta = .16$, $p < .01$). Conversely, the parental autonomy support was more strongly and positively related to GPA for European American adolescents ($\beta = .15$, $p < .001$); the coefficient for African American youth failed to reach significance ($\beta = .05$, *ns*). All other paths were similar across ethnicity.

Variations Across Prior Achievement Levels

Similar to the analysis across ethnicity, a multigroup SEM analysis was conducted to test for differences based on prior achievement levels (see Table 4). The multigroup model with paths estimated freely for high and low achievers provided a good fit to the data, $\chi^2(80) = 884.30$, $p < .001$, CFI = .95, RMSEA = .03, SRMR = .04. When equality constraints were imposed, three paths between parenting practices and educational outcomes at 8th grade were found to be significantly different across groups, $\Delta\chi^2(30) = 37.54$, $p < .05$. The positive associations between parental monitoring and GPA and behavioral engagement were stronger for low achievers (GPA: $\beta = .30$, $p < .001$; behavioral engagement: $\beta = .27$, $p < .001$) than for high achievers (GPA: $\beta = .13$, $p < .001$; behavioral engagement: $\beta = .14$, $p < .001$). Further, the positive association between autonomy support and educational aspiration was stronger for high achievers ($\beta = .27$, $p < .001$) than for low achievers ($\beta = .10$, $p < .05$). All other paths were similar across achievement levels.

In summary, parenting practices in 7th grade had significant indirect effects on college enrollment 3 years post high school, through their effects on aspirations, school engagement, and GPA. All three parenting practices were related to aspirations and behavioral engagement at 8th grade, with two of the three parenting

Table 4
Multigroup Analysis by Race/Ethnicity and Academic Ability

Racial/ethnic differences	Model statistics and comparisons: $\chi^2(df)$	P (for $\Delta\chi^2$)
1. Baseline model	947.42 (80)	—
2. Parenting practices → Educational outcomes at 8th grade	**978.10 (95)**	**.01**
Monitoring → GPA (stronger for black)	**975.60 (94)**	**.05**
Monitoring → Behavioral engagement (stronger for black)	**969.95 (93)**	**.05**
Autonomy support → GPA (stronger for white)	**964.97 (92)**	**.05**
3. Educational outcomes at 8th grade → Educational outcomes at 11th grade	986.73 (105)	*ns*
4. Educational outcomes at 11th grade → Post high school education	996.52 (110)	*ns*

Academic ability differences	Model statistics and comparisons: $\chi^2(df)$	P (for $\Delta\chi^2$)
1. Baseline model	884.30 (80)	—
2. Parenting practices → Educational outcomes at 8th grade	**914.89 (95)**	**.01**
Monitoring → GPA (stronger for low achievers)	**910.25 (94)**	**.05**
Monitoring → Behavioral engagement (stronger for low achievers)	**906.74 (93)**	**.05**
Autonomy support → Educational aspiration (stronger for high achievers)	**902.07 (92)**	**.05**
3. Educational outcome at 8th grade → Educational outcomes at 11th grade	924.32 (105)	*ns*
4. Educational outcomes at 11th grade → Post high school education	930.34 (110)	*ns*

Note. GPA = grade point average. Bolded pathways denote differences across groups.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

practices related to emotional and cognitive engagement. The reciprocal relations between aspirations and engagement/GPA were significant, although the effects from 8th aspirations to 11th engagement were stronger than the reverse path. Ethnic differences were found only for parenting practices: monitoring had stronger associations with GPA and behavioral engagement for African Americans, whereas autonomy support had stronger associations with GPA for European Americans. Across achievement levels, monitoring was more strongly related to GPA and behavioral engagement for low achievers, whereas autonomy support was more strongly related to aspirations for high achievers.

Discussion

Parenting practices during middle school has both short term positive associations with aspiration, grades, and school engagement *and* long term effects on college enrollment post high school. Longitudinally, from 7th grade to 3 years post high school, the three parenting practices had significant indirect effects on college enrollment through the reciprocal effects of engagement and aspirations. Whereas this is counter to conventional beliefs that parental influence wanes during adolescence, it is consistent with a critical review of the research on developmental patterns of parent-adolescent relationships (Laursen & Collins, 2009). Further, the pathways from 8th grade aspirations to 11th grade engagement and GPA were stronger than the reverse paths from 8th Grade GPA/engagement to 11th aspirations. The primacy of aspirations is consistent with Self-Determination Theory and Social Cognitive Theory, which suggest that when connected to their aspirations, engagement in school becomes self-motivating (Deci & Ryan, 1985; Fredricks et al., 2004; Park et al., 2012). Similarly, prior research shows that aspirations (i.e., career planning) serve to increase school engagement (Kenny, Blustein, Haase, Jackson, & Perry, 2006) and that parental support is related to aspirations and, in turn, engagement and grades (Perry et al., 2010). That said, the best fitting model included the reciprocal effects between aspirations and engagement/GPA, suggesting a dynamic and self-perpetuating cycle. More important, parents remain a significant influence through adolescence and early adulthood by promoting aspirations and helping youth see how their current endeavors fit their longer term goals and identities.

Parental Warmth Matters Broadly; Autonomy Support and Monitoring Matter Specifically

Warmth was directly related to aspirations, all three types of engagement, and GPA, and was indirectly related to college enrollment. Parental warmth provides an emotional foundation for youth that increases their sense of self-efficacy and beliefs in their abilities (Juang & Silbereisen, 2002) and promotes a internalized sense of competence that results in healthy exploration, adaptation, and attachments with people at school and with school itself (Furrer & Skinner, 2003; Perry et al., 2010). Parental warmth provides support that adolescents need to grapple with their goals, develop attachments to school (i.e., emotional engagement), think planfully about school (i.e., cognitive engagement), and stay focused (i.e., behavioral engagement; Ehrlich, Dykas, & Cassidy, 2012). Not only does parental warmth support aspirations, but through engagement and GPA, it helps youth achieve their post-secondary school goals.

All three parenting practices were related to aspirations, GPA, and *behavioral* engagement. The provision of a warmth, opportunities to make decisions (i.e., autonomy support), and appropriate monitoring, together, create a developmental niche in which youth can explore their interests, develop goals, manage day to day schoolwork, and do well (i.e., behavioral engagement and GPA), and, through these, enroll in college post high school. In contrast to behavioral engagement, *emotional* and *cognitive* engagement, which are more internal to the student, seem to benefit from more targeted parenting practices. Autonomy support was related to aspirations, GPA, behavioral and *cognitive* engagement, and indirectly to post high school enrollment, but not to emotional engagement. Whereas Autonomy Support has been associated with achievement and engagement more generally (Grolnick & Ryan, 1989; Steinberg et al., 1992; Wong, 2008), the current study differentiates engagement and demonstrates the value of autonomy support for encouraging independent planning around schoolwork. Through autonomy support, parents can scaffold youth's ability to take responsibility for their schoolwork and think comprehensively about schoolwork, by knowing when to provide support and when to let students succeed and fail on their own.

In contrast, monitoring was related to aspirations, GPA, behavioral and *emotional* engagement, and indirectly to post high school enrollment, but not cognitive engagement. Youth who are monitored more have been shown to have higher achievement levels (Coley & Hoffman, 1996; Fulton & Turner, 2008). However, the current study also demonstrates its impact on students' sense of belonging to school and aspirations. As youth move through secondary schools that are more complex socially and bureaucratically, parental monitoring may provide a guide and checkpoint to assure that youth are associating with peers who affirm their identities and to steer them away from contexts and situations that might put them at risk. Indeed, with middle school samples, parental monitoring was associated with fewer behavioral problems (Lowe & Dotterer, 2013) and a reduction in associating with "problem-behaving" friends (Simons-Morton & Chen, 2009). Parental monitoring serves to help youth stay on task (behavioral engagement), find their connection to school, achieve, and develop aspirations, and ultimately be prepared for college.

Ethnicity Matters Only for Parenting

There were ethnic differences in the relations between parenting and the mediators. Parental monitoring had a stronger and more positive relation with GPA and *behavioral* engagement for African Americans. The greater significance of parental monitoring for African Americans is consistent with prior research that has demonstrated the developmental benefits of higher levels of control for African Americans and those who perceive threats to the success and opportunity structure for their youth (Gurland & Grolnick, 2005; Mason et al., 2004; Pinderhughes et al., 2000). Such threat may be because of stereotypes of low achievement, negative peer influences, or other types of threat (Hill, 2011). Similarly, given that those who enter middle school with lower levels of achievement are at greater risk for declines in school engagement (Li & Lerner, 2011), parenting practices that track or monitor the pragmatics of school (e.g., behavioral engagement and GPA) may be more necessary to support students' ultimate success.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

In contrast to parental monitoring, parental autonomy support was more strongly and positively related to GPA for European Americans, but was not significant for African Americans. Although autonomy support is a hallmark of parenting for adolescence (Collins & Laursen, 2004; Steinberg & Silk, 2002), African American families, like many ethnic minority families, are less likely to prioritize the development of independence and autonomy during adolescence (Garcia Coll, Meyer, & Brillon, 1995; Gurland & Grolnick, 2005). This is consistent with the findings showing the increased salience of monitoring. An interesting finding was that although monitoring, and not autonomy support, was positively associated with GPA and the pragmatics of school (i.e., *behavioral* engagement), there were no ethnic differences in the role of autonomy support for developing aspirations and *cognitive* engagement. For African American parents, a delicate balance is needed to capture the benefits of higher levels of monitoring and control for promoting good grades and staying on task *and* the benefits of promoting autonomy for developing aspirations and the planful independence to achieve them. Parental warmth, not surprisingly, is equally beneficial for supporting aspirations, engagement, and achievement across ethnicity and prior achievement levels.

Whereas many studies have examined associations among parenting, school engagement, and academic achievement (Annunziata et al., 2006; Eccles et al., 1997; Furrer & Skinner, 2003; Murray, 2009; Simons-Morton & Chen, 2009; Taylor & Lopez, 2005), this study builds on this literature by determining the specificity by which parenting practices are linked to specific types of school engagement, school performance, aspirations, and ultimately college enrollment. The present study extends the work in this area by showing the greater significance of the paths from aspirations to engagement; the significance of the reciprocal relations between aspirations and engagement; and the role of parenting practices in guiding and promoting aspirations, engagement, and the longer term realization of these goals through college enrollment 3 years beyond one's expected high school graduation date.

This study is not without limitations. First, our assessment of aspirations is based on two questions (what students hope to achieve educationally and realistically believe they will achieve). Adolescents have deeper and fuller ideas about their goals and how to achieve them, which were not captured in this two pronged measure. Further, students' aspirations, engagement, and family characteristics alone do not fully determine whether they will successfully enroll in college. This study does not address important contextual factors such as knowledge about and practical support for applying to college, beliefs about the opportunity structure in society, financial aid, and peer influences on college going identity development. We account for some of these contextual factors by controlling for SES. However, specific attention should be paid to these other factors. Finally, this study focuses solely on African Americans and European Americans when the American school population is increasingly diverse ethnically, economically, and linguistically. Despite these limitations, this study demonstrates the how parents can continue to support their youth through high school and beyond.

Adolescence is a time when parents struggle as they renegotiate their relationships with their teens and recalibrate their parenting practices to meet the demands for (and readiness for) increased autonomy and responsibility from their youth (Laursen & Collins, 2009), while curbing trends of decreased school engagement and achievement (Eccles, 2007; Wang & Eccles, 2012a). Capitalizing on youths' developmental needs for identity development and meaning making, imagining, and "trying on" plausible goals and aspirations is an elemental part of adolescent development (Oyserman, Bybee, & Kathy, 2006). Understanding parents' roles in helping to elicit purpose and engagement is essential. This study highlights the importance of parenting practices, especially establishing a warm and supportive relationship, in helping youth develop their aspirations and see meaning in their work, which can become self-motivating and keep youth engaged in school and on the right track post high school.

References

Annunziata, D., Hogue, A., Faw, L., & Liddle, H. A. (2006). Family functioning and school success in at-risk, inner-city adolescents. *Journal of Youth and Adolescence, 35,* 100–108. http://dx.doi.org/10.1007/s10964-005-9016-3

Baldwin, A., Baldwin, C., & Cole, R. E. (1990). Stress-resistant families and stress-resistant children. In J. E. Rolf, A. S. Maston, D. Ciccetti, K. N. Wechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 257–280). New York, NY: Cambridge University. http://dx.doi.org/10.1017/CBO9780511752872.016

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes, 50,* 248–287. http://dx.doi.org/10.1016/0749-5978(91)90022-L

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development, 72,* 187–206. http://dx.doi.org/10.1111/1467-8624.00273

Baraldi, A. N., & Enders, C. K. (2010). An introduction to modern missing data analyses. *Journal of School Psychology, 48,* 5–37. http://dx.doi.org/10.1016/j.jsp.2009.10.001

Brody, G. H., & Flor, D. L. (1998). Maternal resources, parenting practices, and child competence in rural, single-parent African American families. *Child Development, 69,* 803–816. http://dx.doi.org/10.1111/j.1467-8624.1998.tb06244.x

Bryant, B. K., Zvonkovic, A. M., & Reynolds, P. (2006). Parenting in relation to child and adolescent vocational development. *Journal of Vocational Behavior, 69,* 149–175. http://dx.doi.org/10.1016/j.jvb.2006.02.004

Chao, R. K., & Hill, N. E. (2009). Recommendations for developmentally appropriate strategies for parental involvement during adolescence. In N. E. Hill & R. K. Chao (Eds.), *Families, schools, and the adolescent: Connecting research, policy, and practice* (pp. 195–207). New York, NY: Teachers College Press.

Coley, R. L., & Hoffman, L. W. (1996). Relations of parental supervision and monitoring to children's functioning in various contexts: Moderating effects of families and neighborhoods. *Journal of Applied Developmental Psychology, 17,* 51–68. http://dx.doi.org/10.1016/S0193-3973(96)90005-2

Collins, W. A., & Laursen, B. (2004). Parent-adolescent relationships and influences. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 331–361). Hoboken, NJ: Wiley.

Cook, T. D., Herman, M. R., Phillips, M., & Settersten, R. A., Jr. (2002). Some ways in which neighborhoods, nuclear families, friendship groups, and schools jointly affect changes in early adolescent development. *Child Development, 73,* 1283–1309. http://dx.doi.org/10.1111/1467-8624.00472

Cross, W. E. (2011). The historical relationship between Black identity and

black achievement motivation. In N. E. Hill, T. L. Mann, & H. E. Fitzgerald (Eds.), *African American children's mental health: Development in context* (pp. 1–27). New York, NY: Praeger.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum Press. http://dx.doi.org/10.1007/978-1-4899-2271-7

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology, 49,* 182–185. http://dx.doi.org/10.1037/a0012801

Dumas, T. M., Lawford, H., Tieu, T.-T., & Pratt, M. W. (2009). Positive parenting in adolescence and its relation to low point narration and identity status in emerging adulthood: A longitudinal analysis. *Developmental Psychology, 45,* 1531–1544. http://dx.doi.org/10.1037/a0017360

Eccles, J. S. (2007). Families, schools, and developing achievement motivations and engagement. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of socialization: Theory and research* (pp. 665–691). New York, NY: Guilford Press.

Eccles, J. S., Adller, T. F., Futterman, R., Goff, S. B., Kaczela, C. M., & Meece, J. L. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motivations* (pp. 75–146). San Francisco, CA: Freeman.

Eccles, J. S., Early, D., Fraser, K., Belanksy, E., & McCarthy, K. (1997). The relation of connection, regulation, and support for autonomy to adolescents' functioning. *Journal of Adolescent Research, 12,* 263–286. http://dx.doi.org/10.1177/0743554897122007

Eccles, J. S., & Harold, R. D. (1993). Parent-school involvement during the early adolescent years. *Teachers College Record, 94,* 568–587.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., & Flanagan, C. (1993). Development during adolescence: The impact of stage environment fit on young adolescents' experiences in schools and in families. *American Psychologist, 48,* 90–101.

Ehrlich, K. B., Dykas, M. J., & Cassidy, J. (2012). Tipping points in adolescent adjustment: Predicting social functioning from adolescents' conflict with parents and friends. *Journal of Family Psychology, 26,* 776–783. http://dx.doi.org/10.1037/a0029868

Elliott, D. S., Huizinga, D., & Menard, S. (1989). *Multiple problem youth: Delinquency, substance & mental health problems*. New York, NY: Springer-Verlag. http://dx.doi.org/10.1007/978-1-4613-9637-6

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74,* 59–109. http://dx.doi.org/10.3102/00346543074001059

Fulton, E., & Turner, L. A. (2008). Students' academic motivation: Relations with parental warmth, autonomy granting, and supervision. *Educational Psychology, 28,* 521–534. http://dx.doi.org/10.1080/01443410701846119

Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology, 95,* 148–162. http://dx.doi.org/10.1037/0022-0663.95.1.148

Furstenberg, F., Jr., Cook, T., Eccles, J. S., Elder, G., Jr., & Sameroff, A. (1999). *Managing to make it: Urban families and adolescent success*. Chicago, IL: University of Chicago.

Garcia Coll, C. T., Meyer, E., & Brillon, L. (1995). Ethnic and minority parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 2. Biology and ecology of parenting* (pp. 189–210). Mahwah, NJ: Erlbaum.

Gonzales, N. A., Cauce, A. M., Friedman, R. J., & Mason, C. A. (1996). Family, peer, and neighborhood influences on academic achievement among African-American adolescents: One-year prospective effects. *American Journal of Community Psychology, 24,* 365–387. http://dx.doi.org/10.1007/BF02512027

Greene, J. P., & Winters, M. A. (2002). *Public school graduation rates in the United States* (*Civic Report No. 31*). New York, NY: Manhattan Institute for Policy and Research.

Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology, 81,* 143–154. http://dx.doi.org/10.1037/0022-0663.81.2.143

Gurland, S. T., & Grolnick, W. S. (2005). Perceived threat, controlling parenting, and children's achievement orientations. *Motivation and Emotion, 29,* 103–121. http://dx.doi.org/10.1007/s11031-005-7956-2

Gutman, L. M., Eccles, J. S., Peck, S., & Malanchuk, O. (2011). The influence of family relations on trajectories of cigarette and alcohol use from early to late adolescence. *Journal of Adolescence, 34,* 119–128. http://dx.doi.org/10.1016/j.adolescence.2010.01.005

Gutman, L. M., Sameroff, A. J., & Eccles, J. S. (2002). The academic achievement of African American students during early adolescence: An examination of multiple risk, promotive, and protective factors. *American Journal of Community Psychology, 30,* 367–399. http://dx.doi.org/10.1023/A:1015389103911

Gutman, L. M., & Eccles, J. S. (2007). Stage-environment fit during adolescence: Trajectories of family relations and adolescent outcomes. *Developmental Psychology, 43*(2), 522–537

Harris, A. L. (2008). Optimism in the face of dispair: Black-White differences in beliefs about school as a means for upward social mobility. *Social Science Quarterly, 89,* 608–630. http://dx.doi.org/10.1111/j.1540-6237.2008.00551.x

Helwig, A. A. (2008). From childhood to adulthood: A 15-year longitudinal career development study. *The Career Development Quarterly, 57,* 38–50. http://dx.doi.org/10.1002/j.2161-0045.2008.tb00164.x

Hill, N. E. (2011). Undermining partnerships between African-American families and schools: Legacies of discrimination and inequalities. In N. E. Hill, T. L. Mann & H. E. Fitzgerald (Eds.), *African American children's mental health (Vol. 1*: *Development and Context,* pp. 199–230). Santa Barbara, CA: Praeger.

Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development, 75,* 1491–1509. http://dx.doi.org/10.1111/j.1467-8624.2004.00753.x

Hill, N. E., & Chao, R. K. (2009). Introduction: Background in theory, policy, and practice. In N. E. Hill & R. K. Chao (Eds.), *Families, schools, and the adolescent: Connecting research, policy, and practice* (pp. 1–15). New York, NY: Teachers College Press.

Jodl, K. M., Michael, A., Malanchuk, O., Eccles, J. S., & Sameroff, A. (2001). Parents' roles in shaping early adolescents' occupational aspirations. *Child Development, 72,* 1247–1266. http://dx.doi.org/10.1111/1467-8624.00345

Joussemet, M., Landry, R., & Koestner, R. (2008). A self-determination theory perspective on parenting. *Canadian Psychology, 49,* 194–200. http://dx.doi.org/10.1037/a0012754

Juang, L. P., & Silbereisen, R. K. (2002). The relationship between adolescent academic capability beliefs, parenting and school grades. *Journal of Adolescence, 25,* 3–18. http://dx.doi.org/10.1006/jado.2001.0445

Kenny, M. E., Blustein, D. L., Haase, R. F., Jackson, J., & Perry, J. C. (2006). Setting the stage: Career development and the student engagement process. *Journal of Counseling Psychology, 53,* 272–279. http://dx.doi.org/10.1037/0022-0167.53.2.272

Laursen, B., & Collins, W. A. (2009). Parent-adolescent relationships and influences. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology: Vol. 2. Contextual influences on adolescent development* (3rd ed., pp. 3–42). Hoboken, NJ: John Wiley & Sons.

Li, Y., & Lerner, R. M. (2011). Trajectories of school engagement during adolescence: Implications for grades, depression, delinquency, and sub-

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

stance use. *Developmental Psychology, 47,* 233–247. http://dx.doi.org/10.1037/a0021307

Little, R. J. A. (1988). Robust estimation of the mean and covariance matrix from data with missing values. *Applied Statistics, 37,* 23–38.

Little, R. J. A., & Rubin, D. B. (1987). *Statistical analysis with missing data*. New York, NY: Wiley.

Lowe, K., & Dotterer, A. M. (2013). Parental monitoring, parental warmth, and minority youths' academic outcomes: Exploring the integrative model of parenting. *Journal of Youth and Adolescence, 42,* 1413–1425. http://dx.doi.org/10.1007/s10964-013-9934-4

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 7,* 83–104. http://dx.doi.org/10.1037/1082-989X.7.1.83

Mason, C. A., Walker-Barnes, C. J., Tu, S., Simons, J., & Martinez-Arrue, R. (2004). Ethnic differences in the affective meaning of parental control behaviors. *The Journal of Primary Prevention, 25,* 59–79. http://dx.doi.org/10.1023/B:JOPP.0000039939.83804.37

Melby, J. N., & Conger, R. D. (1996). Parental behaviors and adolescent academic performance: A longitudinal analysis. *Journal of Research on Adolescence, 6,* 113–137.

Melby, J. N., Conger, R. D., Fang, S.-A., Wickrama, K. A. S., & Conger, K. J. (2008). Adolescent family experiences and educational attainment during early adulthood. *Developmental Psychology, 44,* 1519–1536. http://dx.doi.org/10.1037/a0013352

Murray, C. (2009). Parent and teacher relationships as predictors of school engagement and functioning among low-income urban youth. *The Journal of Early Adolescence, 29,* 376–404. http://dx.doi.org/10.1177/0272431608322940

Nosko, A., Tieu, T.-T., Lawford, H., & Pratt, M. W. (2011). How do I love thee? Let me count the ways: Parenting during adolescence, attachment styles, and romantic narratives in emerging adulthood. *Developmental Psychology, 47,* 645–657. http://dx.doi.org/10.1037/a0021814

Oyserman, D., Bybee, D., & Kathy, T. (2006). Possible selves and academic outcomes: How and when possible selves impel action. *Journal of Personality and Social Psychology, 91,* 188–204.

Park, S., Holloway, S. D., Arendtsz, A., Bempechat, J., & Li, J. (2012). What makes students engaged in learning? A time-use study of within- and between-individual predictors of emotional engagement in low-performing high schools. *Journal of Youth and Adolescence, 41,* 390–401. http://dx.doi.org/10.1007/s10964-011-9738-3

Peck, S. C., & Eccles, J. S. (nd). *Attrition and missing data in the Maryland Adolescent Development in Context Study (through 6 waves and approximately 18 years of data collection).* Unpublished Report. Ann Arbor, MI.

Perry, J. C., Liu, X., & Pabian, Y. (2010). School engagement as a mediator of academic performance among urban youth: The role of career preparation, parental career support, and teacher support. *The Counseling Psychologist, 38,* 269–295. http://dx.doi.org/10.1177/0011000009349272

Pinderhughes, E. E., Dodge, K. A., Bates, J. E., Pettit, G. S., & Zelli, A. (2000). Discipline responses: Influences of parents' socioeconomic status, ethnicity, beliefs about parenting, stress, and cognitive-emotional processes. *Journal of Family Psychology, 14,* 380–400. http://dx.doi.org/10.1037/0893-3200.14.3.380

Simons-Morton, B., & Chen, R. (2009). Peer and parent influences on school engagement among early adolescents. *Youth & Society, 41,* 3–25. http://dx.doi.org/10.1177/0044118X09334861

Steinberg, L., Dornbusch, S., & Brown, B. (1991). Ethnic differences in adolescent achievement: An ecological perspective. *American Psychologist, 47,* 723–729.

Steinberg, L., Lamborn, S. D., Dornbusch, S. M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development, 63,* 1266–1281. http://dx.doi.org/10.2307/1131532

Steinberg, L., & Silk, J. S. (2002). Parenting adolescents. In M. H. Bornstein (Ed.), *Handbook on parenting* (Vol. 1, pp. 103–134). Mahwah, NJ: Erlbaum.

Taylor, R. D., & Lopez, E. I. (2005). Family management practice, school achievement, and problem behavior in African American adolescents: Mediating processes. *Journal of Applied Developmental Psychology, 26,* 39–49. http://dx.doi.org/10.1016/j.appdev.2004.10.003

Trusty, J. (1998). Family influences on educational expectations of late adolescents. *The Journal of Educational Research, 91,* 260–271. http://dx.doi.org/10.1080/00220679809597553

Wang, M.-T., & Eccles, J. S. (2012a). Adolescent behavioral, emotional, and cognitive engagement trajectories in school and their different relations to educational success. *Journal of Research on Adolescence, 22,* 31–39. http://dx.doi.org/10.1111/j.1532-7795.2011.00753.x

Wang, M.-T., & Eccles, J. S. (2012b). Social support matters: Longitudinal effects of social support on three dimensions of school engagement from middle to high school. *Child Development, 83,* 877–895. http://dx.doi.org/10.1111/j.1467-8624.2012.01745.x

Wang, M.-T., Willett, J. B., & Eccles, J. S. (2011). The assessment of school engagement: Examining dimensionality and measurement invariance by gender and race/ethnicity. *Journal of School Psychology, 49,* 465–480. http://dx.doi.org/10.1016/j.jsp.2011.04.001

Wong, M. M. (2008). Perceptions of parental involvement and autonomy support: Their relations with self-regulation, academic performance, substance use and resilience among adolescents. *North American Journal of Psychology, 10,* 497–518.

Received December 31, 2011
Revision received August 28, 2014
Accepted October 6, 2014 ■

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Check for updates

Article

Hammill Institute on Disabilities

Journal of Disability Policy Studies
2016, Vol. 27(1) 43–53
© Hammill Institute on Disabilities 2015
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/1044207315583901
jdps.sagepub.com
SAGE

A Conceptual Model for Parent Involvement in Secondary Special Education

Kara A. Hirano, MEd[1] and Dawn A. Rowe, PhD[1]

Abstract

Parent educational involvement has been demonstrated to be a predictor of in-school and post-school success for all students, including students with disabilities. However, traditional models of parent involvement tend to focus on academic-oriented indicators of success whereas transition models tend to focus on post-school outcomes with limited parent roles. The purpose of this article is to propose a model of parent involvement that addresses the limitations of current approaches by (a) integrating transition and traditional academic-focused models of parent involvement, (b) incorporating predictors of post-school success, and (c) accounting for the continued role parents play in the lives of their adult children.

Keywords

parent involvement, family involvement, transition planning, secondary education

In the reauthorization of No Child Left Behind (NCLB; 2001), parental involvement was defined as "the participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities." The term *parent* refers to

> a natural, adoptive, or foster parent of a child, a guardian, or an individual acting in the place of a natural or adoptive parent (including a grandparent, stepparent, or other relative) with whom the child lives, or an individual who is legally responsible for the child's welfare. (Individuals With Disability Education Act [IDEA], 2004, sec. 602).

From this point forward, the term *parent* will be used to represent the variety of family constellations that exist today.

NCLB emphasized promoting parent involvement and building parents' capacity to act as full partners in improving their child's education by requiring schools to (a) develop a written policy regarding involving parents and (b) provide parents with resources and training on topics such as academic content, achievement standards, monitoring progress, and collaboration. Despite increased focus on parent involvement over time, however, Section 1118—Parent Involvement—in NCLB has drawn criticism for not outlining clear procedures for measuring parent involvement, and failing to implement federal monitoring of school activities to meet parent involvement requirements (Epstein, 2005). Without guidance and oversight, schools are left to interpret the intent of the law resulting in multiple practices with inconsistent results (Epstein, 2005). Unfortunately, this means that many families are not connecting with schools. Teachers and administrators often report that one of their greatest challenges is getting the parents they are most trying to reach, involved. Most of these "hard to reach" parents are "those who are of color, poor, economically distressed, limited English speakers, and/or immigrants" (Mapp & Hong, 2010, p. 346). Mapp and Hong (2010) argue, however, that it is not the parents, who are hard to reach, but the schools and the programs, policies, and practices created by school personnel that are hard to reach.

Moreover, NCLB does not specifically address students with disabilities for whom parent involvement may be particularly important. One of the main components of IDEA (2004) is parent participation in decision making related to their child's education. IDEA reaffirms the importance of parent involvement in education by mandating procedures offering a continuum of activities aimed at facilitating parental involvement. Although parent participation is not mandated, schools are required to make efforts and encourage parents to become partners in decision making regarding their child's education including, but not limited to,

[1]University of Oregon, Eugene, USA

Corresponding Author:
Kara A. Hirano, Department of Special Education and Clinical Sciences, University of Oregon, 5208 Eugene, OR 97403-5208, USA.
Email: khirano1@uoregon.edu

consent to evaluation and determination of eligibility for services.

Despite positive associations between parent involvement and student outcomes and corresponding mandates that schools invite parents to be involved in decisions pertaining to their child's education, collaborative home–school relationships remains elusive, particularly for low-income and culturally diverse (CLD) families (Kalyanpur, Harry, & Skrtic, 2000). A number of barriers and contextual factors contribute to this lack of connection, and it is important to address these as "these barriers to family-school partnerships create inequities and contribute to differential post-school outcomes" (Trainor, Lindstrom, Simon-Burroughs, Martin, & McCray Sorrells, 2008, p. 60).

Models for Parent Involvement

In general, previous models for parent involvement in education view parents as having a role in promoting the achievement of their child through school-based and home-based activities (Epstein, 1987; Green, Walker, Hoover-Dempsey, & Sandler, 2007; Grolnick & Slowiaczek, 1994). Home-based activities are aimed at supporting achievement through homework and curriculum-related activities, and promoting overall cognitive development of their child. School-based activities are focused on participating in meetings and activities at school and facilitating connections with both school staff and other families. Existing models for parent involvement recognize the importance of the home–school connection and emphasize that communication between these two spheres of influence is critical.

Previous models for parent involvement make a unique contribution to the conceptualization of parent involvement in education. For example, Grolnick and Slowiaczek (1994) and Hoover-Dempsey and Sandler (1995) both highlight the importance of parents conveying their education-related values to their child. Grolnick and Slowiaczek (1994) focus more on the child's affective experience in which parents convey positive feelings toward the child by caring about school and relating their enjoyment of interacting with the child about school. Hoover-Dempsey and Sandler (1995) suggest that parents convey not only their value of education but also their goals, expectations, and aspirations for their child's future.

Parent Involvement in High Schools

Despite the benefits of parent involvement and the call to increase parental participation in education, parent involvement decreases as students transition from middle to high school (Eccles et al., 1993). Newman (2005) reported that parents of older students with disabilities were less involved at home and school than parents of younger aged peers. Several factors could be influencing this trend of decreasing parent involvement as students age, such as structural changes to the educational environment and shifts in parental and school personnel perceptions of the role of parents in a student's life during high school.

Middle and high schools are often large, complex systems with more teachers, which can make it difficult for parents to find ways to connect (Adams & Christenson, 2000). In addition, high school curricula are more complex, which makes it more challenging to support student learning (Hill & Chao, 2009). The systemic and curricular changes evident between elementary and middle/high schools also coincide with developmental changes as students enter adolescence. Developing autonomy and independence are two important developmental tasks during adolescence as conceived by Western culture (Arnett, 2013). At this time, students often begin distancing themselves from their parents, and parents often support their child's emerging autonomy and independence by distancing themselves from their teen's life, including school life (Hollifield, 1994). Parents seem to recognize that involvement practices appropriate when their child was in elementary and middle school are no longer developmentally appropriate, but are uncertain how exactly to continue to engage.

High school administrators and teachers are also sometimes unsure of how to effectively engage families in their child's education and sometimes avoid partnering with them (Greenfield, Epstein, Hutchins, & Thomas, 2012), reflecting the decrease in parent outreach activities in high schools (Adams & Christenson, 2000). With schools and parents unsure about their roles in the lives of high school students, a chasm between home and school can exist. However, it is important to address this gap as high school students continue to reaffirm the value of family in their lives, education, and plans for college and career (Greenfield et al., 2012), and research continues to underscore the importance of parental involvement for in-school and post-school success (Newman et al., 2005; Test et al., 2009).

The field of special education organized transition-related research into models to begin to assist schools in addressing the discrepancy in post-school outcomes between youth with disabilities and their peers without disabilities. Two examples are the *Taxonomy for Transition Programming* (Kohler, 1996) and *Guideposts for Success* (National Collaborative on Workforce and Disability [NCWD] for Youth, 2009). These models identify the importance of parent involvement in transition planning and the central role parents play in their children's school life. Activities in these models are focused on empowering parents to be active participants in transition planning by arming them with essential knowledge and skills. Training components include knowledge of transition, community resources and supports for the youth and family, and information on disability-related legislation. Kohler (1996)

stresses the importance of increasing parent knowledge of community resources as well as concepts and strategies that support student independence, such as self-determination.

A third model by Wandry and Pleet (2009) focuses specifically on parent involvement and the role parents can and should play during the transition years. Wandry and Pleet suggest that parents can assume five different roles during the transition years both in school and in adult service agencies: (a) collaborators in the Individualized Education Program (IEP) process, (b) instructors in their youth's emergent independence, (c) decision makers and evaluators; (d) peer mentors, and (e) systems change agents. This model differs from previous models by expanding the role of parents, recognizing them as instructors in their youth's emergent independence, and emphasizing the importance of home-based activities.

Although all the models provide a useful lens for conceptualizing parent involvement, several limitations of these models affect applicability to transition-age youth with disabilities and their families. First, general education models (Epstein, 1987; Green et al., 2007; Grolnick & Slowiaczek, 1994; Hoover-Dempsey et al., 2005) focus mainly on linking parent engagement with student academic success whereas the transition frameworks (i.e., Kohler, 1996; NCWD Youth, 2009) focus primarily on parental roles in transition planning in school. In reality, the role of parents is multidimensional and often focused on both in-school and post-school success.

Although models describe some knowledge parents need to participate in transition planning (e.g., IEP process, community resources), parents could benefit from additional resources (e.g., supports, programs, experiences, services correlated with improved post-school outcomes for youth with disabilities). For example, Test et al. (2009) identified in-school predictors of post-school outcomes for students with disabilities in education, employment, and independent living (e.g., work study, community experiences, self-determination). Integrating this information into a parent involvement model is an important next step not only in improving the home–school partnership, but also in improving post-school outcomes for youth with disabilities. Although parents may not dictate curriculum and services, if they are aware of evidence-based programs that increase the likelihood of positive outcomes, they will be more fully informed advocates and partners in transition planning.

Finally, although mentioned in Wandry and Pleet (2009), the importance of the roles parents continue to play after their students leave high school is not accounted for in a meaningful way in most models. Many parents of students with disabilities maintain active roles in the lives of their student after high school. Although these roles may look somewhat different than roles held during high school, parents often continue to act as decision makers, collaborators, instructors, and advocates for their child (Bianco, Garrison-Wade, Tobin, & Lehmann, 2009; Timmons, Whitney-Thomas, McIntyre, Butterworth, & Allen, 2004). Parents are often critical in assisting and guiding their young adults in receiving supports and services necessary to achieve desired post-school goals. Therefore, in looking ahead to promoting positive post-school outcomes for youth with disabilities, it is imperative that there are support networks, including parents, in place that can continue to assist students in developing the skills, knowledge, and resources necessary to achieve their goals.

Given the weight of the role parents play in the lives of their children and the complex nature of schools and transition planning, it is important to have a model for parent involvement that defines how parents can be involved, what skills and knowledge parents need to effectively support their students, and what strategies high schools can use to increase parent involvement for youth with disabilities. Not only is it mandated by IDEA (2004) to provide supports to parents, but research continues to demonstrate that parent involvement increases the likelihood of positive post-school outcomes (Test et al., 2009). If one goal of education is to prepare students to meet post-school goals, schools must recognize that parents continue to play a role in the lives of their child long after they leave high school and should prepare parents for their changing roles as students exit high school and enter adult service systems (Bianco et al., 2009). This requires recognizing that for many youth with disabilities, post-school success is affected by students' individual characteristics and the knowledge, skills, expectations, and resources of their family (e.g., Lindstrom, Hirano, McCarthy, & Alverson, 2014).

Expanding Definitions and Dimensions of Parent Involvement in Secondary Transition

Based on existing models of parent involvement (Hoover-Dempsey & Sandler, 1997; Wandry & Pleet, 2009), parent reports of transition experiences (Bianco et al., 2009; Timmons et al., 2004), and research related to predictors of post-school success for students with disabilities (Rowe et al., 2014; Test et al., 2009), a conceptual model for parent involvement in secondary special education and transition is suggested. Addressing limitations of current approaches, the model (a) integrates transition and traditional academic-focused models of parent involvement, (b) incorporates predictors of post-school success, and (c) accounts for the continued role parents play in the lives of their adult children. Figure 1 presents an overview of the model.

School Values and Beliefs

Mapp and Kuttner (2014) outline research-based organizational conditions essential for parent engagement initiatives to be implemented and sustained. Based on the work of

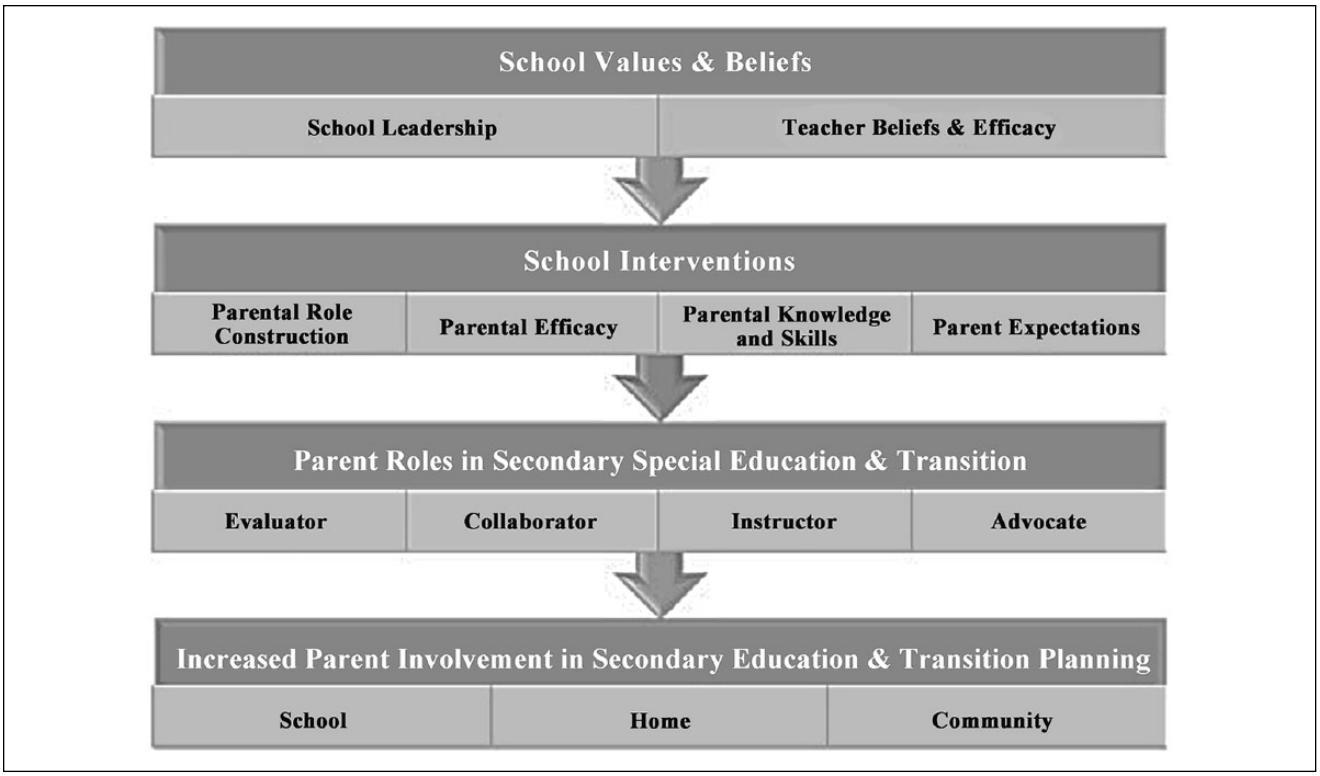


Figure 1. Theoretical model for parent involvement in secondary special education.

Weiss, Lopez, and Rosenberg (2011), these conditions include initiatives that are systemic, integrated, and sustained with diverse funding streams and school leadership. Initiatives should be a critical element of school and district improvement plans with the capacity-building efforts integrated into school structures and processes. These include not only training and professional development but also recruitment and mechanisms for assessment and evaluation. Finally, district leadership must view parent engagement as systemic and be able to coordinate parent engagement strategies as part of the overall plan for school improvement. Additional research also focuses on the importance of school-level leadership and teacher beliefs and efficacy on parent involvement (Dauber & Epstein, 1993; Lloyd-Smith & Baron, 2010).

School leadership. School leaders often set the school climate and have the power to encourage or discourage school practices, including parent involvement (Lloyd-Smith & Baron, 2010). The foundation for parent involvement in the proposed model relies on school leaders who (a) know and understand the importance of parent involvement in promoting students' in-school and post-school success, (b) value parents as partners in education, (c) believe that parents want the best for their students and manifest their support in various ways, (d) effectively communicate values to school staff and support ongoing professional development and support for parent involvement, and (e) initiate and/or actively support parent involvement programs (Campbell-Whatley & Lyons, 2013).

Teacher beliefs and efficacy. In addition to school leaders, it is also important to have teachers who support parent involvement. There is consistent evidence in general education that teacher attitudes and invitations they extend to parents to be involved in their child's education are important influences on parents' decisions to become involved (Dauber & Epstein, 1993). Simon (2004) found parents who perceived more outreach from their child's high school (e.g., school contacts about their child's academic program, contacts with information about how to help children with homework or specific skill development) were more involved. This increased involvement included more parent–child discussions about post-school goals, school activities, and homework completion, and greater levels of attendance at school activities.

Given the potential impact of invitations for parent involvement, it is important that teachers make it an integrated part of their teaching practice. Integrating parent involvement into practice requires belief that it is important (Pajares, 1992). School staff who do not support parent involvement (e.g., believe that it is too much trouble) have been found to actively discourage parent involvement (Dauber & Epstein, 1993). In addition, teachers who held

low assessments of their ability to affect changes in levels of parent involvement were less likely to believe that forming partnerships was important for promoting parent involvement than teachers with a more positive perspective on parents (Landmark, Roberts, & Zhang, 2013).

School Interventions

A school culture that values parent involvement provides the foundation for parent involvement programs and initiatives (Mapp & Kuttner, 2014). Traditional forms of involvement include volunteering at the school, attending parent–teacher conferences, open houses, and school activities, as well as participation in the schools' Parent Teacher Association, and supporting homework completion (Greenwood & Hickman, 1991). However, most of these activities along with school structures and norms are most responsive to "middle-class, U.S. born, able-bodied, standard English-speaking parents" (Goodwin & King, 2002, p. 5). In an effort to provide culturally responsive involvement opportunities, several strategies have been offered, such as schools (a) creating and clearly communicating their commitment to culturally responsive parent involvement, (b) obtaining parental perspectives through surveys or interviews, (c) providing flexible meeting and activity times so that more parents can attend, (d) offering seminars and parent–teacher team building activities, (e) assigning a parent liaison, (f) creating a cultural resource binder, and (g) providing a family space or room within the school (Goodwin & King, 2002).

In addition to the aforementioned activities, some parents, such as parents of youth with disabilities, play distinct roles in their children's education that may require extra training and support. For example, Hoover-Dempsey and Sandler (1997) proposed a model of parent involvement that identified factors thought to affect parents' decisions to become involved in their child's education (i.e., parental role construction, parental skills and knowledge, and parental efficacy). Not present in the Hoover-Dempsey model but included in this model are parent expectations, which have been demonstrated to influence parent involvement behaviors (e.g., Doren, Gau, & Lindstrom, 2012). This conceptual model proposes that school interventions should be aimed at increasing these three constructs in the five roles that parents play in secondary school and transition planning, as well as in assisting parents in forming high and reasonable expectations for their youth.

Parental role construction. Parental role construction is simply parents' beliefs about what they should do as parents in relation to their child's education. Based on role theory (Biddle, 1986), Hoover-Dempsey et al. (2005) defined it as "parents' beliefs about what they are supposed to do in relation to their child's education and the patterns of behavior that follow those beliefs" (Hoover-Dempsey et al., 2005, p. 107). Parents' beliefs about their role in their child's education are influenced by culture (Chrispeels & Rivero, 2001) and socioeconomic status (Lareau, 2003) and can lead to different types and levels of parent involvement. For example, several studies have identified Latino immigrant families as holding the belief that teaching academic skills is the role of the school; therefore, they often take a more passive role in school- and home-based involvement (e.g., Chrispeels & Rivero, 2001). These findings have also been replicated with low-income families (Lareau, 2003). Role construction is also shaped by parent beliefs about child development and effective parenting practices (Hoover-Dempsey et al., 2005). Although there is currently no research that assesses the impact of parental role construction on parental involvement in secondary school and transition planning, research supports the importance of role construction in shaping parent involvement practices for parents of elementary (Sheldon, 2002) and secondary students (Deslandes & Bertrand, 2005).

Knowledge, skills, and parental efficacy. Hoover-Dempsey and Sandler (1995) suggest that the particular skills and knowledge parents possess will influence their forms of involvement. For example, if parents feel knowledgeable about writing but less confident in their math abilities, they are more likely to help their student with writing tasks. Extended to transition activities, if parents feel more confident in their ability to create resumes or look for jobs than connecting with resources in the community, they are more likely to help their child find a job rather than pursue community support services. However, possessing knowledge and skills to support a child in academics or transition does not guarantee that the parent will indeed become involved. Parents must also have a sense of efficacy for helping their child succeed.

Grounded in social cognitive theory (Bandura, 1997), self-efficacy is a construct that refers to one's belief that their efforts will positively affect outcomes (Bandura, 1997). It is important to note that self-efficacy is distinct from skills and knowledge as it refers to the "beliefs about what one can do with the sub-skills one possesses" (Bandura, 1986b, p. 368). In regard to parent involvement in secondary school and transition planning, parental efficacy refers to parents' beliefs that their efforts will positively affect their child's in-school and post-school outcomes. Previous research has demonstrated that parental efficacy is linked to parent involvement. Hoover-Dempsey, Bassler, and Brissie (1992) found that parents with higher parental efficacy were more likely to be involved than parents with a weaker sense of self-efficacy.

Parent expectations. For students in general, parent expectations have been linked to academic achievement (Chen & Gregory, 2010), school engagement (Simons-Morton & Chen, 2009), and college attendance (Crosnoe, Mistry,

& Elder, 2002). Parent expectations have also proven to be significant for students with disabilities. Recent studies have found that parents of youth with disabilities who held high expectations of their children tended to have better post-school outcomes in employment and post-secondary education (e.g., Doren et al., 2012).

Although there are not currently any research-based practices for raising parent expectations, several studies indicate that parent expectations are dynamic and influenced by the parents' perception of how their child is doing in school (Goldenberg, Gallimore, Reese, & Garnier, 2001) and teacher expectations (Lareau, 2003), suggesting schools could potentially affect parent expectations. Parent expectations are also influenced by knowledge of available services. Francis, Gross, Turnbull, and Parent-Johnson (2013) found that parent training on competitive employment options for people with disabilities through the Family Empowerment Awareness Training (FEAT) increased parent expectations for competitive employment. A follow-up survey found that parents reported accessing competitive employment resources following the trainings with nearly one fifth reporting competitive employment outcomes for their son or daughter (Francis, Gross, Turnbull, & Turnbull, 2014).

Expanded Parent Involvement Roles in Secondary Education and Transition

Hoover-Dempsey and Sandler (1997) suggest that the beliefs underlying parental role construction are based on experience with their own parent's school involvement, observation of their friend's involvement in child's schooling, and expectations for involvement held by groups to which parents belong, including schools. Parents of youth with disabilities may not have family or peer groups to observe and model or who share similar experiences (e.g., attending transition planning meetings). The school, however, can develop parent involvement roles and expectations and communicate these to parents. For parents of secondary students with disabilities, these roles extend beyond attending meetings and helping with homework. These roles include decision maker and evaluator, collaborator, instructor, coach, and advocate (described below). Schools should provide parents with knowledge and skills to enable them to effectively fulfill these roles and develop their efficacy for supporting their child.

Parent training has been effective at increasing parent knowledge, skills, and efficacy. For example, Chrispeels and Rivero (2001) reported that parents' role construction evolved as they gained new information through attending six 90-min training sessions focused on how to interact with teachers and support their child's academic success at home. Results indicated increases in parent-initiated communication, more positive and supportive interactions with their child at home, and more engagement in teaching activities at home. Parents also demonstrated an increase in advocacy at school, as they pressed to see their child's records and understand more about the child's progress. These behavioral changes reflect a shift in role construction as parents learned the importance of an active role in education.

Although each model previously reviewed discussed the importance of parent involvement in education, models addressed parental roles and forms of involvement in slightly different ways. To adequately address parent involvement in secondary education and transition planning, it is necessary to consolidate roles from the literature and expand traditional definitions of parent involvement to reflect roles parents assume during school-age years and the future. Expanding these roles will also provide a new lens through which teachers can view parents. Geenan, Powers, and Lopez-Vasquez (2001) found that professionals reported relatively low involvement for CLD parents in both home-based and school-based transition planning. CLD parents also reported low levels of school-based involvement but indicated relatively high levels of transition planning activities at home. Oftentimes, parents who do not participate in traditional school-based activities are thought to be uninvolved, which contributes to the assumption that the families who are often "of color, poor, economically distressed, limited English speakers, and/or immigrants" (Mapp & Hong, 2010, p. 346) are uncaring and "hard-to-reach" (Mapp & Hong, 2010). Expanding the role of parents and forms of involvement may also help educators to become aware of and appreciate many of the invisible strategies CLD families use to support their children's education (e.g., Delgado-Gaitan, 1994).

Parents as decision makers and collaborators. IDEA mandates parents of students with disabilities are part of the IEP team and considered partners in educational decision making. Having adequate information about their child's course of study and activities while in high school can affect the ability to be fully informed decision makers and advocates. For parents to be partners in decision making, they must be aware of options and potential consequences of decisions. The impact of educational decisions on a youth with a disability significantly affects future options and post-school outcomes. For example, Blackorby, Hancock, and Siegel (1993) found that students with disabilities who participated in general education academic courses were more likely to be engaged in post-school education, employment, and independent living, findings that have been replicated across other studies (e.g., Daviso, Denney, Baer, & Flexer, 2011). Obtaining a high school diploma also influences post-secondary enrollment (Harvey, 2002).

Inclusion in general education and diploma status are not the only relevant school-based decisions that affect student outcomes. Parents need to be knowledgeable

about nonacademic courses (e.g., Career Technical Education), work experiences, and availability of structured school-to-work and transition programs (i.e., predictors post-school success; Rowe et al., 2014; Test et al., 2009). It is important for parents to understand all educational options available for their child and be informed of the impact that their child's educational path and experiences may have on options and outcomes in the future. It is only with this crucial information that parents can make informed decisions on how to best support and advocate for their child.

Studies of parents of young adults with disabilities during and after the transition from high school to adult service delivery systems reveal that the role of parents is complex and multifaceted. Timmons et al. (2004) described parents as "linchpins" who acted not only as parents and providers, but also as service coordinators, case managers, and advocates. Bianco et al. (2009) found that for parents of young adults with disabilities, establishing collaborative partnerships with adult service agencies and direct service providers was critical in filling service gaps to ensure that the young adult's needs were met. As with schools, informed decision making can be elusive in the adult service system if parents and youth are unaware of their options. Although the school is not responsible for assisting parents in navigating the adult service system after their child leaves high school, providing information about and connection to pertinent community resources to pursue should they need support could help pave the way for a smoother transition.

Without understanding the different factors that influence post-school outcomes and awareness of availability of programs and resources in school, parents can hardly be called partners in educational decision making. Making decisions or supporting those made by schools without having adequate knowledge inhibits parents' ability to make informed decisions.

Parents as instructors. Lightfoot (1978) states that in parent–school partnerships, "there must be a profound recognition that parents are their child's first teacher and that education, deeply rooted in the values, traditions, and norms of family culture," begins before formal schooling (p. 42). In fact, parents continue to act as instructors through the transmission of socio-cultural values, a form of involvement often overlooked by traditional models of parent involvement (Geenan et al., 2001). Although this role of instructor may change as children age, parents continue to influence their child's growth and development. By recognizing this important and ongoing role of parents as instructors, teachers can collaborate with parents to integrate teaching moments into the daily lives of families to support students in their in-school and post-school goals in academics, daily living skills, and social skills.

Academics. Families can manifest their support for education in the home and at school in multiple ways, including assisting with homework. Despite benefits of parental involvement with homework, parents report that helping with homework can put tension on the parent–child relationship (Baumgartner, Bryan, Donahue, & Nelson, 1993). Providing parents information (e.g., appropriate monitoring for their child's needs and phrases for providing feedback) can increase parents' effectiveness and influence student motivation for completing homework.

Adapting work from Hoover-Dempsey et al. (2001), Walker, Hoover-Dempsey, Whetsel, and Green (2004) described two categories of activities in which schools can invite parent involvement. The first category is focused on activities most families can enact that contribute to student motivation and performance, for example, making sure that parents understand homework policies and expectations through accessible written materials, and assisting parents in establishing physical and psychological structures to support homework completion. Suggestions may be general (e.g., convey value and expectations of homework completion) to specific (e.g., "if the child is easily distracted, make sure the phone, music, and TV are turned off") depending on the child's developmental needs. Last, schools can encourage all parents to monitor homework and support parents in providing specific positive feedback on homework performance.

Self-determination. Several studies highlight the importance of parents and relationships in self-determination. For example, Lindstrom, Doren, Metheny, Johnson, and Zane (2007) found that students with highly involved families who acted as advocates and provided opportunities for exploration, decision making, and self-determination skill development had better post-school independent living and employment outcomes. Some parents report that passing off more responsibility to their child, nurturing self-determination, and self-advocacy happened later, after high school (Bianco et al., 2009), indicating that this is an evolving process. There are many opportunities for parents to support their child in developing self-determination skills in high school and beyond, including advocating for services on their own or providing feedback to personal care providers.

Several strategies for involving parents in supporting student self-determination can be adapted from strategies for practitioners outlined by Rowe et al. (2014). Teachers can work with parents first to establish the importance of students developing self-determination skills, making the direct connection to how these skills will support the student in achieving their post-school goals. Then, schools can employ parents to assist in developing these skills at home through a range of options requiring little time to more intensive efforts. For example, "expect and support students

to make many routine choices for themselves throughout the course of a school day" (p. 9). Teachers can help parents examine routines at home and identify opportunities to provide choice (e.g., the order in which to complete chores, selecting dinners for the week, etc.).

Daily living. Daily living skills are activities one is expected to do throughout the course of the day across settings like home, school, work, and community. These include activities such as those involving how to maintain a home, personal hygiene routine, and navigating the community. The extent to which a student with a disability is able to manage daily living activities may affect post-school options. In fact, those students who had high self-care skills were more likely to be engaged in post-school education, employment, and independent living (e.g., Blackorby et al., 1993). Rowe et al. (2014) identified ways schools can support the development of daily living skills including providing instruction based on assessment. These same strategies can be used to support the development of the skills at home. Parents may be open to ideas or suggestions for assisting their child in developing critical life skills (e.g., grocery shopping, household chores such as laundry, cleaning, or cooking).

Social skills. Caldarella and Merrell (1997) outlined five dimensions of social skills, a predictor of post-school success (Test et al., 2009), which included peer relation skills, self-management skills, academic skills, compliance skills, and self-management skills. Students with high social skills on exit from high school were more likely to be engaged in post-school employment (Benz, Yovanoff, & Doren, 1997) or post-secondary education, and to have an improved quality of life as measured by independent living status (Roessler, Brolin, & Johnson, 1990).

In addition to teachers, parents are also important models of social skills (Johns, Crowley, & Guetzloe, 2005). Utilizing families as instructors to assist students in developing skills in these other areas is also important because families have unique opportunities to provide instruction and skill development that are unlike those at school. Rowe et al. (2014) suggested schools provide parents "information and training in supporting age-appropriate social skill development, taking into consideration the family's cultural standards" (p. 10). Teachers can also assist parents in using routine activities at home as teachable moments (e.g., providing support to students to use problem-solving skills when difficult social situations arise).

Advocates. The roles of parents of youth with disabilities as system change agents and advocates are not new. Historically, special education law includes efforts of both parents and advocacy groups in American courtrooms and legislatures working to ensure equal educational opportunities for students (Yell, Rogers, & Rogers, 1998). However, it is clear that not all parents are able to fulfill these roles in relation to secondary school and transition planning. Multiple barriers exist to parent involvement, including lack of pertinent information (Landmark, Zhang, & Montoya, 2007) and negative professional perceptions both of CLD parents (Geenan, Powers, Lopez-Vasquez, & Bersani, 2003) and parents who advocate for their children as being perceived as difficult (Kim & Morningstar, 2005).

Despite these barriers, advocacy skills are critical for parents while students are in school and remain important once students leave the school system. When Timmons et al. (2004) asked parents to identify the most helpful and effective strategies they utilized in managing adult systems, parents noted advocacy skills as being important in overcoming barriers and accessing services for their child. Bianco et al. (2009) found similar sentiments with parents of young adults with disabilities who reported that establishing collaborative partnerships with adult service agencies and direct service providers was critical in filling service gaps to ensure the young adult's needs were met. Parents also noted the usefulness of connecting with other parents of children with disabilities and sharing experiences, advice, and support (Timmons et al., 2004). These informal networks of support were noted as relieving some pressures associated with ongoing self-advocacy.

Research has demonstrated the benefits to students when parents are involved in their education. Knowing the importance of advocacy in fulfilling this role both while the students are in high school and once they leave, schools have a responsibility to provide parents opportunities for knowledge and skill development. There is a range of ways schools can connect families with each other and provide parents support in developing these skills. These can include informal events and more structured peer mentoring, such as a monthly parent–teacher led support group, a reading club to explore relevant topics in special education and transition, parent nights, and parent matching (Ripley, 2009). Although not all parents may want to act as peer mentors for other families, parents have noted the need for support from peer mentors and models for assistance navigating their roles (Bianco et al., 2009).

Implications for Research

This article presents a conceptual model for parent involvement in secondary school and transition planning. Building on existing models of parent involvement, this model expands the role of parents and includes a focus not only on the roles they play in high school but also on the continued role they often play once their child leaves high school. Several areas for future research emerge from this. Acknowledging the expanded roles parents play beyond attending IEP meetings, school activities, and assisting with homework is an important first step in being able to

collaborate with parents to more effectively support students in achieving successful post-school outcomes. However, research is needed to support which types of parent involvement are most effective for promoting in-school and post-school outcomes. This will require examination of which involvement activities work best for particular groups of students and their parents.

In addition to research exploring which kinds of parent involvement are most effective, research is also needed to understand how to best engage parents in these roles. For example, though there are a few intervention studies designed to increase parent knowledge of the transition planning process (Boone, 1992; Rowe & Test, 2010), there is limited research on strategies to increase parent involvement, role construction, or parent self-efficacy in transition planning. Last, it is clear that parents continue to play a critical role in the lives of their children after they leave high school. Exploring ways schools, communities, and agencies can support parents in preparing for the role change while their children are still in high school may also support youth in achieving and maintaining improved post-school outcomes.

Implications for Practice

This article focused on the importance of parent involvement in secondary education and transition planning and offers several implications for practice. First, it is critical for school leadership to set the school climate in regard to parental involvement through values, attitudes, and action. While being cognizant of the challenges that accompany parent involvement, having leadership that understands the importance of parent involvement not only in students' in-school success but also post-school success is crucial. These values can influence school policy around increasing parent involvement. School leadership can spearhead programs or support teacher initiatives to promote involvement. Ultimately, it is important that they create a school culture that values parents and also allocates resources to put values into action. It is also important for teachers to have opportunities for professional development regarding providing ongoing systems of support for engaging parents. The role of teachers in engaging parents cannot be underestimated: Parents respond with involvement to teachers who invite them to be involved.

It is also important for practitioners to engage parents and families in roles beyond supporting homework and attending meetings. Parents enact many roles in the lives of their child and partnering with them in these roles is one way to increase parent involvement and a way to support students with disabilities in achieving their in-school and post-school goals. It is the responsibility of schools to provide services, support, and training so that parents can effectively fulfill the roles of evaluators, collaborators, instructors, and advocates. The model for parent involvement in secondary education and transition planning is grounded in the belief that for any parent involvement efforts to work, educators must recognize the value of parent involvement and actively work to incorporate parent contributions into education and transition planning. This requires a fundamental shift in the field where the field acknowledges the interdependent nature of student lives and recognizes family involvement as an integral part of transition planning.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

Adams, K. S., & Christenson, S. L. (2000). Trust and the family–school relationship: An examination of parent–teacher differences in elementary and secondary grades. *Journal of School Psychology*, *38*, 447–497.

Arnett, J. J. (2013). *Adolescence and emerging adulthood: A cultural approach* (5th ed.). Boston, MA: Pearson.

Bandura, A. (1986b). The explanatory and predictive scope of self-efficacy theory. *Journal of Social and Clinical Psychology*, *4*, 359–373.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.

Baumgartner, D., Bryan, T., Donahue, M., & Nelson, C. (1993). Thanks for asking: Parent comments about homework, tests, and grades. *Exceptionality*, *4*, 153–176.

Benz, M. R., Yovanoff, P., & Doren, B. (1997). School-to-work components that predict postschool success for students with and without disabilities. *Exceptional Children*, *63*, 151–165.

Bianco, M., Garrison-Wade, D. F., Tobin, R., & Lehmann, J. P. (2009). Parents' perceptions of postschool years for young adults with developmental disabilities. *Intellectual and Developmental Disabilities*, *47*, 186–196. doi:10.1352/1934-9556-47.3.186

Biddle, B. J. (1986). Recent developments in role theory. *Annual Review of Sociology*, *12*, 67–92.

Blackorby, J., Hancock, G. R., & Siegel, S. (1993). *Human capital and structural explanations of post-school success for youth with disabilities: A latent variable exploration of the National Longitudinal Transition Study*. Menlo Park, CA: SRI International.

Boone, R. S. (1992). Involving culturally diverse parents in transition planning. *Career Development and Transition for Exceptional Individuals*, *15*, 205–221.

Caldarella, P., & Merrell, K. W. (1997). Common dimensions of social skills in children and adolescents: A taxonomy of positive behaviors. *School Psychology Review*, *26*, 264–278.

Campbell-Whatley, G. D., & Lyons, J. E. (2013). *Leadership practices for special and general educators*. Boston, MA: Pearson.

Chen, W. B., & Gregory, A. (2010). Parental involvement as a protective factor during the transition to high school. *Journal of Educational Research*, *103*, 53–62.

Chrispeels, J. H., & Rivero, E. (2001). Engaging Latino families for student success: How parent education can reshape parents' sense of place in the education of their children. *Peabody Journal of Education*, *76*, 119–169.

Crosnoe, R., Mistry, R. S., & Elder, G. H. (2002). Economic disadvantage, family dynamics, and adolescent enrollment in higher education. *Journal of Marriage and Family*, *64*, 690–702.

Dauber, S. L., & Epstein, J. L. (1993). Parents' attitudes and practices of involvement in inner-city elementary and middle schools. In N. F. Chavkin (Ed.), *Families and schools in a pluralistic society* (pp. 53–71). Albany: State University of New York Press.

Daviso, A., Denney, S., Baer, R., & Flexer, R. (2011). Postschool goals and transition services for students with learning disabilities. *American Secondary Education*, *39*(2), 77–93.

Delgado-Gaitan, C. (1994). Consejos: The power of cultural narratives. *Anthropology & Education Quarterly*, *25*, 298–316.

Deslandes, R., & Bertrand, R. (2005). Motivation of parent involvement in secondary-level schooling. *Journal of Educational Research*, *98*, 164–175.

Doren, B., Gau, J. M., & Lindstrom, L. E. (2012). The relationship between parent expectations and postschool outcomes of adolescents with disabilities. *Exceptional Children*, *79*, 7–23.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist*, *48*, 90–101.

Epstein, J. L. (1987). Toward a theory of family-school connections: Teacher practices and parent involvement. In K. Hurrelmann, F. Kaufmann, & F. Losel (Eds.), *Social intervention: Potential and constraints* (pp. 121–136). New York, NY: De Gruyter.

Epstein, J. L. (2005). Attainable goals? The spirit and letter of the No Child Left Behind Act on parental involvement. *Sociology of Education*, *78*, 179–182.

Francis, G. L., Gross, J. M. S., Turnbull, A. P., & Turnbull, H. R. (2014). An exploratory investigation into family perspectives after the family employment awareness training. *Career Development and Transition for Exceptional Individuals*. Advance online publication. doi:10.1177/2165143414528241

Francis, G. L., Gross, J. M. S., Turnbull, H. R., & Parent-Johnson, W. (2013). Evaluating the effectiveness of the Family Employment Awareness Training in Kansas: A pilot study. *Research and Practice for Persons with Severe Disabilities*, *38*, 1–14.

Geenan, S., Powers, L. E., & Lopez-Vasquez, A. (2001). Multicultural aspects of parent involvement in transition planning. *Exceptional Children*, *67*, 265–282.

Geenan, S., Powers, L. E., Lopez-Vasquez, A., & Bersani, H. (2003). Understanding and promoting the transition of minority adolescents. *Career Development and Transition for Exceptional Individuals*, *26*, 27–46.

Goldenberg, C., Gallimore, R., Reese, L., & Garnier, H. (2001). Cause or effect? A longitudinal study of immigrant Latino parents' aspirations and expectations, and their children's school performance. *American Educational Research Journal*, *38*, 547–582.

Goodwin, A. L., & King, S. H. (2002). *Culturally responsive parental involvement: Concrete understandings and basic strategies*. Washington, DC: AACTE.

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler, H. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parent involvement. *Journal of Educational Psychology*, *99*, 532–544.

Greenfield, M. D., Epstein, J. L., Hutchins, D. J., & Thomas, B. G. (2012). *Sampler: Improve family and community involvement in high schools*. National Network of Partnership Schools at Johns Hopkins University. Retrieved from http://www.csos.jhu.edu/p2000/PPP/Samplers/2012-High-School-Sampler.pdf

Greenwood, G. E., & Hickman, C. W. (1991). Research and practice in parent involvement: Implication for teacher education. *The Elementary School Journal*, *91*, 279–288.

Grolnick, W. S., & Slowiaczek, M. L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development*, *65*, 237–252.

Harvey, M. W. (2002). Comparison and postsecondary transitional outcomes between students with and without disabilities by secondary vocational education participation: Findings from the National Education Longitudinal Study. *Career Development and Transition for Exceptional Individuals*, *25*, 99–122.

Hill, N. E., & Chao, R. K. (2009). *Families, schools, and the adolescent: Connecting research, policy, and practice*. New York, NY: Teachers College Press.

Hollifield, J. H. (1994). *High schools gear up to create effective school and family partnerships*. Baltimore, MD: Center on Families, Communities, Schools and Children's Learning, Johns Hopkins University.

Hoover-Dempsey, K.V., Bassler, O. C., & Brissie, J. S. (1992). Explorations in parent-school relations. *The Journal of Educational Research*, *85*, 287–294.

Hoover-Dempsey, K. V., Battiato, A. C., Walker, J. M. T., Reed, R. P., DeJong, J. M., & Jones, K. P. (2001). Parent involvement in homework. *Educational Psychologist*, *36*, 195–210.

Hoover-Dempsey, K. V., & Sandler, H. M. (1995). Parental involvement in children's education: Why does it make a difference? *Teachers College Record*, *97*, 310–331.

Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education? *Review of Educational Research*, *67*, 3–42. doi:10.2307/1170618

Hoover-Dempsey, K. V., Walker, J. M. T., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, S., & Closson, K. E. (2005). Why do parents become involved? Research findings and implications. *Elementary School Journal*, *106*, 105–130. doi:10.1086/499194

Individuals With Disabilities Education Improvement Act of 2004, P. L. 108-446, 20 U.S.C. § 1400 *et seq*.

Johns, B. H., Crowley, E. P., & Guetzloe, E. (2005). The central role of teaching social skills. *Focus on Exceptional Children*, *37*(8), 1–8.

Kalyanpur, M., Harry, B., & Skrtic, T. (2000). Equity and advocacy expectations of cultural diverse families' participation in special education. *International Journal of Disability, Development and Education*, *47*, 119–136.

Kim, K., & Morningstar, M. (2005). Transition planning involving culturally and linguistically diverse families. *Career Development and Transition for Exceptional Individuals*, *28*, 92–103.

Kohler, P. (1996). *Taxonomy for transition programming: Linking research and practice*. Champaign: Transition Research Institute, University of Illinois at Urbana-Champaign.

Landmark, L. J., Roberts, E. L., & Zhang, D. (2013). Educators' beliefs, and practices about parent involvement in transition planning. *Career Development and Transition for Exceptional Individuals*, *36*, 114–123.

Landmark, L. J., Zhang, D., & Montoya, L. (2007). Culturally diverse parents' experiences in their children's transition: Knowledge and involvement. *Career Development and Transition for Exceptional Individuals*, *30*, 68–79.

Lareau, A. (2003). *Unequal childhoods: Class, race, and family life*. Berkeley: University of California Press.

Lightfoot, S. L. (1978). *Worlds apart: Relationships between families and schools*. New York, NY: Basic Books.

Lindstrom, L., Doren, B., Metheny, J., Johnson, P., & Zane, C. (2007). Transition to employment: Role of the family in career development. *Exceptional Children*, *73*, 348–366.

Lindstrom, L., Hirano, K. A., McCarthy, C., & Alverson, C. Y. (2014). "Just having a job": Career advancement for low-wage workers with intellectual and developmental disabilities. *Career Development and Transition for Exceptional Individuals*, *37*(1), 40–49.

Lloyd-Smith, L., & Baron, M. (2010). Beyond conferences: Attitudes of high school administrators toward parental involvement in one small Midwestern state. *The School Community Journal*, *20*(2), 23–44.

Mapp, K., & Hong, S. (2010). Debunking the myth of the hard-to-reach parent. In S. L. Christensen & A. L. Reschly (Eds.), *Handbook of school-family partnerships* (pp. 345–361). New York, NY: Routledge.

Mapp, K. L., & Kuttner, P. J. (2014). *Partners in education: A dual capacity building framework for school-family partnerships*. Austin, TX: Southwest Educational Development Lab.

National Collaborative on Workforce and Disability for Youth. (2009). *Guideposts for success* (2nd ed.). Washington, DC: Institute for Educational Leadership. Retrieved from http://www.ncwd-youth.info/sites/default/files/page/2009/02/guideposts_0.pdf

Newman, L. (2005). *Family involvement in the educational development of youth with disabilities: A special topic report of findings from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International. Retrieved from http://www.nlts2.org/reports/2005_03/nlts2_report_2005_03_complete.pdf

No Child Left Behind Act of 2001, P. L. 107-110, 20 U.S.C. § 6301 *et seq*.

Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research*, *62*, 307–332.

Ripley, S. (2009). Parents as systems change agents. In D. L. Wandry & A. M. Pleet (Eds.), *Engaging and empowering families in secondary transition: A practitioner's guide* (pp. 101–117). Arlington, VA: Council for Exceptional Children.

Roessler, R. T., Brolin, D. E., & Johnson, J. M. (1990). Factors affecting employment success and quality of life: A one-year follow-up of students in special education. *Career Development and Transition for Exceptional Individuals*, *13*, 95–107.

Rowe, D. A., Alverson, C. Y., Unruh, D. K., Flowler, C. H., Kellems, R., & Test, D. W. (2014). A Delphi study to operationalize evidence-based predictors in secondary transition. *Career Development and Transition for Exceptional Individuals*. Advance online publication. doi:10.1177/2165143414526429

Rowe, D. A., & Test, D. W. (2010). The effects of computer-based instruction on the transition planning process knowledge of parents of students with disabilities. *Research and Practice for Persons with Severe Disabilities*, *35*, 102–115.

Sheldon, S. (2002). Parents' social networks and beliefs as predictors of parent involvement. *Elementary School Journal*, *102*, 301–316.

Simon, B. S. (2004). High school outreach and family involvement. *Social Psychology of Education*, *7*, 185–209.

Simons-Morton, B., & Chen, R. (2009). Peer and parent influences on school engagement among early adolescents. *Youth & Society*, *41*, 3–25.

Test, D. W., Mazzotti, V., Mustian, A., Fowler, C., Kortering, L., & Kohler, P. (2009). Evidence-based secondary transition predictors for improving postschool outcomes for students with disabilities. *Career Development and Transition for Exceptional Individuals*, *32*, 160–181.

Timmons, J. C., Whitney-Thomas, J., McIntyre, J. P., Butterworth, J., & Allen, D. (2004). Managing service delivery systems and the role of parents during their children's transitions. *Journal of Rehabilitation*, *20*(2), 19–26.

Trainor, A. A., Lindstrom, L., Simon-Burroughs, M., Martin, J. E., & McCray Sorrells, A. (2008). From marginalized to maximized opportunities for diverse youth with disabilities: A position paper of the Division on Career Development and Transition. *Career Development and Transition for Exceptional Individuals*, *31*, 56–64.

Walker, J. M. T., Hoover-Dempsey, K. V., Whetsel, D. R., & Green, C. L. (2004). *Parental involvement in homework: A review of current research and its implications for teachers, after school program staff, and parent leaders*. Retrieved from www.hfrp.org/content/download/1261/48764/file/parent_involve_homework.pdf

Wandry, D. L., & Pleet, A. M. (Eds.). (2009). *Engaging and empowering families in secondary transition: A practitioner's guide*. Arlington, VA: Council for Exceptional Children.

Weiss, H. B., Lopez, M. E., & Rosenberg, H. (2011). *Beyond random acts: Family, school, and community engagement as an integral part of education reform*. Cambridge, MA: Harvard Family Research Project.

Yell, M., Rogers, D., & Rogers, E. L. (1998). The legal history of special education: What a long, strange trip it's been. *Remedial and Special Education*, *19*, 219–228.

J Child Fam Stud (2016) 25:3537–3553
DOI 10.1007/s10826-016-0516-4

ORIGINAL PAPER

Parent Involvement in Secondary Special Education and Transition: An Exploratory Psychometric Study

Kara. A. Hirano[1] · **S. Andrew Garbacz**[2] · **Lina Shanley**[2] · **Dawn A. Rowe**[2]

Published online: 18 August 2016
© Springer Science+Business Media New York 2016

Abstract An increased level of parent involvement in education has been identified as a predictor of positive postschool outcomes for students with disabilities who have traditionally experienced lower rates of employment and postsecondary education than their peers without disabilities. The purpose of this study was to explore the factor structure of scales adapted from the Hoover-Dempsey and Sandler Model of Parent Involvement that might be used to predict parent involvement in secondary special education. An iterative adaption process included adding and revising scale items to reflect parent beliefs and involvement activities related to transition planning and secondary education for parents of high school students with disabilities. Participants were 149 parents of students with disabilities, ages 16–21. Two exploratory factor analyses (EFA) were conducted to examine the psychometric properties of the scales. Results of the EFA for involvement activities suggested a three-factor solution including: Future Planning; Home-based Involvement; and Agency/School-based Involvement. Results of the EFA for Motivators for Involvement suggested a seven-factor solution including: Parent Expectations for the Future; General School Invitations; Role Construction; Perceptions of Time and Energy; Knowledge, Skills, and Self-efficacy; Specific Child Invitations, and Specific Teacher Invitations. Implications and future research directions are discussed.

✉ Kara. A. Hirano
khirano1@uoregon.edu

[1] Department of Special Education and Clinical Sciences, 5208 University of Oregon, Eugene, OR 97403-5208, USA

[2] University of Oregon, Eugene, Oregon, USA

Keywords Parent involvement · Secondary special education · Transition planning

Introduction

Several comprehensive reviews of parent educational involvement research find that students benefit in myriad ways when their parents are involved (Fan & Chen 2001; Hill & Chao 2009). Some of the positive outcomes include more consistent attendance (Falbo et al. 2001), improved homework completion and greater time spent on homework (Callahan et al. 1998), improved-school behavior (Domina 2005; Gonzalez 2002), improved academic performance (Finn 1989), and higher school completion rates (Rumberger et al. 1990). Parent involvement has also been found to have a strong effect (Domina 2005) on in-school outcomes such as academic achievement for students with disabilities (Newman 2005). The National Longitudinal Transition Study-2 (NLTS2) found that students with disabilities whose families were more involved in their education were more likely to receive higher grades and were closer to their measured grade level in reading than students whose families were less involved (Newman 2005).

In addition to academic achievement, parent involvement is also linked to post-school outcomes for youth with disabilities. A 2009 systematic review identified in-school predictors of post-school success for secondary students with disabilities (Test et al. 2009), who typically experience poorer postschool outcomes than their peers without disabilities (Newman et al. 2011). The review focused on the areas of employment, education, and independent living. With annual updates from the National Technical Assistance Center on Transition 17 evidence-based predictors

have been identified including parental involvement and parent expectations (Mazzotti et al. 2015). Students with disabilities who have parents with high expectations for their future success also tend to have better post-school outcomes. For example, students whose parents hold high expectations are more likely to graduate from high school (Doren et al. 2012), attend postsecondary education (Chiang et al. 2012), and be engaged in postschool employment (Carter et al. 2012).

Education policy advocates for parent involvement in education. In 2001, the reauthorization of the Elementary and Secondary Education Act (ESEA) defined parent involvement as "the participation of parents in regular, two-way and meaningful communication involving student academic learning and other school activities" (107th Congress, 2002, section 9101, paragraph 32). Although parent involvement is not directly addressed for families of students with disabilities in the ESEA, the Individuals with Disabilities Education Act (IDEA 2004) highlights the importance of parent participation in making decisions related to their child's education. Paraphrased from the IDEA (2004) regulations, state and local education agencies are required to provide, as part of ongoing services to support positive outcomes for students with disabilities, parent training and informational activities. These training and informational activities play a "vital role in creating and preserving constructive relationships between parents of children with disabilities and schools by facilitating open communication" (IDEA, 20 U.S.C. § 1450, paragraph 11 2004).

Despite the importance of parent involvement in education and mandated parent involvement in decisions pertaining to their child's education, collaborative partnerships between parents and educators remain elusive (Kalyanpur, Harry & Skrtic 2000). Individualized Education Program (IEP) processes are one of the foundations upon which school partnerships with families of students with disabilities are built. However, in a recent study by Landmark et al. (2013), educators reported the primary method for involving parents prior to IEP meetings was completing transition assessments (e.g., interviews, questionnaires). This passive form of involvement has also been documented during IEP meetings. Research has shown the majority of parents attend meetings (Wagner et al. 2012). But many parents provide little to no input on IEP goals (Newman 2005), which leads to the assumption that for some parents, their participation in the transition process and IEP meetings is cursory (Landmark et al. 2013). Since parents report a desire to be more involved in their child's education (Newman 2005), one explanation for this cursory participation is that educators may not be equipped to engage parents in IEP meetings.

Both administrators and teachers often report being unsure of how to effectively engage parents in their child's education (Greenfield et al. 2012), which may be reflected in decreased parent outreach efforts in high schools (Adams & Christenson 2000). Effectively promoting parent involvement in high school can be particularly challenging as parent involvement for students in both general and special education tends to decrease as students get older (Eccles et al. 1993; Newman 2005). Decreasing involvement may be attributed to an interplay of factors including the complexity of high school systems (Adams & Christenson 2000) and curricula (Hill & Chao 2009) as well as emerging adolescent independence and autonomy (Hollifield 1994).

The gap between home and school needs to be addressed in secondary schools because parent involvement has been found to be strongly associated with improved post-school (Test et al. 2009) and in-school secondary outcomes (Jeynes 2005), and students continue to describe the importance of their families in their success (Lindstrom et al. 2007).

Considerably more research on parent involvement has been conducted with parents of elementary and middle school children (e.g. Green et al. 2007; Hoover-Dempsey & Sandler 2005; Walker et al. 2011) in comparison to parents of secondary students. Examining the relevance of this work to secondary students may provide fruitful avenues for improving parent involvement in high schools. For example, one way to conceptually organize efforts aimed at identifying effective parent involvement practices would be to design interventions aimed at factors likely to influence parents' decision to become involved.

A model for parent involvement created by Hoover-Dempsey & Sandler (1995, 1997) and later revised in collaboration with others (Hoover-Dempsey & Sandler 2005; Walker et al. 2005) provides a framework for examining variables hypothesized to contribute to parents' decision to become involved in their child's education at home or at school. This model of the parent involvement process includes three constructs affecting parent motivation for involvement in their child's education at home and at school. The first motivational construct, *parents' motivational beliefs*, includes beliefs about what parents should do in relation to their children's education (role construction). This includes beliefs about their responsibilities as a parent including whether they should attend school meetings or assist with homework. The next construct is *self-efficacy*, which are beliefs about the likely outcomes of involvement (Hoover-Dempsey & Sandler 1995). For example, if a parent believes it is their responsibility to assist their child with homework, their self-efficacy is high if they believe that their efforts will be successful.

The second motivational construct, parents' *perceptions of invitations for involvement from others*, includes parent perceptions of invitations to be involved in their child's education from the school (e.g., environment, culture) as well as specific invitations for involvement from the child's

teacher and the child. The third motivational construct in the Hoover-Dempsey and Sandler model is *parents' perceived life context*. This construct includes parents' perception of the time and energy they have for involvement activities, as well as their perception of their own personal knowledge and skills they bring to bear.

A decade after developing a theoretical model of parent involvement, Hoover-Dempsey and Sandler (2005) utilized parents of children in 1st–6th grades to develop and refine (Walker et al. 2005) scales associated with each of the model constructs in order to test the validity of their model. This work resulted in a survey instrument consisting of nine scales measuring the aforementioned motivational constructs. Whereas many subsequent studies conducted with elementary and middle school populations have examined the ability of model components to predict parent involvement (Green et al. 2007; Walker et al. 2011; Whitaker & Hoover-Dempsey 2013), most studies of the Hoover-Dempsey and Sandler (2005) model involving high school students have simply examined the predictive utility of factors that are associated with components of the model (Deslandes & Bertrand 2005; Overstreet et al. 2005; Shumow & Lomax 2002). For example, Shumow and Lomax (2002) examined whether socioeconomic status and neighborhood quality predict parental self-efficacy while considering adolescent academic and social-emotional adjustment through three aspects of parenting (i.e., monitoring, parent involvement, and parent-adolescent communication). Results from this study indicated that parental self-efficacy for 929 parents of 10- to 17-year old adolescents predicted parent involvement and monitoring for all youth in the sample regardless of racial or ethnic group (European American, African American, and Latin American). Overstreet et al. (2005) surveyed 159 African American parents of elementary ($M = 7.2$) and middle/high school ($M = 14.7$) students and found several statistically significant predictors of school involvement including parents' reports of school receptivity to involvement (i.e., the general school invitations scale) and parental aspirations for their child.

Only one known study has specifically examined whether the Hoover-Dempsey and Sandler (2005) model components predict involvement for parents of students with disabilities, and this study only included parents of elementary aged students. Fishman and Nickerson (2014) surveyed parents of elementary students receiving special education services and found the only significant predictor of parent participation in special education activities was the specific teacher invitations for involvement scale. Notably, invitations from students were also important as parents reported being more involved at both home and school when their students specifically asked them to be. In summary, studies examining the ability of the Hoover-Dempsey and Sandler model to predict parent involvement in high school have identified general school invitations (Overstreet et al. 2005) and specific child invitations as predictors of involvement (Deslandes & Bertrand 2005). However, there are currently no known studies examining the applicability of the Hoover-Dempsey and Sandler scales to parents of secondary students with disabilities.

Despite research findings, policy, and stakeholder perspectives, parent educational involvement tends to decrease as students move from middle to high school (Wang et al. 2014), as do schools' parent outreach efforts (Adams & Christenson 2000), suggesting that current practices may be insufficient. The gap between home and secondary school needs to be addressed as increased levels of parent involvement has been found to be positively associated with improved post-school outcomes. Although the Hoover-Dempsey and Sandler (2005) model is a useful tool for examining parent involvement for elementary and middle school aged students, the utility of the Hoover-Dempsey and Sandler model and scales have not been tested with parents of high school aged students with disabilities. It is likely that involvement for parents of secondary students with disabilities are distinct due not only to developmental changes, but also the necessity for planning and preparing for the transition from high school to adult life (Hirano & Rowe 2015). Adequately measuring factors that impact parent involvement in secondary special education and transition would allow both researchers and educators to succinctly target efforts to increase parent involvement.

Therefore the purpose of this study was to examine the factor structure of the adapted Hoover-Dempsey and Sandler scales for parents of high school students with disabilities. The research reported here primarily addressed one question: What is the underlying factor structure of the adapted 76-item questionnaire designed to align with the nine scales included in the Hoover-Dempsey & Sandler Model for Parent Involvement (Walker et al. 2005)? Based on prior research regarding the predictors of post-school success for high school aged youth with disabilities (Test et al. 2009) and qualitative studies with families of high school age youth with disabilities about the transition process (e.g. Geenan et al. 2001b), it was hypothesized that the factor structure would remain consistent with the scales in the Hoover-Dempsey and Sandler Model for Parent Involvement.

Method

Participants

The final participating sample (i.e., those participants who completed at least 90 % of survey items) included 150 family members or legal guardians of high school students (16–21 years) with disabilities. Participant demographic

information is reported in Table 1. The majority of family members completing the survey were White (82 %) birth mothers (68 %) of male (65 %) children. Seventy-five percent of respondents ($n = 112$) reported their child was not eligible for free or reduced lunch. Most of the parents indicated their child was receiving special education services under the classification of Autism (31 %) or Intellectual Disability (22 %).

Procedures

Participants were recruited through federally funded Parent Training and Information (PTI) Centers throughout the United States. Regional Coordinators for PTI Centers and Community Parent Resource Centers were each contacted as potential channels for participant recruitment. State PTI Coordinators agreed to disseminate a survey link via parent email lists and social media pages. Before starting the electronic survey, all participants completed an informed consent form, indicating the voluntary nature of their participation in the survey and their right to end their participation at any time, as well as the ability to skip any questions they did not wish to answer.

Measures

Nine scales (two Involvement scales and seven Motivators of Involvement scales) from the Hoover-Dempsey and Sandler Model of Parent Involvement (Walker et al. 2005) were adapted for this study. Both the original and adapted involvement scales were rated on a 6-point Likert scale ranging from *never* to *daily* or *disagree very strongly* to *agree very strongly*. Internal consistency for the original scales ranged from .70–.88. Information on the original scales is presented first followed by the adapted scales utilized in this study. One additional scale was added, *Parent Expectations for the Future*, based on questions from the National Longitudinal Transition Study-2 (NLTS2). Results from this study indicated that parent involvement varies according to parent expectations for the future (Newman 2005) and thus, parent expectations for the future may be an important construct missing from the Hoover-Dempsey and Sandler model that is relevant for this population. In total, the survey consisted of 10 scales, demographic information, questions regarding satisfaction with transition and one open-ended question. See Fig. 1 for a graphical representation of the scale constructs.

Original Hoover-Dempsey & Sandler Scales

Parents' Motivational Beliefs The first motivation construct in the Hoover-Dempsey and Sandler Model of Parent

Table 1 Demographic information

Variable	Total sample ($N = 149$)	
	n	%
Your relationship to this child		
Birth mother	101	67.8
Birth father	11	7.4
Adoptive mother	14	9.4
Other	20	13.4
Missing	3	2.0
Gender of child		
Male	97	65.1
Female	52	34.9
Race/ethnicity of the child		
White	122	81.9
Hispanic/Latino	8	5.4
Multiracial	8	5.4
Other	11	7.3
Eligibility for free or reduced lunch		
Yes	37	24.8
IDEA classification		
Autism	46	30.9
Intellectual disability	32	21.5
Multiple disabilities	19	12.8
Other health impairment	16	10.7
Emotional disturbance	10	6.7
Specific learning disability	10	6.7
Other	14	9.4
Missing	2	1.3
School		
Regular school that serves a wide variety of students	86	57.7
Transition program for 18–21 year old students	28	18.8
School that served only students with disabilities	12	8.1
Other	22	14.8
Missing	1	.7
Age		
16	28	18.8
17	35	23.5
18	24	15.3
19	32	19.3
20	13	10.0

Table 1 continued

Variable	Total sample ($N = 149$)	
	n	%
21	13	10.0
Missing	4	2.7
Grade		
Tenth	34	22.8
Eleventh	32	21.5
Twelfth	35	23.5
18–21 Transition program	45	30.2
Missing	3	2.0

Involvement (2005) is Parents' Motivational Beliefs, which includes parental role construction and parental self-efficacy. The *Parental Role Construction* scale encompasses the beliefs regarding what parents should do in relation to their child's education. Next, the *Parental Self-efficacy for Helping the Child Succeed in School* scale refers to a parents' beliefs that the skills and knowledge they posses, along with their involvement, will positively affect their student's in-school and post-school success.

Parents' Perceptions of Invitation to Involvement from Others The second motivation construct is Parents' Perceptions of Invitations to Involvement from Others, which contains three scales. The first scale is called *General School Invitations* and these questions assess parents' perceptions of the general school environment and attitudes toward parent involvement. Next is the *Specific Teacher Invitations* scale. This scale assesses parents' perceptions of invitations for involvement from their child's teachers. Finally, the *Specific Child Invitations* scale is designed to measures parents' perceptions of invitations to be involved from their child.

Parents' Perceptions of Life Context Variables The third construct is Parents' Perceptions of Life Context Variables and the first scale within this construct is *Skills and Knowledge for Involvement.* This scale assesses parents' skills and knowledge, which are thought to impact their motivation for involvement. That is, if parents believe they have skills and knowledge that will be helpful in specific domains of involvement, they are more likely to become involved. The final scale is *Time and Energy for Involvement.* This scale assesses parents' perceptions of the time and energy they have to participate in involvement at home and with school-based involvement activities.

Involvement Scales The constructs measured by these scales are thought to predict parent involvement at home and school. The *Home-based Involvement* scale assesses parents' educationally supportive activities at home such as helping with homework or monitoring the child's progress. The *School-based Involvement* scale assesses parents' school-based involvement activities.

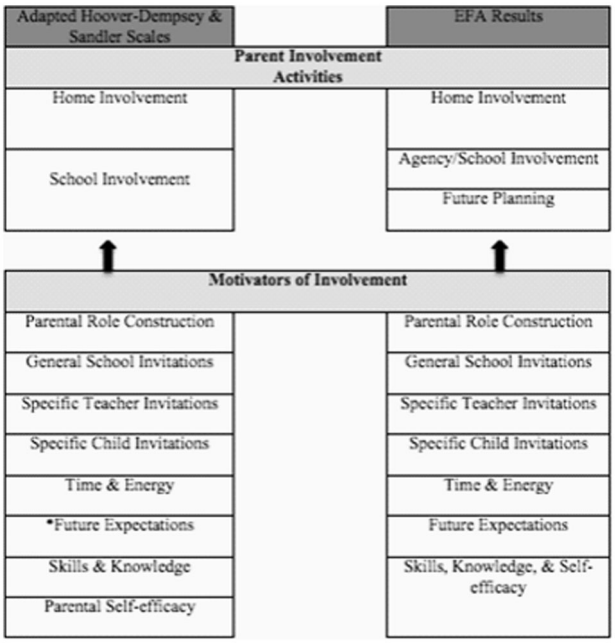


Fig. 1 Hypothesized and Exploratory Factor Analysis Results. * Not an original Hoover-Dempsey & Sandler scale

Procedures for Adapting the Hoover-Dempsey and Sandler Scales Adaptations of the Hoover-Dempsey and Sandler scales for secondary special education and transition planning were completed in an iterative manner. First, a panel of six experts (i.e., two university faculty and one researcher in the field of secondary special education and transition, one researcher with expert knowledge of family involvement in transition planning, one university faculty with expert knowledge on home-school partnerships, and one former special education teacher) collaborated to eliminate questions from the original scales that did not appear to conceptually align with secondary special education and transition planning and develop items based on parent involvement and transition planning literature. Once the initial draft of scales was finalized, the aforementioned six professionals reviewed the scale items, but this time four family members of transition-aged youth with disabilities also provided feedback on scale items. Operational definitions of the constructs and sample questions from the revised Hoover-Dempsey & Sandler scales (Walker et al. 2005) were created along with the adapted scales to facilitate an iterative development. Professionals and families examined the adapted scales to assess (a) whether the scale

was measuring what it aimed to measure (i.e., face validity) and (b) whether the elements within the scale were relevant and representative of the construct to be measured (i.e., content validity; Lynn 1986). Professionals reviewed the constructs and items and provided narrative and/or verbal feedback. Families attended a focus group and provided feedback on (a) the ease of completion, (b) clarity of questions, (c) relevance to their experience, and (d) any questions they felt were missing. Feedback from both professionals and parents was incorporated into the survey. For example based on feedback from professionals, questions were added to assess parent satisfaction with the transition planning experience, (e.g. "I am satisfied with the transition planning services my son/daughter has received"). In addition some parents indicated it would be helpful to have examples following some of the scale items (e.g. "I know how to help my child develop independent and community living skills [grooming, taking care of a household, money management, transportation, communication, health]). Also, two parents suggested it would be helpful to have space at the end of the survey where they could provide additional information or comments.

Adapted Scales A total of 84 items were included in the adapted measure. The adapted measure included components of the revised scales from the Hoover-Dempsey and Sandler model (Walker et al. 2005; e.g. "I believe it's my responsibility to communicate regularly with my child's teachers"), but 46 additional questions were constructed to make the scales relevant to high school-aged youth transitioning to adulthood (e.g. "Someone in this family talks to this child about his/her plans for the future"). These additional items were derived from literature on parent involvement in transition planning and transition planning inventories (e.g. Casey Life Skills 2012; Geenan et al. 2001a; Newman 2005). Adapted scales included the following 10 scales: (1) *Parental Role Construction* (10 items), (2) *Parental Self-efficacy for Helping the Child* (3 items), (3) *General School Invitations* (7 items), (4) *Specific Teacher Invitations* (6 items), (5) *Specific Child Invitations* (9 items), (6) *Skills and Knowledge for Involvement* (9 items), (7) *Time and Energy for Involvement* (6 items), (8) *Parental Home-Based Involvement* (14 items), (9) *Parental School-Based Involvement* (4 items), (10) *Parent Expectations for the Future* (8 items). Items on scales 1–7 were rated on a 6-point Likert scales ranging from *disagree very strongly* to *agree very strongly*. Items on scales 8 and 9 were rated on a 6-point Likert scale ranging from *never* to *daily*. Items on scale 10 assessed parent expectations for their child's future taken from the NLTS2 (2003) study (e.g., It's likely my child will "graduate from high school with a regular diploma", "purchase and prepare his/her own snacks and meals"). This scale utilized a 5-point Likert scale ranging from *definitely won't* to *definitely will*. For descriptive purposes, 8-items were included to assess parents' overall experience and satisfaction with transition planning (e.g., "The school is preparing my son/daughter well for adult life"). A 6-point Likert scale was also used for these items with answers ranging from *disagree very strongly* to *agree very strongly*.

Demographic and Satisfaction Items Demographic items included (a) the role of the person completing the survey, (b) the state where the family resides, (c) the gender of the student, (d) the student's free or reduced lunch status, (e) the student's race/ethnicity, (f) the student's special education classification, (g) the type of school program the student attends, and (h) the student's grade level and (i) age. Eight questions were also added to the survey to assess parents' level of satisfaction with the transition planning services provided by the school (e.g. "I am satisfied with my level of involvement in my child's transition planning") and one open-ended question ("Is there anything else you would like me to know about your experience in transition planning for your child?").

Data Analyses

An Exploratory Factor Analysis (EFA) was utilized based on best practice guidelines (Henson & Roberts 2006). A confirmatory factor analysis approach was considered as there was an a priori expectation concerning the factor structure of the measure based on the original Hoover-Dempsey and Sandler model scales, although items were both added and adapted and the measures were administered to parents of secondary students with disabilities. Therefore, without knowledge of the precise factor structure of the adapted instrument for the population of interest, it was determined that an EFA was the most appropriate analysis. Because we were unsure of the extent to which there would be (a) unique factors of both home and school involvement in the Involvement scales and (b) similar motivators for involvement, two separate EFAs were conducted on the scale items. The analysis was conducted in three phases. First, the sampling adequacy was examined to ensure that it was appropriate to proceed with the factor analysis; next the structure of Involvement scales was analyzed, followed by the examination of the Motivators for Involvement scales.

In the first analytic step, the adequacy of the sample size ($n = 149$) and the participant-to-item ratio for the Motivators of Involvement (2.57 : 1) and Involvement (8.28 : 1) was evaluated. Although various recommendations exist for necessary ratios of cases to variables for factor analyses (i.e. ranging from 3 : 1 to 20 : 1; Hogarty et al. 2005), Arrindell and van der Ende (1985) found that such rules often do not affect the stability of factor solutions. Nonetheless, the Kaiser-Meyer-Olkin (KMO) measure was utilized to assess

the suitability of the data for factor analysis because generating a KMO measure is recommended when the cases to variable ratio is less than 5 : 1 (Williams et al. 2012). The KMO measure for these data was generated using SPSS (Version 22; IBM Corporation). The KMO value was evaluated based on the acceptable limit of .5 (Field 2013), which would suggest the sample size is adequate for factor analysis. The anti-image correlation matrices were also examined to determine the KMO values of individual items.

Next, a variety of statistical tests were employed in SPSS to inform the number of factors requested in the two EFAs conducted in Mplus. Both the Minimum Average Partial correlation (MAP; Velicer 1976) and the Parallel Analysis test of factor retention were conducted. In cases with conflicting evidence from the MAP and Parallel Analysis on the number of factors to retain, two EFAs were conducted and results compared. Guidelines by Stevens (2002) were used to interpret factor loadings in these analyses. Stevens (2002) suggests guidelines according to sample size and loadings. If $n = 100$ Stevens suggests loadings of .512 or higher if $n = 200$, Stevens also recommends loadings of .384 or higher. These guidelines were used to interpret factor loadings in this analysis. With a sample size of 149, the initial cutoff criteria were set to |.40|. Items that loaded at or above |.40| on more than one factor were considered for exclusion based on these crossloadings. Finally, ordinal alpha values (Zumbo et al. 2007) based on polychoric correlations (Gadermann et al. 2012) were generated for all factors to assess internal consistency.

It was hypothesized that the factors identified in this EFA would be correlated and therefore the EFA was initially estimated with a promax oblique correlation. Fabrigar et al. (1999) suggest applying an orthogonal rotation next if the factor matrix indicates low correlations (i.e. less than $r < .20$) between factors. In such a case, an orthogonal rotation was also planned.

Results

All participants entered their survey responses directly into an online Qualtrics software survey program (2013) and the responses were transferred to SPSS Version 22 (IBM Corp. 2013). Prior to analysis, the data file was screened to identify and eliminate responses from participants who completed less than 90 % of scale questions. This resulted in omitting 36 cases from these analyses, with a final sample of 149 participants. Missing data for the rest of the survey participants was considered to be missing at random and all available information for the remaining cases was evaluated in Mplus using the Weighted Lease Squares Means and Variance (WLSMV) estimator. In the participating sample, 74 % of the respondents completed all items and nonresponse was fairly evenly spread among items with response rates ranging from 95.3–100 % across all items.

Item responses were ordinal and these data violated the modeling assumption of multivariate normality. Therefore Mplus 7.0 for Macintosh computers (Muthén & Muthén 2012) was utilized to conduct the factor analyses because it offers a variety of estimation methods, and is capable of handling non-normal, categorical data. The WLSMV estimator for categorical variables was applied for these analyses because it is able to adjust for non-normal variable distributions common in ordinal data.

Sampling Adequacy

The KMO measure for these data was generated using SPSS (Version 22; IBM Corporation). The KMO values of .73 for the Motivators for Involvement scales and .80 for the Involvement scales were well above the acceptable limit of .5 (Field 2013), suggesting the sample size was adequate for factor analysis. The anti-image correlation matrices were also examined to determine the KMO values of individual items. Items in the Motivators for Involvement ranged from .46 to .86, with 2 items falling below .5 (.49 and .46). Field (2013) suggests considering eliminating items that fall below .5. However, because the overall KMO was adequate and these items were close to the cutoff, they were not eliminated but were flagged and monitored in future analyses. The KMO values for the items in the Involvement scales ranged from .68 to .90. Therefore, all items were retained in both scales based on the KMO screening values.

Involvement Scales

An EFA of the scale items designed to measure home and school-based involvement was estimated with a Promax oblique rotation in Mplus (Muthén & Muthén 2012). Results of a Parallel Analysis with 3000 randomly generated data sets identified suggested six factors for retention while results from the MAP test suggested a three-factor solution. Because these tests generated conflicting recommendations, both a three- and a six-factor model were generated and compared.

In both models Stevens' (2002) guidelines for factor loadings were employed. Specifically, items with either (a) loadings below .40 on all factors or (b) crossloadings of .40 or greater on more than one factor were considered for elimination. Applying these criteria to the six-factor solution resulted in 13 flagged items. However, eliminating these 13 items due to poor loadings or substantial crossloadings, resulted in no stable factors with four or more variables loading at .40 or above. Therefore, a three-factor model was requested. In the three-factor solution, all 18 items loaded on only one of the three factors at .40 or

Table 2 Involvement scales factor pattern matrix

Item	*M* (SD)	Future Planning	Home-based Involvement	Agency/School-based Involvement	h^2
1	4.48 (1.28)	.494	.362	−.047	.425
2	3.82 (1.40)	.988	.030	−.123	.959
3	3.67 (1.44)	.973	.018	−.101	.928
4	2.56 (1.60)	.681	−.262	.215	.503
5	4.97 (1.50)	−.074	.887	−.102	.692
6	4.68 (1.34)	−.076	.675	.015	.451
7	4.57 (1.45)	.208	.683	.093	.315
8	4.36 (1.59)	.345	.570	.052	.642
9	4.08 (1.73)	.158	.649	−.009	.560
10	4.99 (1.37)	−.118	.862	−.097	.482
11	4.19 (1.65)	.079	.628	.142	.650
12	4.58 (1.38)	−.100	.495	.065	.529
13	4.14 (1.41)	−.238	.577	.176	.450
14	2.94 (1.65)	.055	.218	.409	.532
15	2.40 (1.55)	.112	.021	.631	.657
16	2.67 (1.11)	.194	−.125	.725	.540
17	2.56 (1.08)	−.276	.011	.806	.267
18	2.45 (1.20)	−.169	.031	.730	.448
Trace		3.074	4.436	2.434	

Note. Pattern coefficients greater than |.40| are underlined and retained for that factor

The eigenvalue of the fourth, unretained factor was 1.142.

Trace is the sum of squares of the loadings

h^2 = communality coefficients

above. Based on the superior item loadings and the overall parsimony of the three-factor model, it was considered the best fit for the Involvement items.

The promax factor loadings for the 18 Involvement items are presented in Table 2 and items related to each factor are presented in Table 3. The resulting factors included Factor 1: Future Planning, ordinal $\alpha = .86$, Factor 2: Home-based Involvement, ordinal $\alpha = .88$, and Factor 3: Agency/School-based Involvement, ordinal $\alpha = 77$. Future Planning displayed minor associations with both Home-based Involvement and Agency/School-based Involvement, $r = .20$ and $r = .17$, respectively. On the other hand, Home-based Involvement and Agency/School-based Involvement demonstrated a correlation of .48, suggesting that they were moderately related factors. This was expected as the home and school-based items assessed current involvement behaviors, while the Future Planning items assessed parents' communication with their child about child and parental hopes and expectations for the future.

Motivators of Involvement

An EFA of the items measuring Motivators of Involvement were estimated using a promax oblique rotation in Mplus (Muthén & Muthén 2012). Results of the MAP test suggested an eight-factor solution while results of a Parallel Analysis/Monte Carlo with 3000 randomly generated data sets identified seven latent factors for retention. Because these tests generated conflicting recommendations, the eight-factor model and the seven-factor model were analyzed and compared.

Stevens' (2002) guidelines were again applied to evaluate item loadings. In the eight-factor model, seven items were considered for elimination, but removing those seven items from the analysis resulted in one of the eight factors without any variable loadings above .40. Therefore, a seven-factor model was considered as a potentially better fit for the data.

Based on these findings, a 7-factor model utilizing all 58 items designed to assess motivators of involvement was developed. Item retention criteria remained the same as above and two items were eliminated because they did not have loadings above .40 on any of the seven factors. Additionally, one item was eliminated because it was not conceptually aligned with the other items in the factor. This left a final model with 7 factors and 55 items. The promax factor loadings for these 55 items are presented in Table 4 and items associated with each factor are presented in

Table 3 Exploratory factor analysis of parent involvement activity scale items with a promax oblique rotation

Factor	Variables	ordinal α
Future Planning		.86
	Someone in this family….	
	1. expresses their hopes/expectations for this child's future.	
	2. talks with this child about his/her plans for the future.	
	3. talks with this child about their future job interests and goals.	
	4. helps this child explore college or other post-high school education programs.	
Home-based Involvement		.88
	Someone in this family….	
	6. helps this child sustain recreation activities.	
	7. helps this child learn about taking care of their physical health.	
	8. helps this child learn how to take care of their emotional health.	
	9. helps this child develop academic skills (reading, writing, mathematics).	
	10. helps this child develop communication skills (speaking, listening).	
	11. helps this child maintain friendships.	
	12. monitors this child's progress at school.	
	13. is in contact with this child's teachers.	
Agency/School-based Involvement		.77
	Someone in this family….	
	14. helps this child connect with adult service agencies (e.g., Social Security, Vocational Rehabilitation).	
	[a]15. helps out at this child's school.	
	[a]16. attends special events at this child's school.	
	17. attends IEP meetings.	
	18. attends transition planning meetings.	

[a] original items from Hoover-Dempsey and Sandler scales

Table 5. The resulting factors were: Factor 1: *Parent Expectations for the Future*, ordinal $\alpha = .94$, Factor 2: *General School Invitations*, ordinal $\alpha = .94$, Factor 3: *Parental Role Construction*, ordinal $\alpha = .93$, Factor 4: *Time and Energy for Involvement*, ordinal $\alpha = .90$ Factor 5: *Knowledge, Skills, and Self-efficacy*, ordinal $\alpha = .93$, Factor 6: *Specific Child Invitations for Involvement*, ordinal $\alpha = .93$, and Factor 7: *Specific Teacher Invitations for Involvement*, ordinal $\alpha = .89$. Lastly, factor scores were calculated and correlated with each other. Factor correlations ranged from −.01 to −.37 with the majority of correlations falling below |0.3| indicating that the Motivators of Involvement were unique and distinct scales. See Fig. 1 for a graphical representation of both EFAs.

Discussion

In response to the need to bridge the home-school gap in secondary special education and transition planning, the objectives of the present study were to adapt and explore the underlying factor structure of scales from the Hoover-Dempsey & Sandler Model of Parent Involvement (2005). The adapted scales were constructed in consultation with parents, teachers, and experts in the field of transition, special education, and parent involvement. In addition, extant literature on transition planning and services was examined. Analyses produced scales represented by ten factors that include seven factors for motivators of parent involvement and three factors for involvement activities, which were somewhat aligned with the Hoover-Dempsey & Sandler Model for Parent Involvement. Below main findings from the study are discussed, corresponding to each factor.

The results from this study confirm the findings from a principal components analysis by Walker et al. (2005), which found a distinction between home- and school-based involvement activities. Several frameworks including Epstein's School, Family, and Community Partnerships model (1995) of overlapping spheres and a transition-specific framework developed by Hirano and Rowe (2015) support the multidimensional nature of parent involvement. A multidimensional view of parent involvement in education expands traditional involvement activities beyond attending meetings and helping with homework to parents who act as decision-makers and evaluators, collaborators, instructors, coaches, and advocates. These findings also support the distinction between home- and school-based activities specifically related to secondary special education and transition planning.

Table 4 Motivator scales factor pattern matrix

Item	*M* (SD)	Future Expectations	Specific School Invitations	Role Construction	Time & Energy	Knowledge, Skills, & Self-efficacy	Specific Child Invitations	Specific Teacher Invitations	h^2
1	2.87 (1.74)	0.758	0.115	0.080	0.062	–0.060	0.016	0.065	0.672
2	2.40 (1.31)	0.887	0.024	0.144	0.052	–0.059	0.033	0.003	0.835
3	2.50 (1.35)	0.895	–0.127	0.027	0.009	0.010	0.094	0.061	0.805
4	2.78 (1.34)	0.786	–0.061	0.006	–0.157	0.171	0.090	0.202	0.718
5	2.93 (1.45)	0.903	–0.092	–0.056	–0.053	–0.020	0.125	0.181	0.865
6	3.32 (1.44)	0.881	–0.229	–0.151	–0.028	–0.026	0.086	0.229	0.794
7	3.74 (1.45)	0.832	–0.246	–0.223	0.008	–0.187	0.089	0.189	0.720
8	1.73 (1.01)	–0.027	–0.002	0.227	0.117	–0.102	0.813	–0.179	0.786
9	1.66 (1.25)	0.045	–0.021	0.117	–0.082	–0.061	0.730	–0.311	0.739
10	2.03 (1.27)	0.020	0.012	0.118	0.079	–0.093	0.799	–0.120	0.714
11	1.88 (1.11)	0.052	–0.181	0.104	0.030	–0.036	0.788	–0.117	0.726
12	2.30 (1.70)	0.126	–0.028	0.080	0.080	–0.072	0.671	–0.018	0.540
13	2.12 (1.46)	0.198	0.112	–0.086	0.025	0.096	0.650	–0.104	0.660
14	4.05 (1.84)	0.122	–0.210	–0.11	0.086	0.024	0.570	0.115	0.451
15	2.97 (1.65)	0.137	0.206	–0.156	–0.063	0.271	0.781	0.158	0.877
16	2.86 (1.52)	0.127	0.239	–0.215	–0.115	0.238	0.817	0.125	0.933
17	1.97 (1.02)	–0.143	–0.235	0.050	–0.039	0.019	0.169	–0.611	0.591
18	2.19 (.90)	–0.267	–0.192	–0.046	0.050	0.049	0.000	–0.804	0.884
19	2.24 (1.01)	–0.261	–0.126	–0.070	0.016	0.080	–0.032	–0.830	0.884
20	2.05 (1.12)	–0.088	–0.206	–0.079	–0.123	–0.062	0.195	–0.794	0.838
21	2.08 (1.08)	–0.176	–0.145	–0.134	–0.101	–0.013	0.123	–0.844	0.891
22	4.26 (1.42)	0.167	0.059	0.096	0.007	0.777	–0.106	–0.182	0.743
23	5.17 (.96)	–0.154	0.005	–0.154	0.048	0.500	–0.045	–0.077	0.352
24	4.24 (1.35)	0.193	–0.108	0.063	–0.002	0.679	–0.040	–0.229	0.677
25	5.38 (.90)	–0.248	–0.088	–0.241	–0.036	0.829	0.163	0.233	0.809
26	5.13 (1.17)	–0.263	–0.086	–0.222	–0.049	0.866	0.054	0.198	0.835
27	4.65 (1.38)	–0.208	–0.267	0.097	–0.023	0.990	0.119	0.148	0.973
28	4.51 (1.47)	–0.162	–0.275	0.103	–0.048	0.962	0.079	0.081	0.934
29	4.05 (1.45)	0.357	0.068	0.093	0.009	0.786	–0.040	–0.148	0.906
30	4.07 (1.37)	0.317	0.136	0.153	0.089	0.728	–0.003	–0.187	0.858
31	4.72 (1.22)	0.269	0.001	–0.030	0.117	0.536	–0.113	–0.002	0.458
32	4.50 (1.34)	–0.090	0.075	0.015	0.082	0.628	–0.059	–0.148	0.464
33	5.14 (1.04)	–0.106	–0.134	0.069	0.865	0.002	0.042	0.146	0.785

Table 4 continued

Item	*M* (SD)	Future Expectations	Specific School Invitations	Role Construction	Time & Energy	Knowledge, Skills, & Self-efficacy	Specific Child Invitations	Specific Teacher Invitations	h^2
34	4.80 (1.20)	−0.036	−0.082	−0.005	0.797	−0.158	0.207	0.132	0.706
35	5.23 (.95)	−0.114	−0.055	−0.122	0.810	−0.082	−0.105	−0.067	0.713
36	4.97 (1.10)	0.012	−0.048	−0.010	0.732	0.164	−0.144	0.052	0.641
37	4.94 (1.13)	0.194	0.303	−0.146	0.636	0.155	0.117	0.004	0.773
38	4.67 (1.29)	0.176	0.178	−0.037	0.701	0.267	0.020	−0.112	0.802
39	5.39 (.86)	−0.296	−0.121	−0.512	0.117	−0.084	0.147	−0.057	0.445
40	5.80 (.48)	−0.215	−0.153	−0.874	0.096	−0.084	−0.093	0.143	0.992
41	5.75 (.60)	−0.236	−0.097	−0.799	0.161	−0.088	−0.003	0.073	0.832
42	5.59 (.71)	−0.029	0.012	−0.769	0.103	−0.051	−0.114	0.023	0.645
43	5.60 (.66)	0.080	−0.197	−0.730	0.015	0.057	−0.184	0.000	0.688
44	5.38 (.99)	0.157	0.167	−0.857	−0.015	−0.043	0.241	−0.126	0.816
45	5.49 (.75)	0.057	0.181	−0.942	−0.037	0.019	0.113	−0.096	0.870
46	5.07 (1.11)	0.274	0.042	−0.839	−0.099	0.069	−0.072	−0.225	0.802
47	5.54 (.79)	0.027	−0.022	−0.854	−0.074	−0.068	−0.024	−0.055	0.675
48	4.96 (1.16)	0.353	0.022	−0.737	−0.022	−0.038	−0.167	−0.227	0.655
49	4.97 (1.23)	0.218	−0.857	0.035	−0.021	0.088	−0.101	0.016	0.652
50	4.86 (1.31)	0.228	−0.916	0.024	0.014	0.037	−0.072	−0.036	0.759
51	4.51 (1.37)	0.298	−0.779	0.054	0.173	0.032	−0.019	−0.033	0.595
52	4.73 (1.45)	−0.108	−0.813	0.016	0.020	−0.019	0.045	−0.155	0.808
53	4.10 (1.64)	−0.091	−0.697	−0.047	0.059	0.082	−0.013	−0.245	0.732
54	4.78 (1.25)	0.073	−0.852	0.007	−0.088	0.191	−0.078	−0.091	0.796
55	4.44 (1.48)	0.048	−0.801	−0.080	−0.002	0.030	0.018	−0.255	0.818
Trace		6.706	5.720	6.964	3.751	6.991	5.439	4.113	

Note. Pattern coefficients greater than |40| are underlined and retained for that factor

The eigenvalue of the eighth, unretained factor was 1.69.

Trace is the sum of squares of the loadings

h^2 = communality coefficients

Table 5 Exploratory factor analysis of parent involvement activity scale items with a promax oblique rotation

Factor	Variables	ordinal α
Expectations for the future		.94
	How likely do you think it is that your son or daughter will do each of the following activities in the future?	
	1. Graduate from high school with a regular diploma.	
	2. Graduate from a postsecondary program (technical or trade school, community college or 4-year college).	
	3. Obtain paid employment and earn enough to support him/herself without financial help from his/her family or the government.	
	4. Live away from home on his/her own.	
	5. Manage his/her own transportation needs (e.g., bus, driver's license, bicycle).	
	6. Attend to his/her own personal grooming and hygiene.	
	7. Purchase and prepare his/her own snacks and meals.	
General school invitations		.94
	[a]8. I feel welcome at this school.	
	[a]9. This school lets me know about meetings and special school events	
	[a]10. Parent activities are scheduled at this school so that I can attend.	
	[a]11. This school's staff contacts me promptly about any problems involving my child.	
	12. My child's teachers contact me to tell me positive things about my child.	
	[a]13. Teachers at this school are interested and cooperative when they discuss my child.	
	[a]14. The teachers at this school keep me informed about my child's progress in school.	
Role Construction	I believe it's my responsibility to…	.93
	[a]15. communicate with my child's teachers regularly.	
	16. attend IEP meetings.	
	17. attend meetings focused on planning my child's transition from high school to adult life.	
	18. make sure that the transition goals on the IEP reflect my child's goals.	
	19. make sure my child is receiving the supports necessary to help him/her achieve their post- school goals.	
	20. talk with my child about their future job interests.	
	21. help my child develop goals for the future.	
	22. help my child obtain employment experiences.	
	23. help my child develop daily living skills (e.g., grooming, taking care of a household, money management, transportation).	
	24. help my child develop academic skills (e.g. reading, writing, etc.).	
Time & Energy	I have enough time and energy to…	.90
	25. attend meetings at the school.	
	[a]26. attend special events at the school.	
	[a]27. communicate with my child's teachers regularly.	
	28. make sure my child is receiving the services and supports he/she needs to be successful at school.	
	29. talk with my child about their goals for the future.	
	30. help my child develop the skills necessary to achieve his/her post-high school goals.	
Knowledge, Skills, & Self-efficacy		.93
	31. I know how to help my child plan for his/her future.	
	32. I make a significant difference in my child's ability to plan for his/her future.	
	33. I feel successful about my efforts to help my child develop skills to achieve his/her goals for the future.	
	34. I understand the purpose of IEP meetings.	
	35. I understand the purpose of transition planning meetings.	

Table 5 continued

	36. I know how to work effectively with the IEP team to create transition goals for my child.	
	37. I know how to work effectively with the IEP team to meet my child's transition goals.	
	38. I know how to help my child develop career or employment goals.	
	39. I know how to help my child work toward achieving his/her career goals.	
	40. I know how to help my child develop independent and community living skills (grooming, taking care of a household, money management, transportation, communication, health).	
	41. I know how to help my child connect with adult service agencies and community resources (Social Security Administration, Vocational Rehabilitation, etc.).	
Specific Child Invitations	My child…	.93
	42. asked me to attend a school meeting.	
	[a]43. asked me to help out at the school.	
	[a]44. asked me to talk with his or her teachers.	
	[a]45. asked me to attend a special event at the school.	
	46. asked me to help them with homework.	
	47. asked me to help them work toward a transition goal (learning to drive, find a job, etc.).	
	[a]48. talked with me about the school day.	
	49. talked with me about plans for their future (job, school, living situation, dreams/goals).	
	50. talked with me about job or career options for their future.	
Specific Teacher Invitations	My child's teacher(s)…	.89
	51. asked me to attend a special event at school related to my child's future (Career Fair, College Fair, Adult Services).	
	52. discussed transition planning at an IEP or other school meeting.	
	53. asked for my input on his/her transition goals.	
	54. asked me to talk with my child about his/her future goals/plans.	
	55. asked me to help my child work towards his/her transition goals.	

[a] Indicates original items from Hoover-Dempsey and Sandler scales

Two differences emerged from the original Hoover-Dempsey and Sandler model (2005) as compared to the adapted scales. First, one item assessing connection with adult agencies loaded with items related to school-based involvement. It is possible that if more items regarding contacting community agencies for support were added to the instrument this factor may become more representative of agency and school-based involvement. This would be an important addition to the scales because one of the main components of transition planning is identifying supports in the community that could help the student achieve their post-school goals. Second, the questions added to the scales regarding parents' communication with their youth about plans for the future emerged as a separate factor. This finding is supported by previous research on the influence of family on adolescent career development. (Blustein et al. 2002; Lindstrom et al. 2007). Blustein et al. (2002) found that young adults from high SES backgrounds benefitted in their school- to-work transitions from support from their parents who encouraged them to explore careers, provided guidance in career planning, and sometimes provided connections with job leads. Gallivan-Fenlon (1994) and Lindstrom et al. (2007), both found that parents of youth with disabilities in their studies did not often provide this same type of support, but did identify parental influence on vocational goals and self-efficacy as an important influence for these students (Lindstrom et al. 2007). However, future research is needed with all forms of involvement, including home- and school-based involvement to see which motivational factors most strongly predict particular forms of involvement.

Several differences also emerged between the original and adapted scales in regard to Motivators of Involvement. First, although the *Parent Expectations for the Future* scale was not included in Hoover-Dempsey and Sandler Model (2005), it emerged in this study as a standalone factor, indicating this construct is distinct from other constructs measured by scale questions. Parent expectations were noted by Walker et al. (2005) as an important omitted parental belief. This construct may be a particularly important when assessing school involvement for parents of high school students with disabilities. In fact, research has highlighted the importance of parent expectations for post-school outcomes of students with disabilities (Carter et al. 2012; Chiang et al. 2012; Doren et al. 2012). More research is needed to examine demographic, student characteristics, and other school-related variables (e.g. teacher/school expectations) that may impact parent expectations.

Another difference between the adapted scales identified here and the Hoover-Dempsey and Sandler (2005) model relates to the parent self-efficacy items. The Hoover-Dempsey and Sandler model indicates that self-efficacy and parental role construction are conceptualized as parts of parents' motivational beliefs. In this analysis, variables designed to measure perceived parent self-efficacy were most closely related to variables aimed to measure skills and knowledge, as opposed to motivational beliefs. This is not surprising because self-efficacy, although distinctly defined from knowledge and skills, is closely related to knowledge and skills. Self-efficacy theory as applied to parent involvement suggests that involvement is influenced not only by expected outcomes, but also by the appraisal of their own personal capabilities (Hoover-Dempsey et al. 1992). Indeed, perception of capabilities, including skills and knowledge, "may reinforce some parents' feelings that they do not 'have what it takes' to help their child succeed in school" (Walker et al. 2005, p. 96).

It may be that the quantity of items affected the factor structure. The adapted survey had only three items aimed at assessing self-efficacy. Future iterations of the scale should include more of these items in order to better discern if self-efficacy and knowledge and skills are separate constructs as indicated in the original model when assessing school involvement for parents of high school students with disabilities. Findings from previous studies have found a relation between parental efficacy and parental involvement in elementary and middle school samples (Eccles & Harold 1996) as well as parents of high school students (Shumow & Lomax 2002). It may be that parental efficacy is also a factor that impacts involvement decisions for parents of high school students with disabilities. A factor assessing self-efficacy would allow researchers to assess whether self-efficacy predicts involvement behaviors and is therefore an area to target interventions.

Five factors including *Parental Perceptions of Time and Energy, Role Construction*, *General School Invitations for Involvement*, *Child Invitations for Involvement*, *Specific Teacher Invitations for Involvement* were consistent with the constructs outlined by the Hoover-Dempsey and Sandler model (Walker et al. 2005). The consistency of these scales and their representativeness across the three larger constructs of Parents' Motivational Beliefs, Parents' Perceptions of Invitation to Involvement from Others, and Perceptions of Life Context Variables suggests that the overall structure of the adapted measure evaluated here is consistent with the Hoover-Dempsey and Sandler Model (2005). Additionally, the stability of these scales suggest that these facets of parent involvement may remain salient across all levels of schooling regardless of student disability status.

Time and Energy emerged as a separate construct. Families have identified many barriers to participation in transition planning and preparation of their student for adult life including insensitivity and discrimination (Geenan et al. 2001b), lack of information, (Hetherington et al. 2919), and lack of follow-up from schools (Cooney 2002). In a

qualitative study by Geenan et al. (2001b), the single greatest barrier to involvement parents reported was poverty, suggesting that perhaps when families are focused on meeting their basic survival needs, other activities that are not pressing may be put off or overlooked. There are likely myriad reasons why parents lack the time or energy to participate in transition planning and it also may change over time as contextual factors change. However, parents have acknowledged time and energy as a barrier to involvement, and items in this scale target parents' perceptions of these resources. It is important for school personnel to be aware of how parents' perceptions of time and energy influence their involvement since parents who are not involved are viewed as hard to reach or uncaring (Mapp & Hong 2010) when they may be focusing on meeting their family's needs in other ways.

Role construction and all three types of invitations for involvement (general school, specific school, and specific child) emerged as separate factors indicating that each is a distinct construct. The importance of these constructs on parent involvement behaviors is supported by previous research. For example, Green et al. (2007) found role construction to be a significant predictor of both home and school-based involvement. General school invitations (Overstreet et al. 2005) and specific child invitations (Deslandes & Bertrand 2005) have been identified as important predictors of high school involvement. Future research is needed to examine how role construction and each of these different kinds of invitations for involvement influence parents' reported involvement behaviors. The adapted scales and associated factor structure identified in the present study provides researchers and educators with an avenue for assessing parent role construction for parents of emerging adults.

Several implications for research and practice merge from this study. Research on the scales created to assess motivators of parent involvement in the Hoover-Dempsey and Sandler Model of Parent Involvement (2005) has primarily been conducted with elementary and middle school populations (Green et al. 2007; Walker et al. 2011). A focus of the present study was to adapt the scales for use with parents of students in secondary special education; therefore several iterative steps were taken. The use of an expert professional panel with focus groups of parents facilitated links with relevant literature and theory as well as family experiences with schools and transition planning. The adapted scales allowed the motivational constructs in the Hoover-Dempsey and Sandler Model of Parent Involvement to be applied to another group of students for whom parent involvement is important in influencing post-school outcomes (Test et al. 2009).

In regard to practice, the scales have preliminary evidence. Educators might use these scales to survey parents in order to better understand strengths and needs of families with whom they work. Educators could also glean how families are supporting students' transition goals and areas in which families may need more support. Providing parents the opportunity to take the survey may prompt them to consider transition planning in new ways and identify questions or needed areas of support.

Although there is preliminary evidence to support the use of these scales, further validation work is necessary. Future research should incorporate findings from this study and seek to confirm the factor structure of the scales with a larger and more diverse sample. Furthermore, participants completed the scales examined in the present study in an average of 16 minutes. It would be useful to investigate efficient data collection systems (e.g., for whom certain scales are most beneficial). Additionally, future research should seek to examine predictors of parent involvement with attention to the moderating effect of demographic variables known to impact involvement such as SES, student gender, and disability-type.

Limitations and Future Research Directions

Although findings from the current study provide important implications, they must be considered within the context of several limitations. These limitations inform future research avenues. First, PTIs across the United States were contacted to distribute the survey. As a result, it is possible that parents responding to the survey were more involved in their students' schooling and transition planning than parents not connected to the PTIs. Future research should seek to expand recruitment efforts beyond PTIs, perhaps finding families through schools, adaptive recreation programs or community agencies serving youth with disabilities and their families. Second, the majority of respondents were White mothers of male children who were ineligible for free and reduced lunch receiving special education services under autism and intellectual disability categories. The sample for this study is not representative of the population of children and youth receiving special education services where only 13 % of students receiving services are identified as White and only 7 % of students are receiving services under the autism spectrum disorder category and 7 % under intellectual disability (Kena et al. 2014). Therefore, this factor structure is representative of the sample who participated in this study and it is unclear how a more diverse sample would respond. Future research should aim to recruit a diverse sample of participants. Third, this was an exploratory study. Future research should seek to replicate these findings with larger and more diverse samples. Finally, this exploratory psychometric study provided initial support that the scales and factors are sound. An important next step in this line of inquiry is to determine the extent to which the factors identified in this study predict postschool

outcomes for high school students with disabilities. When those predictors are identified, interventions can be tailored and targeted to increase parent involvement in secondary special education and transition planning.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no competing interests.

References

Adams, K. S., & Christenson, S. L. (2000). Trust and the family–school relationship: An examination of parent–teacher differences in elementary and secondary grades. *Journal of School Psychology*, *38*, 447–497. http://dx.doi.org/10.1016/S0022-4405(00)00048-0.

Arrindell, W. A., & Van der Ende, J. (1985). An empirical test of the utility of observer-to-variables ratio in factor and component analysis. *Applied Psychological Measurement*, *9*, 165–178. doi:10.1177/014662168500900205.

Blustein, D. L., Chaves, A. P., Diemer, M. A., Gallagher, L. A., Marshall, K. G., Sirin, S., & Bhati, K. S. (2002). Voices of the forgotten half: The role of social class in the school-to-work transition. *Journal of Counseling Psychology*, *49*, 311–323.

Callahan, K., Rademacher, J. A., & Hildreth, B. L. (1998). The effect of parent participation in strategies to improve the homework performance of students who are at risk. *Remedial and Special Education*, *19*(3), 131–141.

Carter, E. W., Austin, D., & Trainor, A. A. (2012). Predictors of postschool employment outcomes for young adults with severe disabilities. *Journal of Disability Policy*, *23*, 50–63. doi:10.1177/1044207311414680.

Casey Life Skills. (2012). *Casey Family Programs*. Seattle, WA: Retrieved from: casey.org.

Chiang, H. M., Cheung, Y. K., Hickson, L., Xiang, R., & Tsai, L. Y. (2012). Predictive factors of participation in postsecondary education for high school leavers with autism. *Journal of Autism and Developmental Disorders*, *42*, 685–596. doi:10.1007/s10803-011-1297-7.

Cooney, B. F. (2002). Exploring perspectives on transition of youth with disabilities: Voices of young adults, parents, and professionals. *Mental Retardation*, *40*(6), 425–435.

Deslandes, R., & Bertrand, R. (2005). Motivation of parent involvement in secondary-level schooling. *Journal of Educational Research*, *98*, 164–175. doi:10.3200/JOER.98.3.164-175.

Domina, T. (2005). Leveling the home advantage: Assessing the effectiveness of parental involvement in elementary school. *Sociology of Education*, *78*(3), 233–249.

Doren, B., Gau, J. M., & Lindstrom, L. E. (2012). The relationship between parent expectations and postschool outcomes of adolescents with disabilities. *Exceptional Children*, *79*, 7–23. doi:10.1177/001440291207900101.

Eccles, J. S., & Harold, R. D. (1996). Family involvement in children's and adolescents' schooling. In A. Booth & J. Dunn (Eds.), Family–school links: How do they affect educational outcomes? Hillsdale, NJ: Erlbaum.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist*, *48*(2), 90–101. doi:10.1037/0003-066X.48.2.90.

Epstein, J. L. (1995). School/family/community partnerships: Caring for the children we share. *Phi delta kappan*, *76*(9), 701–712.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational psychology review*, *13*(1), 1–22.

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, *4*, 272–299. doi:10.1037/1082-989X.4.3.272.

Falbo, T., Lein, L., & Amador, N. A. (2001). Parental involvement during the transition to high school. *Journal of Adolescent Research*, *16*(5), 511–529.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Thousand Oaks, CA: Sage Publications, Inc.

Finn, J. D. (1989). Withdrawing from school. *Review of educational research*, *59*(2), 117–142.

Fishman, C. E. & Nickerson, A. B. (2014). Motivations for involvement: A preliminary investigation of parents of students with disabilities. Advance online publication. doi:10.1007/s10826-013-9865-4.

Gadermann, A. M., Guhn, M., & Zumbo, B. D. (2012). Estimating ordinal reliability for Likert-type and ordinal item response data: A conceptual, empirical, and practical guide. *Practical Assessment, Research & Evaluation*, *17*(3), 1–13.

Gallivan-Fenlon, A. (1994). "Their senior year": Family and service provider perspectives on the transition from school to adult life for young adults with disabilities. *Journal of the Association for Persons with Severe Handicaps*, *19*(1), 11–23.

Geenan, S., Powers, L. E., & Lopez-Vasquez, A. (2001a). Multicultural aspects of parent involvement in transition planning. *Exceptional Children*, *67*(2), 265–282.

Geenan, S., Powers, L. E., Lopez-Vasquez, A., & Bersani, H. (2001b). Understanding and promoting the transition of minority adolescents. *Career Development and Transition for Exceptional Individuals*, *26*(27), 27–46.

Gonzalez, A. R. (2002). Parental involvement: Its contribution to high school students' motivation. *The Clearing House*, *75*(3), 132–134.

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler, H. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology*, *99*, 532–544. doi:10.1037/0022-0663.99.3.532.

Greenfield, M. D., Epstein, J. L., Hutchins, D. J., & Thomas, B. G. (2012). Sampler: Improve family and community involvement in high schools. National Network of Partnership Schools at Johns Hopkins University. http://www.csos.jhu.edu/p2000/PPP/Samplers/2012-High-School-Sampler.pdf.

Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comments on improved practice. *Educational and Psychological Measurement*, *66*, 393–416. doi:10.1177/0013164405282485.

Hetherington, S. A., Durant-Jones, L., Johnson, K., Nolan, K., Smith, E., Taylor-Brown, S., & Tuttle, J. (2919). The lived experience of adolescents with disabilities and their parents in transition planning. *Focus on Autism and Other Developmental Disabilities*, *25*(3), 163–172.

Hill, N. E., & Chao, R. K. (2009). *Families, schools, and the adolescent: Connecting research, policy, and practice*. New York: Teachers College Press.

Hirano, K. A., & Rowe, D. A. (2015). A conceptual framework for parent involvement in secondary special education and transition. *Journal of Disability Policy Studies*, *27*, 43–53.

Hogarty, K. Y., Hines, C. V., Kromrey, J. D., Ferron, J. M., & Mumford, K. R. (2005). The quality of factor solutions in

exploratory factor analysis: The influence of samples size, communality, and overdetermination. *Educational and Psychological Measurement*, *65*, 202–226. doi:10.1177/0013164404267287.

Hollifield, J. H. (1994). *High schools gear up to create effective school and family partnerships*. Baltimore, MD: Center on Families, Communities, Schools and Children's Learning, Johns Hopkins University.

Hoover-Dempsey, K. V., Bassler, O. C., & Brissie, J. S. (1992). Explorations in parent-school relations. *Journal of Educational Research*, *85*, 287–294.

Hoover-Dempsey, K. V., & Sandler, H. M. (1995). Parental involvement in children's education: Why does it make a difference? *Teachers College Record*, *97*, 310–331.

Hoover-Dempsey, K. V., & Sandler, H. (1997). Why do parents become involved in their children's education? *Review of Educational Research*, *67*, 3–42. doi:10.2307/1170618.

Hoover-Dempsey, K. V., & Sandler, H. M. (2005). Final performance report for OERI: The social context of parental involvement: A path to enhanced achievement. Presented to Project Monitor, Institute of Education Sciences, U.S. Department of Education, March 22, 2005.

IBM Corp. Released. (2013). *IBM SPSS Statistics for Macintosh, Version 22.0*. Armonk, NY: IBM Corp.

Individuals with Disabilities Education Improvement Act of (2004). P.L. 108-446, 20 U.S.C. $ 1400 et seq.

Jeynes, W. H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education*, *40*(3), 237–269.

Kalyanpur, M., Harry, B., & Skrtic, T. (2000). Equity and advocacy expectations of culturally diverse families' participation in special education. *International Journal of Disability, Development, and Education*, *47*(2), 119–136.

Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., Wilkinson-Flicker, S., & Kristapovich, P. (2014). The Condition of Education 2014 (NCES 2014-083). U.S. Department of Education, National Center for Education Statistics. Washington, DC. http://nces.ed.gov/pubsearch. Accessed 20 Apr 2015.

Landmark, L. J., Roberts, E. L., & Zhang, D. (2013). Educators' beliefs, and practices about parent involvement in transition planning. *Career Development and Transition for Exceptional Individuals*, *36*(2), 114–123. doi:10.1177/2165143412463047.

Lindstrom, L., Doren, B., Metheny, J., Johnson, P., & Zane, C. (2007). Transition to employment: Role of the family in career development. *Exceptional Children*, *73*(3), 348–366.

Lynn, M.R. (1986). Determination and quantification of content validity. *Nursing Research*, *35*, 382–386. doi:10.1097/00006199-198611000-00017.

Mapp, K., & Hong, S. (2010). Debunking the myth of the hard-to-reach parent. In S. L. Christensen & A. L. Reschly (Eds.), Handbook of school-family partnerships. New York, NY: Routledge.

Mazzotti, V., Rowe, D. A., Sinclair, J., & Poppen, M. (2015). Predictors of post-school success: A systematic review of NLTS2 secondary analysis. doi:10.1177/2165143415588047.

Muthén, L. K., & Muthén, B. O. (2012). *Mplus user's guide. 7*. Los Angeles, CA: Muthén & Muthén.

National Longitudinal Transition Study 2 (2003). Parent interview (part 1). http://nlts2.org.

Newman, L. (2005). Family Involvement in the Educational Development of Youth with Disabilities. A Special Topic Report of Findings from the National Longitudinal Transition Study-2 (NLTS2). Menlo Park, CA: SRI International. http://www.nlts2.org/reports.

Newman, L., Wagner, M., Knokey, A. -M., Marder, C., Nagle, K., Shaver, D., & Wei, X. (2011). The post-high school outcomes of young adults with disabilities up to 8 years after high school: A report from the national longitudinal transition study-2 (NLTS2). Ncser 2011-3005. National Center for Special Education Research.

Overstreet, S., Devine, J., Bevans, K., & Efreom, Y. (2005). Predicting parental involvement in children's schooling within an economically disadvantaged African American sample. *Psychology in the Schools*, *42*, 101–111. doi:10.1002/pits.20028.

Qualtrics. Version (2013). Provo, UT.: Author

Rumberger, R. W., Ghatak, R., Poulos, G., Ritter, P. L., & Dornbusch, S. M. (1990). Family influences on dropout behavior in one california high school. *Sociology of Education*, 283–299.

Shumow, L., & Lomax, R. (2002). Parental efficacy: Predictor of parenting behavior and adolescent outcomes. *Parenting: Science and Practice*, *2*, 127–150. doi:10.1207/S15327922PAR0202_03.

Stevens, J. (2002). *Applied multivariate statistics of the social sciences* (4th ed.). Mahwah, NJ: Erlbaum.

Test, D., Mazzotti, V., Mustian, A., Fowler, C., Krtering, L., & Kohler, P. (2009). Evidence-based secondary transition predictors for improving postschool outcomes for students with disabilities. *Career Development for Exceptional Individuals*, *32*(3), 160–181. doi:10.1177/0885728809346960.

Velicer, W. F. (1976). Determining the Number of Components from the Matrix of Partial Correlations. *Psychometrika*, *41*, 321–327.

Wagner, M., Newman, L., Cameto, R., Javitz, H., & Valdes, K. (2012). A national picture of parent and youth participation in IEP and transition planning meetings. *Journal of Disability Policy Studies*, *23*, 40–55. doi:10.1177/1044207311425384.

Walker, J. M., Ice, C. L., Hoover-Dempsey, K. V., & Sandler, H. M. (2011). Latino parents' motivations for involvement in their children's schooling: An exploratory study. *The Elementary School Journal*, *111*, 409–429. doi:10.1086/657653.

Walker, J. M., Wilkins, A. S., Dallaire, J., Sandler, H. M., & Hoover-Dempsey, K. V. (2005). Parental involvement: Model revision through scale development. *Elementary School Journal*, *106*, 85–104. doi:10.1086/499193.

Wang, M., Hill, N. E., & Hofkens, T. (2014). Parental involvement and African American and European American adolescents' academic, behavioral, and emotional development in secondary school. *Child Development*, *85*(6), 2151–2168.

Whitaker, M., & Hoover-Dempsey, K. V. (2013). School influences on parents' role beliefs. *The Elementary School Journal*, *114*, 73–99. doi:10.1086/671061.

Williams, B., Brown, T., & Onsman, A. (2012). Exploratory factor analysis: A five-step guide for novices. *Australian Journal of Paramedicine*, *8*, 1–13.

Zumbo, B. D., Gadermann, A. M., & Zeisser, C. (2007). Ordinal versions of coefficients alpha and theta for Likert rating scales. *Journal of Modern Applied Statistical Methods*, *6*, 21–29.

Journal of Child & Family Studies is a copyright of Springer, 2016. All Rights Reserved.

Journal of Abnormal Psychology
2016, Vol. 125, No. 2, 233–247

© 2016 American Psychological Association
0021-843X/16/$12.00 http://dx.doi.org/10.1037/abn0000100

Progression of Impairment in Adolescents With Attention-Deficit/Hyperactivity Disorder Through the Transition Out of High School: Contributions of Parent Involvement and College Attendance

Andrea L. Howard and Noelle J. Strickland
Carleton University

Desiree W. Murray
Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill

Leanne Tamm
Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

James M. Swanson
University of California, Irvine

Stephen P. Hinshaw
University of California, Berkeley, and University of California, San Francisco

L. Eugene Arnold
Ohio State University

Brooke S. G. Molina
University of Pittsburgh

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Editor's Note. Steve S. Lee served as the Guest Editor for this article.–SHG

Andrea L. Howard and Noelle J. Strickland, Department of Psychology, Carleton University; Desiree W. Murray, Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill; Leanne Tamm, Department of Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio; James M. Swanson, Department of Pediatrics, University of California, Irvine; Stephen P. Hinshaw, Department of Psychology, University of California, Berkeley, and Department of Psychiatry, University of California, San Francisco; L. Eugene Arnold, Department of Psychiatry, Ohio State University; Brooke S. G. Molina, Departments of Psychiatry and Psychology, University of Pittsburgh.

The work reported was supported by cooperative agreement grants and contracts from NIMH and the National Institute on Drug Abuse (NIDA) to the following: University of California–Berkeley: U01MH50461, N01MH12009, N01DA-8-5550; Duke University: U01MH50477, N01MH12012, N01DA-8-5554; University of California, Irvine: U01MH50440, N01MH12011, N01DA-8-5551; Research Foundation for Mental Hygiene (New York State Psychiatric Institute/Columbia University): U01 MH50467, N01 MH12007, N01DA-8-5552; Long Island–Jewish Medical Center: U01 MH50453; New York University: N01MH 12004, N01DA-8-5549; University of Pittsburgh: U01 MH50467, N01MH 12010, N01DA-8-5553; McGill University N01MH12008, N01DA-8-5548. The opinions and assertions contained in this report are the private views of the authors and are not to be construed as official or as reflecting the views of the Department of Health and Human Services, the National Institutes of Health or the National Institute of Mental Health.

The Multimodal Treatment Study of Children with ADHD (MTA) was a National Institute of Mental Health (NIMH) cooperative agreement randomized clinical trial, continued under an NIMH contract as a follow-up study and finally under a National Institute on Drug Abuse (NIDA) contract. The following are the collaborators from NIMH: Benedetto Vitiello (Child & Adolescent Treatment and Preventive Interventions Research Branch), Joanne B. Severe (Clinical Trials Operations and Biostatistics Unit, Division of Services and Intervention Research), Peter S. Jensen (currently at REACH Institute and Mayo Clinic), L. Eugene Arnold (currently at Ohio State University), Kimberly Hoagwood (currently at Columbia); previous contributors from NIMH to the early phases: John Richters (currently at National Institute of Nursing Research); Donald Vereen (currently at NIDA). Principal investigators and coinvestigators from the sites are University of California, Berkeley/San Francisco: Stephen P. Hinshaw (Berkeley), Glen R. Elliott (San Francisco); Duke University Medical Center: Karen C. Wells, Jeffery N. Epstein (currently at Cincinnati Children's Hospital Medical Center), Desiree W. Murray (currently at Frank Porter Graham Child Development Institute); previous Duke contributors to early phases: C. Keith Conners (former PI); John March; University of California, Irvine: James Swanson, Timothy Wigal; previous contributor from UCLA to the early phases: Dennis P. Cantwell (deceased); New York University: Howard B. Abikoff; Montreal Children's Hospital/McGill University: Lily Hechtman; New York State Psychiatric Institute/Columbia University/Mount Sinai Medical Center: Laurence L. Greenhill (Columbia), Jeffrey H. Newcorn (Mount Sinai School of Medicine). University of Pittsburgh: Brooke Molina, Betsy Hoza (currently at University of Vermont), William E. Pelham (PI for early phases, currently at Florida International University). The following are follow-up phase statistical collaborators: Robert D. Gibbons (University of Illinois, Chicago); Sue Marcus (Mt. Sinai College of Medicine); Kwan Hur (University of Illinois, Chicago). Original study statistical and design consultant is Helena C. Kraemer (Stanford University). Collaborator from the Office of Special Education Programs/U.S. Department of Education is Thomas Hanley. Collaborator from Office of Juvenile Justice and Delinquency Prevention/Department of Justice is Karen Stern.

Dr. Arnold has received research funding from Curemark, Forest, Lilly, Neuropharm, Novartis, Noven, Shire, and YoungLiving (as well as NIH and Autism Speaks) and has consulted with or been on advisory boards for Arbor, Gowlings, Neuropharm, Novartis, Noven, Organon, Otsuka, Pfizer, Roche, Seaside Therapeutics, Sigma Tau, Shire, and Tris Pharma and received travel support from Noven.

Correspondence concerning this article should be addressed to Andrea L. Howard, Department of Psychology, Carleton University, 1125 Colonel By Drive. Ottawa, ON., Canada. K1S 5B6. E-mail: andrea.howard@carleton.ca

Long-term, prospective follow-up studies of children diagnosed with attention-deficit/hyperactivity disorder (ADHD) show that symptoms tend to decline with age, but impairments in daily life functioning often persist into adulthood. We examined the developmental progression of impairments before and after the transition out of high school in relation to parent involvement during adolescence, parent support during adulthood, and college attendance, using 8 waves of data from the prospective 16-year follow-up of the Multimodal Treatment of ADHD (MTA) study. Participants were 548 proband children diagnosed with *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM–IV*; American Psychiatric Association, 2000) ADHD Combined Type and 258 age- and sex-matched comparison children (Local Normative Comparison Group; LNCG) randomly sampled from probands' schools. Impairment was assessed consistently by parent report from childhood through adulthood. Results showed that impairment worsens over time both before and after the transition to adulthood for those with ADHD histories, in contrast to non-ADHD peers, whose impairments remained stably low over time. However, impairment stabilized after leaving high school for young adults with ADHD histories who attended college. Involved parenting in adolescence was associated with less impairment overall. Attending college was associated with a stable post-high school trajectory of impairment regardless of parents' involvement during adolescence, but young adults with histories of involved parenting and who attended college were the least impaired overall.

General Scientific Summary

Adolescents with ADHD histories show increasingly impaired functioning as they age, but we found that the rate of change in impairments slowed after leaving high school. For adolescents who went on to college or university, impairments stabilized through young adulthood. Involved parenting in adolescence, combined with college attendance after high school, was associated with the lowest overall levels of impairment in those with and without ADHD histories.

Keywords: ADHD, impairment, trajectories, parenting, college

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

For many children diagnosed with attention-deficit/hyperactivity disorder (ADHD), symptoms (particularly of the hyperactive/impulsive type) decline with age (Fischer, Barkley, Fletcher, & Smallish, 1993; Hart, Lahey, Loeber, Applegate, & Frick, 1995; Hinshaw et al., 2012; Molina et al., 2009), but impairments in daily life functioning typically persist into adulthood. In one sample of children with ADHD, just 20% met *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM–IV*; American Psychiatric Association, 2000) *DSM–IV* criteria for ADHD symptoms by young adulthood, but over 60% had clinically significant impairment (Sibley, Pelham, Molina, Gnagy, Waxmonsky, et al., 2012). Similar findings from another longitudinal sample showed that 35% of young adults continued to meet diagnostic criteria, but 72% were functionally impaired (Biederman, Petty, Evans, Small, & Faraone, 2010). Lower rates of diagnoses despite high rates of impairment may reflect the developmental insensitivity of *DSM* symptom criteria for ADHD in adolescence and adulthood (Barkley, Fischer, Smallish, & Fletcher, 2002) and the relative importance of impairment in daily life functioning (e.g., Fedele, Hartung, Canu, & Wilkowski, 2010). Impairments are thus essential to understanding how ADHD progresses into adolescence and adulthood. In the present study, we evaluate trajectories of impairment before and after the transition out of high school and consider parenting and college attendance as factors that may shape the developmental course of impairment through young adulthood.

Children with ADHD display impairments in family functioning, peer relationships, and academic functioning that only modestly correlate with symptoms of inattention and hyperactivity (Burns, Servera, Bernad, Carrillo, & Geiser, 2014; Gathje, Lewandowski, & Gordon, 2008; Gordon et al., 2006). In treatment studies, improvements in specific domains of functional impairment co-occur with symptom improvements for less than half of children (Karpenko, Owens, Evangelista, & Dodds, 2009; Owens, Johannes, & Karpenko, 2009). However, impairments are typically the basis for referral to treatment (Pelham & Fabiano, 2008) and are key targets of treatment (Chronis et al., 2001). As children age, impairments become increasingly relevant due to their cost, education and employment implications, and potential for health consequences (e.g., Barkley et al., 2006; Kleinman, Durkin, Melkonian, & Markosyan, 2009). In early adolescence, increased academic workloads and greater demands for independent and organized work probably account for increased ADHD-related difficulties in high school despite declining symptom levels (Kent et al., 2011; Langberg et al., 2011). Also during adolescence, peer relationships become more important and complex. Adolescents with childhood diagnoses of ADHD continue to experience elevated peer rejection compared with adolescents without ADHD (Bagwell, Molina, Pelham, & Hoza, 2001).

In general, the transition to adulthood spans several years and creates risk for previously well-functioning adolescents as they struggle with demands imposed by new contexts (Schulenberg, Sameroff, & Cicchetti, 2004b). The transition to adulthood is a phase of intensified vulnerability for adolescents with ADHD who leave behind familiar environments and institutional supports after finishing high school (Heiligenstein, Guenther, Levy, Savino, & Fulwiler, 1999). Increased expectations for autonomy and environments that lack structure may lead to worsening impairments. Indeed, young adults with ADHD histories have fewer close friends, poorer educational outcomes, and are more often fired

from their jobs compared to young adults without childhood ADHD (Barkley et al., 2006). Their performance on executive function tasks assessing inhibitory control and working memory is poorer (Murphy et al., 2001), and their rates of internalizing, externalizing, and substance use disorders are higher (Biederman et al., 2006). Two factors that may be relevant to the developmental course of impairment after high school are the ongoing presence of involved and supportive parents and college attendance.

Parent Involvement and Support

Parents' relationships with their children resonate across the life span. Higher quality parenting from childhood through the early 20s (e.g., greater warmth and closeness) predicts competent and adaptive social, academic, and behavioral functioning during the transition to adulthood and beyond (Masten et al., 2004). For children with ADHD, positive, authoritative parenting in early childhood protects against future conduct problems (Chronis et al., 2007). Authoritative parenting and parental warmth also predict greater peer acceptance and less rejection (Hinshaw, Zupan, Simmel, Nigg, & Melnick, 1997; Hurt, Hoza, & Pelham, 2007). In one school-based sample, greater parental warmth buffered the adverse effect of inattentive symptoms on school social impairment (Kawabata, Tseng, & Gau, 2012). Over time, children with ADHD whose mothers possessed stronger parenting skills showed less academic and behavioral impairment by high school (Latimer et al., 2003). Positive parenting has also been shown to buffer the effect of ADHD symptom severity on task perseverance (Thomassin & Suveg, 2012; but see also Schroeder & Kelley, 2009). However, the link between positive parenting and improved child functioning is weaker for children with more severe ADHD symptoms (Healey, Flory, Miller, & Halperin, 2011). More severe ADHD symptoms are associated with negative parenting (e.g., inconsistent discipline, conflict), which in turn predicts poorer social skills (Kaiser, McBurnett, & Pfiffner, 2011). Reductions in negative and ineffective parenting practices during treatment predicts improvements in social skills and disruptive behavior (Hinshaw et al., 2000).

Involved and supportive parents continue to reinforce positive outcomes as adolescents make the transition to adulthood (Masten et al., 2004). Warm, supportive, and involved parenting predicts greater school engagement through high school and, in turn, more years of postsecondary education (Hill & Wang, 2015). For college students with ADHD, parent support is also associated with lower levels of depression (Meinzer, Hill, Pettit, & Nichols-Lopez, 2014). Young adults with supportive parents clearly experience more positive outcomes and are likely less impaired, but do they become less impaired over time as they transition out of high school, and do the benefits of supportive parenting differ for those who do and do not attend college? Parent support during the transition to adulthood (e.g., consultation on important decisions, guidance for complex problem solving, and support in coping with significant stressors) may be associated with progressive improvements in impaired functioning over time, but to our knowledge this question has not yet been tested.

College Attendance

Children with ADHD are less likely than their non-ADHD peers to enroll in college (Barkley et al., 2006; Kuriyan et al., 2013). Yet, increasing numbers of college students are presenting with ADHD, with an estimated 2%–8% of students on campus self-reporting clinically significant symptoms (DuPaul, Weyandt, O'Dell, & Varejao, 2009). It is unlikely that these students are a uniformly high-performing group who overcame their ADHD-related deficits. Indeed, inattentive symptoms are associated with poorer GPAs at the end of students' first year of college (Frazier, Youngstrom, Glutting, & Watkins, 2007). Compared with non-ADHD peers, college students with ADHD have lower high school GPAs, earn lower GPAs in college, have more academic concerns, and withdraw from more courses, despite similar hours spent studying (Advokat, Lane, & Luo, 2011; Blase et al., 2009). College students with ADHD display more social skills deficits (Shaw-Zirt, Popali-Lehane, Chaplin, & Bergman, 2005) and aggressive behavior (Richards, Deffenbacher, & Rosen, 2002; Theriault & Holmberg, 2001). They are also less likely to complete their degrees than peers without ADHD (Barkley, Murphy, & Fischer, 2008; Wolf, 2001). Thus, studies of college students with ADHD clearly demonstrate impairment, but whether this impairment has continued or worsened from childhood is unclear. Prospective longitudinal study of impairment following adolescents beyond the transition out of high school is needed to directly answer this question. For college students with ADHD histories, poorer executive function and difficulties with delaying reward at a time when self-regulation is still maturing creates a "double deficit" (Fleming & McMahon, 2012), and research is needed to determine whether involved and supportive parenting can help ease this transition. To our knowledge, these questions have yet to be tested.

The Current Study

In this study, we asked four questions about the developmental progression of impairment in adolescents with ADHD histories (MTA probands), compared with peers without ADHD (Local Normative Comparison Group; LNCG), before and after the transition out of high school:

1. Do impairments tend to increase, decrease, or remain stable as adolescents leave high school? Leaving behind familiar environments and supports, we anticipate impairment will increase after high school.

2. Are parent involvement and support, before and after the transition out of high school, related to less impairment and stable or declining rates of change in impairment? For adolescents whose parents are involved in their daily activities and who continue to provide support after high school, levels of impairment may be lower and impairments over time may be more stable. Alternatively, less-impaired adolescents may invite and reinforce parents' efforts at being involved in their daily lives (exemplifying a kind of selection bias).

3. Do trajectories of impairment after high school differ for adolescents who do and do not attend college? Adolescents who go on to college are probably already less impaired than their non college-attending peers, but college is challenging, with heavy academic demands and expectations for independence that may lead to worsening impairments after high school.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

4. Do parent involvement and support influence impairment and changes in impairment differently for college-attending compared with other young adults? A foundation of involved parenting followed by continued support in adulthood is likely to be advantageous for students, given the challenges of the college context, but young adults in noncollege settings face their own set of challenges after leaving high school and may also benefit from a history of involved parenting and continued supportive relationships with parents.

Method

Participants were the 579 children initially recruited into the Multimodal Treatment of ADHD (MTA) Study when they were aged 7 to 9.9 ($M = 8.5$, $SD = 0.80$) and diagnosed with *DSM–IV* ADHD Combined Type. At each of six sites, between 95 and 98 children were randomly assigned to one of four treatment groups: multicomponent behavioral treatment (Beh), systematic medication management (MedMgt), the combination of the behavioral and medication treatments (Comb), or referral to usual community care (CC). Children with comorbid diagnoses participated, and exclusion criteria were limited to conditions requiring study-incompatible treatments (e.g., psychosis, neuroleptic mediation), inability to participate (e.g., hospitalization, IQ below 80), cross-arm contamination (children in the same classroom or household), and family-related risks and threats to full participation (e.g., history of abuse, parent stimulant abuse, non-English-speaking primary caregiver). Recruitment strategy, detailed exclusion criteria, diagnostic procedures, treatment, and sample demographic characteristics appear in other reports (Arnold et al., 1997; MTA Cooperative Group, 1999).

Participant assessments took place at baseline prior to treatment randomization, at 3 months, 9 months, and the conclusion of the 14-month treatment phase, and again at 2, 3, 6, 8, 10, 12, 14, and 16 years after treatment randomization. A Local Normative Comparison Group (LNCG) of $n = 289$ children was recruited at the 2-year assessment, randomly sampled from the same schools and grades as MTA probands, matched for age and sex. LNCG children's entry and exclusion criteria were the same as for probands except they were not required to have ADHD. They were followed from the 2- through 16-year assessments. From the original sample, 95% of the MTA probands contributed one or more data points between the 2- and 16-year assessments and were retained in our analyses. All LNCG participants contributed data, but 31 children who were diagnosed with ADHD at study entry were excluded from analyses. The final sample size was $n = 806$ ($n = 548$ MTA, $n = 258$ LNCG).

For the present study, we drew on participant assessments from the 2-year (M age = 10.4, range = 8.2 to 13.9) through 16-year (M age = 25.0, range = 21.7 to 28.6) follow-up waves of assessment. Participant retention across waves was high. In the present sample, 39% of MTA probands had complete data across all waves ($n = 215/548$), and 39% were missing data on three or fewer waves ($n = 212/548$). The remaining 22% were missing data on half or more of the waves. Fifty-nine percent of LNCG had complete data across all waves ($n = 152/258$), and 32% were missing data on three or fewer waves ($n = 83/258$). The remaining 9% were missing data on half or more of the waves. Analyses for the current study accommodated missing data using multiple imputation. This strategy is appropriate when the pattern of missingness in the data is unrelated to the dependent variable after controlling for relevant measured variables (the *missing at random* (MAR) mechanism; see Enders, 2010; Schafer & Graham, 2002).

Cases with complete and incomplete data did not differ on impairment after controlling for differences between MTA probands and LNCG, $F = 0.04$, $p = .85$. We also performed a series of comparisons between cases with complete versus incomplete data and found that MTA probands with complete data differed from probands with incomplete data on just 6 of 23 baseline variables (participants with incomplete data were more often male, minority, had lower parent income, younger mothers, and had poorer physical health). LNCG with complete data differed from LNCG with incomplete data on 5 of 22 baseline variables (participants with incomplete data were more often male, had lower parent income, younger mothers, and had families who were divorced and who received social assistance). Participants with complete data were no different from participants with incomplete data on the majority of baseline sociodemographic and adversity variables tested (e.g., age, parent job loss, child health, school absences, and repeated grades). Thus, we are confident that our data meet criteria for missingness at random (i.e., point estimates and standard errors of parameters in our analyses are not likely biased by attrition). All analyses were based on 100 imputed data sets generated in SAS PROC MI. Data were imputed for all assessments simultaneously, and imputed values were informed by auxiliary variables that were not part of our analysis but that were likely to inform any pattern of missingness in impairment (e.g., mothers' ages).

Measures

Transition out of high school and trajectory coding strategy. The timing of each participant's transition out of high school was not directly recorded as part of the MTA assessments. For participants with complete data, we designated the first wave of assessment out of high school as the first wave at which they had completed 12th grade and reported earning a high school diploma or GED. For participants with incomplete data, we applied the above criteria and also verified the wave closest to the transition out of high school by using the number of months they reported being out of high school. The *post-transition trajectory* was coded 0 at the first wave out of high school, which corresponded to the 8-year assessment for 13% of participants, the 10-year assessment for 67% of participants, the 12-year assessment for 18% of participants, and the 14-year assessment for 2% of participants. Subsequent waves were coded by adding the number of years since the first wave out of high school (e.g., 2, 4, 6, for a participant whose first wave out of high school was at the 10-year assessment). The *pre-transition trajectory* was coded by subtracting the number of years prior to the first wave out of high school (e.g., −8, −7, −4, −2, for a participant whose first wave out of high school was at the 10-year assessment). Some participants had no evidence of high school completion based on the above indices because they did not complete MTA study assessments past adolescence; thus, they contributed impairment information only to the pre-transition trajectory. There were 63 participants who dropped out of school ($n = 56/548$

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

MTA probands, 10.2%; n = 7/258 LNCG, 2.7%). For these participants, the "first wave out of high school" was assigned to the wave at which they were between 18 and 19 years old. We also applied this coding strategy to 10 participants who contributed impairment ratings at the 2-year assessment only.

Impairment. Impairment was assessed by parent report using two measures. For participants under age 18, parents completed the Columbia Impairment Rating Scale (CIS; Bird et al., 1993), administered at the 2- through 10-year assessments. For participants aged 18 and older, parents completed the Impairment Rating Scale (IRS; Fabiano et al., 2006), administered at the 8- through 16-year assessments. In childhood, ratings were obtained from the child's primary caregiver. In adulthood, ratings were obtained from the parent or guardian/collateral reporter with the closest parent-like relationship to the target participant. Mothers provided 88% of all child and 85% of all adult impairment ratings; fathers provided 7% of all child and 10% of all adult impairment ratings. The remaining 5% of ratings were provided by grandparents, stepparents, foster parents, and other family members (e.g., aunts, uncles).

Our goal was to combine responses from the CIS and IRS to create a longitudinal measure that tracked participants' general impairment from late childhood through young adulthood. Although several CIS items overlap with IRS items, both scales contain many unique items assessing age-specific functioning (e.g., behavior problems on the CIS; problems affecting work on the IRS). Thus, it is not appropriate to treat IRS-rated impairment after age 18 as a continuation of CIS-rated impairment in childhood and adolescence (i.e., we cannot assume or test longitudinal *measurement equivalence* across these scales; see Horn & McArdle, 1992). We used a technique for pooled or integrative data analysis to create a longitudinal measure of impairment (see Curran et al., 2008; Hussong, Curran, & Bauer, 2013), as follows:

Feasibility. We first examined the content of the CIS and IRS to determine whether the scales contained *common items*. Common items are identical or highly similar in content and function as anchors between disparate scales to link item responses to a common metric over all ages and waves of assessment (described in the item response theory literature as *scale aligning* and *equating*; see Holland & Dorans, 2006). We matched four IRS items to CIS counterparts with highly similar content. For example, the IRS item assessing problems in relationships with other people his or her own age corresponded to the CIS item assessing problems getting along with kids his or her own age. Other common items assessed relationships/getting along with parents and siblings, and academic difficulties. The remaining items were unique to each scale. These included CIS items about behavior problems, activities and fun, and getting along with nonparent adults, and IRS items about problems affecting work, self-esteem, romantic relationships, and overall impairment severity.

Selecting an item set. We reviewed and narrowed the pool of items across both scales to those that could be used to define a unidimensional impairment construct. Our final item set contained 12 items, four of which were common to both scales. We *harmonized* the response scales of the IRS and CIS to be logically equivalent (see Hussong et al., 2013): Responses on the CIS ranged from 0 (*no problem*) to 4 (*a very bad problem*), whereas responses on the IRS ranged from 0 (*no problem*) to 6 (*extreme problem*). Item endorsement at the most extreme categories of the IRS was sparse (across all IRS items, between 2.6% and 7.4% of responses were in category 5; between 1.4% and 4.9% of responses were in category 6), so we combined responses at this level with responses in category 4 to create a 5-point response scale for IRS items that corresponded to the 5-point scale used on the CIS.

Developing a measurement model. We developed a formal factor analytic measurement model for the purpose of generating factor scores of impairment that would share a common metric over all ages and waves of assessment (i.e., a *commensurate* measure; see Hussong et al., 2013). We tested our measurement model on a cross-sectional *calibration sample* of our data, created by retaining impairment items from a single, randomly selected wave of assessment for each participant in the study. Our measurement model regressed common and unique items from the CIS and IRS on a single latent variable representing impairment. To improve the precision of our factor scores, we conditioned the impairment factor on participants' age, ADHD versus LNCG group, and sex. Final parameter estimates from the conditional model were applied to a model using the full longitudinal sample. We extracted final factor scores from this model for use in our multilevel analyses. Scores ranged from −2.27 to 2.33 (M = −0.43, SD = 1.08).

Reliability, validity, and cross-validation. The average reliability of the impairment factor scores was r' = .86 (see Embretson & Reise, 2000, p. 18), and the test–retest correlation between scores at adjacent waves of assessment was r = .72. Correlations between impairment scores and other study measures, described below, were in expected directions (see Table 1) and support the validity of the measure. We replicated our measurement model with a second, nonoverlapping cross-validation sample of our data, created by retaining data from a single, randomly selected wave of assessment for each participant from among the remaining waves not included in our calibration sample. Factor scores from the models based on the calibration and cross-validation samples were correlated above r = .99.

Parent involvement and support. Parent involvement was assessed in adolescence, and parent support was assessed in young adulthood. For participants under age 18, parents completed the Alabama Parenting Questionnaire (Frick, 1991) at the 2-year and 6- through 10-year assessments. The 10-item *involvement* subscale used in this study assessed parents' involvement with and conversations about their child's daily activities, homework, and friends, as well as parents' participation in school and extracurricular activities. Items were rated on a 5-point scale ranging from 1 (*never*) to 5 (*always*). Scores across assessments on the involvement subscale were averaged to create a measure of mean parent involvement in adolescence.

Participants aged 18 and over completed the Network of Relationships Inventory (NRI; Furman & Buhrmester, 2009) at the 12- through 16-year assessments. Subscales assessed young adults' reliance on their mothers/fathers for support with personal problems, advice, sympathy (support subscale; three items) and for help working through challenges and completing tasks (instrumental aid subscale; three items). These items formed a six-item measure of parent support. Participants separately rated their mothers and fathers on a scale ranging from 1 (*little or none*) to 5 (*most*). Ratings of mothers and fathers were averaged to create a parent composite, and composite scores across assessments were

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 1
Means, Standard Deviations, and Correlations Between Study Variables

Variable	MTA probands		LNCG		Lower triangle = MTA probands; upper triangle = LNCG																
	M	*SD*	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Impairment[a]	−0.01	0.94	−1.20	0.89	1	−.14*	−.08*	−.06*	−.05*	—	−.05*	−.04	−.07*	.05*	−.11*	−.02	−.03	.03	.19*	.24*	.28*
2. Parent involve (adolescent)	3.58	0.46	3.78	0.47	−.12*	1	.20*	.00	.10*	—	.09*	−.03	.06*	.08*	.03	−.05*	.02	.03	−.02	.00	−.08*
3. Parent support (adult)	2.95	0.84	2.94	0.83	−.06*	.15*	1	.01	−.02	—	.21*	.07*	.10*	.05*	.03	−.01	−.03	.01	−.06*	−.03	−.08*
4. Age[a]	17.10	5.00	16.91	4.91	.15*	.01	−.00	1	.02	—	−.00	.01	−.02	−.04*	−.07*	−.01	.27*	−.04	.01	−.06*	.02
5. Family income	4.93	2.49	5.86	2.61	.03	.06*	−.05*	.04	1	—	−.06*	−.31*	−.24*	.13*	.37*	−.24*	.06	−.07	−.04	−.08*	−.03
6. Special education	279.23	398.72	—	—	.13*	.06*	.03	−.01	−.05*	1	—	—	—	—	—	—	—	—	—	—	—
7. Female (%)	19.89	—	19.77	—	−.03	.07*	.11*	.03	.08*	−.06*	1	−.01	.03	.04	.12*	−.02	.00	.00	−.07*	−.00	−.05
8. Black (%)	19.71	—	11.24	—	.05*	.02	.12*	−.03	−.22*	−.01	−.01	1	−.13*	−.12*	−.10*	.16*	−.05	.04	.01	.00	−.00
9. Hispanic (%)	6.93	—	13.18	—	−.01	−.13*	.02	−.00	−.16*	.01	−.05*	−.13*	1	−.13*	−.17*	.10*	−.12*	−.00	−.04	.03	−.03
10. Other (%)	12.04	—	11.24	—	.03	.00	.06*	−.03	−.08*	−.01	−.04*	−.17*	−.09*	1	.04	−.06*	.02	.01	.04	.02	.06*
11. Attended college (%)	42.15	—	67.87	—	−.07*	.15*	−.02	.07*	.27*	−.17*	.11*	−.07*	−.07*	.02	1	−.27*	.18*	−.14*	−.01	−.03	−.02
12. Dropped out (%)	10.22	—	2.71	—	.09*	−.14*	−.00	.02	−.17*	.01	−.04*	−.04*	.05*	.00	−.32*	1	−.06	.06	.00	−.02	.03
13. Living independently[a] (%)	35.78	—	43.81	—	−.09*	−.01	−.06	.20*	.09*	−.12*	.05	−.04	−.05	−.03	.05	−.08*	1	−.11*	.08	.09*	−.08
14. Other living[a] (%)	2.64	—	1.55	—	.04	−.01	.01	.01	.05	−.01	−.02	−.01	−.02	−.01	−.05	.05	−.12*	1	−.01	−.03	−.02
15. ADHD dx[a] (%)	37.80	—	2.00	—	.30*	−.05*	−.04	−.23*	−.01	.05*	−.02	.06*	.00	−.01	−.06*	.02	−.08*	−.01	1	.13*	.16*
16. Internalizing dx[a] (%)	18.85	—	7.83	—	.11*	.02	.01	−.26*	−.05*	.01	.07*	.04*	.01	.02	−.04*	.01	.02	.04	.19*	1	.16*
17. Externalizing dx[a] (%)	31.37	—	4.58	—	.31*	−.12*	−.02	−.25*	−.04*	.06*	−.05*	.04	.03	.01	−.08*	.08*	−.10*	−.02	.30*	.26*	1

Note. Impairment factor scores are on a conditionally standardized scale, with values ranging from −2.27 to 2.33. On average, impairment scores for probands were 1.2 *SD*s higher than for Local Normative Comparison Group (LNCG). Parent involvement ranged from 1 to 5. A score of 3 = *sometimes* and 4 = *often*. Parent support ranged from 1 to 5. A score of 3 = *very much* and 4 = *extremely much*. Family income at baseline was reported on a 9-point scale. Each point represented an interval of $10,000 in annual income. A score of 4 = $30,000–$40,000 per year; a score of 5 = $40,000–$50,000 per year.

[a] Impairment, age, living arrangements, and diagnoses (ADHD, internalizing, externalizing) varied from wave to wave. Summary statistics in this table pool over all waves of assessment. dx = diagnosis.

* $p < .05$.

averaged to create a measure of mean parent support in young adulthood. Participants tended to rate their parents similarly, and discrepancies between participants' perceptions of support from mothers and fathers were unrelated to impairment.

College attendance. Participants were contrast-coded as having attended college (−.5 = did not attend; .5 = attended college) if at any time from the first wave out of high school and through later waves they indicated current full-time enrollment in a college, university, community college, or postcollege graduate program, or if they reported completing at least their first year of college/university/community college. Of the participants who contributed data on college attendance (n = 752), 42.1% of MTA probands attended (n = 212 of 503) compared with 67.9% of LNCG (n = 169 of 249). Two-thirds of college-attending participants were enrolled at their first assessment out of high school, and an additional 26% were enrolled by their second assessment out of high school. Thus, the majority of participants who attended college were traditional-aged students who enrolled immediately or almost immediately after completing high school.

Covariates. Analyses modeled differences between participants with and without childhood ADHD histories (0 = ADHD, 1 = LNCG), biological sex (0 = male, 1 = female), ethnicity (three dummy-coded variables to assess differences between Black, Hispanic, and Other ethnicity compared with White), baseline family income (1 = less than $10,000 to 9 = $75,000 or more), participants' ages within each wave (assessments were not equally spaced for all participants and there was age variability at each wave), whether participants completed high school or dropped out (0 = completed high school, 1 = dropped out), and participants' post-transition living arrangements (two dummy-coded variables to assess living independently and other living arrangements compared with living in a family or nonfamily member's household). Ongoing ADHD diagnostic status and internalizing and externalizing comorbidity were also included as covariates, based on responses collected from the *Diagnostic Interview Schedule for Children* (DISC-IV; parent and youth versions; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). ADHD diagnostic status was treated as a time-varying covariate: participants were coded at each wave of assessment based on whether they met criteria for an ADHD diagnosis of any subtype from parent- or self-report criteria. Internalizing and externalizing diagnoses at each wave were condensed into codes indicating whether a diagnosis was present at one or more assessments during the pre-transition phase (adolescence), during the post-transition phase (young adulthood), or during both phases. Participants had an internalizing diagnosis if they met criteria for major depression, dysthymia, mania, panic disorder, generalized anxiety disorder, separation anxiety disorder, social phobia, agoraphobia, or obsessive–compulsive disorder. Participants had an externalizing diagnosis if they met criteria for conduct disorder or oppositional defiant disorder. We used weighted effects coding in our analyses to model the effects of having each type of diagnosis during pre-transition, post-transition, or both phases (see Cohen, Cohen, West, & Aiken, 2003, pp. 328–332).

In a supplementary analysis of the MTA probands only, we also included as covariates original randomized treatment (contrast coded; see Jensen et al., 2007; Swanson et al., 2001) and use of special education services during school years (summing over all school years, total number of occasions participants received special education classes or programming, occupational/physical therapy, speech-language therapy, or participated in a special school for children with ADHD or LD).

Analytic Strategy

We tested a two-level multilevel growth model for impairment with SAS PROC MIXED. We used a piecewise linear function (Flora, 2008) to separately model rates of change in impairment through adolescence (Piece 1; the pre-transition trajectory) and after the transition out of high school (Piece 2; the post-transition trajectory). These trajectories and their interaction with ADHD versus LNCG group tested our first question regarding rates of change before and after the transition out of high school for those with and without ADHD histories. Main effects of parenting and interactions between parenting measures and each of the pre- and post-transition trajectories tested our second question regarding the influence of parent involvement and support on severity and rates of change in impairment. The main effect of college attendance and the interaction with the post-transition trajectory tested our third question regarding the relation between college attendance and impairment after high school. Interactions between parenting and college attendance tested our fourth question regarding differential association of parenting with impairment in college-versus non–college-attending young adults. ADHD versus LNCG differences were examined for tests corresponding to each research question. We performed a second, supplementary multilevel analysis of impairment in MTA probands only, adding randomized treatment assignment and receipt of special education services as covariates.

Results

Table 1 shows means, standard deviations, and correlations between study variables. Impairment scores, derived from the factor analytic measurement model, are on a conditionally standardized scale. A score of zero represents MTA probands' mean impairment at the first wave out of high school. In contrast, LNCG mean impairment was 1.2 *SD*s lower at the first wave out of high school (a score of −1.2). Mean levels of parent involvement in adolescence and parent support in young adulthood were similar for MTA probands and LNCG participants. However, 68% of the LNCG attended college full time after high school compared with 42% of MTA probands; similarly, fewer than 3% of LNCG dropped out before completing high school compared to 10% of MTA probands. Mean family income at the baseline assessment was approximately $10,000 higher for LNCG families compared to MTA proband families; however, the LNCG baseline assessment occurred 2 years after MTA probands' baseline assessment. During waves of assessment after the transition out of high school, MTA probands reported living independently 36% of the time compared with 44% for LNCG. MTA probands also received on average 279 occasions of special education services over the course of their years in school (SD = 398.72; Mdn = 76; range = 0 to 2268).

Pearson correlations between study measures in Table 1 were similar for MTA probands and LNCG: Impairment was negatively correlated with parent involvement and support; parent involvement in adolescence was positively correlated with attending col-

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

lege; family income was positively correlated with attending college and negatively correlated with dropping out. An internalizing diagnosis was associated with more impairment, and an externalizing diagnosis was associated with more impairment and less parent involvement. There were also some differences between ADHD and LNCG: Impairment in MTA probands was negatively correlated with living independently, whereas living arrangements were unrelated to impairment for LNCG. Attending college was positively associated with living independently (includes college housing) for LNCG but unrelated to living arrangements for MTA probands. Dropping out of school was associated with more impairment in MTA probands but was unrelated to impairment for LNCG. For LCNG only, an ADHD or other externalizing diagnosis was also negatively correlated with parent support in young adulthood.

Table 2 and Figure 1 show results of the multilevel model of the developmental progression of impairment from adolescence through the transition out of high school and into young adulthood. For MTA probands, levels of impairment increased through high school [pre-transition trajectory $B = 0.044$, 95% confidence interval (CI) = 0.034 to 0.054] and afterward, but at a slower rate (post-transition trajectory $B = 0.025$, 95% CI = 0.011 to 0.039). In contrast, impairment levels for LNCG participants were low and stable through high school (pre-transition trajectory $B = 0.044 - 0.048 = -0.004$) and declined afterward (post-transition trajectory $B = 0.026 - 0.053 = -0.028$). Following Barkley et al. (2002), we established a developmentally referenced criterion (DRC) for clinically significant impairment of +2 *SD* above the LNCG mean impairment score in each of the pre- and post-transition phases. Forty-two percent of MTA probands exceeded the pre-transition DRC at least once during adolescence, 52% exceeded the post-transition DRC at least once during young adulthood, and 27% exceeded both pre- and post-transition DRCs.

As shown in Table 2, parent involvement was associated with lower overall levels of impairment ($B = -0.133$, 95% CI = −0.243 to −0.016), but parent support was not ($B = -0.019$, 95% CI = −0.060 to 0.028). There was no main effect of college attendance on impairment, indicating that people who went on to college after high school had similar levels of impairment at the first wave out of high school compared to non college-attending peers ($B = -0.059$, $p = .286$). Figure 2 shows that college-attending young adults whose parents were more involved during adolescence showed the most dramatic improvements over time and were the least impaired overall as shown by the solid black lines for both ADHD and LNCG. However, this finding was significant only for the LNCG ($B = -0.568$, 95% CI = −0.925 to −0.212); it was weaker and nonsignificant for MTA probands ($B = -0.075$, 95% CI = −0.293 to 0.144).

For college-attending young adults with ADHD histories, impairment trajectories stabilized following the transition out of high school ($B = -0.032$, 95% CI = −0.053 to −0.010; see also Figure 2). This stabilizing trend was unrelated to parents' level of involvement during adolescence or to parents' level of support during young adulthood.[1] Indeed, pre-transition impairment trajectories were virtually identical for college- and noncollege-bound adolescents with ADHD histories who had less-involved parents (gray lines in Figure 2), and only after leaving high school did impairments stabilize for those who attended college.

Covariates linked to greater impairment levels were higher baseline family income ($B = 0.025$, $SE = 0.008$) and older age within wave ($B = 0.032$, $SE = 0.012$). An ADHD diagnosis at a given assessment was also associated with greater impairment at that wave ($B = 0.421$, $SE = 0.030$). Adolescents who met criteria for an internalizing diagnosis at least once before, but not after, the transition out of high school were slightly more impaired ($B = 0.092$, $SE = 0.026$). Those who met criteria for an internalizing or externalizing diagnosis at least once before and after the transition out of high school were the most impaired, especially those with persistent externalizing comorbidity ($B = 0.210$, $SE = 0.059$ and $B = 0.417$, $SE = 0.045$, for internalizing and externalizing, respectively). Meeting criteria for an externalizing diagnosis after, but not before, the transition out of high school also predicted greater impairment ($B = 0.209$, $SE = 0.081$).

Sex, ethnicity, dropping out before completing high school, and post-transition living arrangements were unrelated to impairment. In a supplementary analysis of MTA probands only, original randomized treatment assignment did not contribute to impairment. A small effect of use of special education services in school ($B = 0.00021$, $SE = 0.00006$, $p < .05$), indicated that participants who received more occasions of special education services through the end of high school were more impaired at their first assessment out of high school. Assuming that services were delivered at a rate of once per day, one year's worth of special education services (181 days; U.S. Department of Education, National Center for Education Statistics [NCES], 2013) corresponded to impairment levels that were .038 units—about 1/25 of a standard deviation—above average. Effects of other predictors and covariates corresponded to the findings from the full sample, except that age within wave was no longer associated with impairment, Black ethnicity was associated with greater impairment ($B = 0.162$, $SE = 0.062$), and internalizing and externalizing diagnoses were only associated with greater impairment if a diagnosis was present during both the pre- and post-transition phases.

Discussion

This study assessed the developmental progression of parent-rated impairment, for children with ADHD Combined Type histories compared with non-ADHD peers, from early adolescence through the transition out of high school and into young adulthood. We tested associations of parent involvement, support, and college attendance with changes in impairment before and after the transition out of high school, and whether parenting was differentially associated with change in impairment for young adults who did and did not attend college. There were three key findings: (a) On average, the impairments of adolescents with childhood ADHD increased through high school and after the transition out of high school, whereas impairments in LNCG adolescents remained low over time and declined after high school; (b) the post-transition trajectory of impairment stabilized for adolescents with ADHD histories who attended college; and (c) involved parenting in adolescence was negatively associated with impairments overall,

[1] Three-way interactions of Parent Involvement × College Attendance × Post-Transition Trajectory and Parent Support × College Attendance × Post-Transition Trajectory were not significant and were trimmed from the final analyses.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 2
Multilevel Model Results Predicting Parent-Rated Impairment Before and After the Transition Out of High School

Variable	*B*	*SE*
Intercept[a]	.026	.037
LNCG vs. ADHD[b]	−.743*	.062
Pre-transition trajectory (Piece 1)	.044*	.005
Post-transition trajectory (Piece 2)	.025*	.007
LNCG differences in impairment trajectories		
LNCG vs. ADHD × Piece 1	−.048*	.007
LNCG vs. ADHD × Piece 2	−.053*	.013
Mean parent involvement (adolescence)	−.130*	.058
Mean parent support (young adulthood)	−.019	.024
College attendance post-transition[c]	−.059	.055
Parenting and college differences in impairment trajectories		
Parent involvement, adolescence × Piece 1	.009	.007
Parent support, young adult × Piece 2	.003	.006
College attendance × Piece 2	−.032*	.011
Effects of parenting for college-attending young adults		
Parent involvement, adolescence × College	−.075	.111
Parent support, young adult × College	−.038	.047
LNCG differences in parenting and college effects		
Parent involvement, adolescence × LNCG vs. ADHD	.088	.091
College attendance × LNCG vs. ADHD	−.014	.088
Parent involvement, adolescence × College × LNCG vs. ADHD	−.568*	.182

Note. LNCG = Local Normative Comparison Group; ADHD = attention-deficit/hyperactivity disorder.
[a] Represents average impairment at the first wave out of high school for Multimodal Treatment of ADHD (MTA) probands. [b] MTA probands = 0, LNCG = 1. [c] Contrast coded: Did not attend college = −.5, Attended college = .5.
* $p < .05$.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

and especially for those who attended college. Overall, our findings reveal that ADHD-related impairments persist beyond the transition out of high school but are related to parenting and college attendance. Adolescents (with and without ADHD histories) who grew up with involved parents, attended college, and maintained supportive relationships with parents in young adulthood had the lowest levels of impairment overall and over time.

Impairments Continue to Increase After the Transition Out of High School

Previous studies show that children with ADHD continue to manifest impairments in a variety of domains through adolescence (Sibley, Pelham, Molina, Gnagy, Waschbusch, et al., 2012) and into young adulthood (Barkley et al., 2006), and that impairments in most domains remain problematic despite symptom reductions (O'Connor, Garner, Peugh, Simon, & Epstein, 2014). This study is the first to articulate a progression of impairment over time, from early adolescence through young adulthood. On average, adolescents with ADHD histories became slightly more impaired through high school, and impairments continued to increase but at a slower rate after the transition out of high school. In contrast, their non-ADHD peers maintained low levels of impairment through adolescence that declined further after the transition out of high school. Rates of clinically significant impairment based on developmentally referenced criteria are consistent with longitudinal trends, suggesting that impairments continue and potentially worsen for a substantial number of young people as they make the transition out of high school. These findings are concerning given the high personal and economic costs for young adults with ADHD and their families, such as failure to complete college and subsequent lower earning potential, and early pregnancy (Barkley et al., 2006; Flory, Molina, Pelham, Gnagy, & Smith, 2006).

However, not all adolescents with ADHD follow a worsening trajectory. Our finding of modest average increases over time summarizes a great deal of individual variability. Studies of symptom trajectories of children with ADHD show that about 25% to 30% exhibit a worsening pattern over time (Howard et al., 2015; Malone, Van Eck, Flory, & Lamis, 2010; Pingault et al., 2014; Swanson et al., 2007). In the present study, 27% of MTA probands persisted with clinically significant impairment before and after the transition out of high school, and impairments were most severe for the minority of adolescents with persistent externalizing comorbidity. Thus, although some adolescents with ADHD histories experience worsening impairments over time, others' impairments likely stabilize or become less severe. Our remaining research questions addressed whether college attendance and parent involvement and support were associated with such stability or improvement.

College Students' Impairment Trajectory Stabilizes After the Transition Out of High School

Impairments in college-attending young adults with ADHD histories stabilized after the transition out of high school. There were no differences in impairment at the first wave out of high school between college-bound adolescents and their noncollege peers, suggesting that this stabilizing pattern was not exclusively a selection effect of less-impaired people going to college. It is important to note that the trajectory of impairment for this group

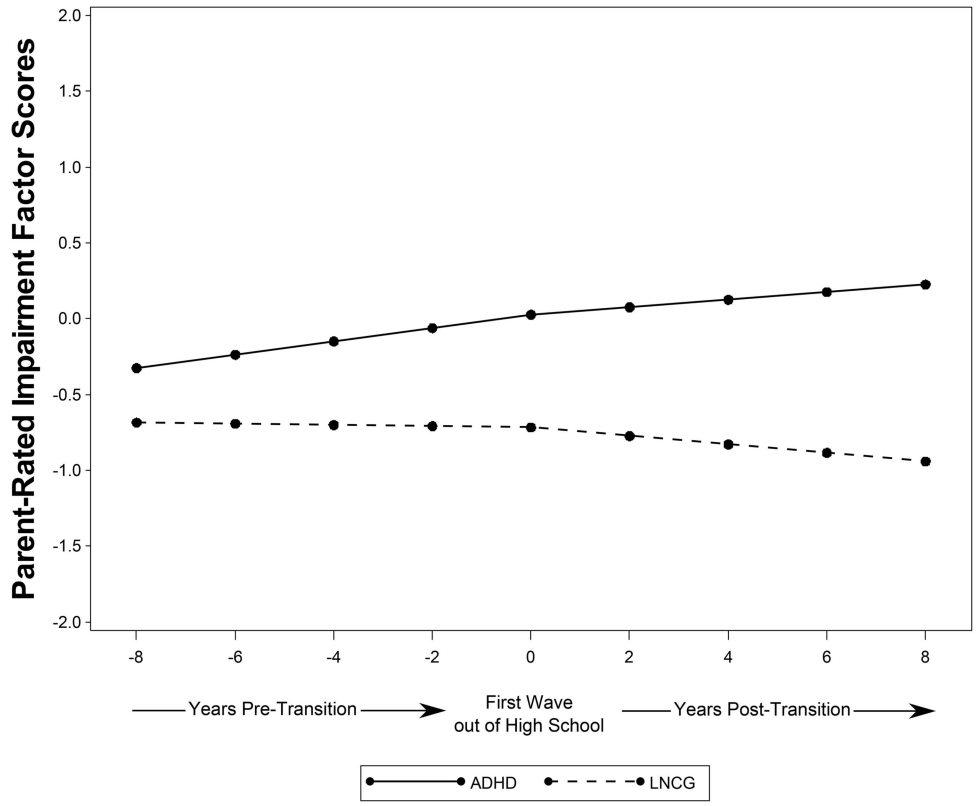


Figure 1. Model-implied trajectories of parent-rated impairment through the transition out of high school for multimodal treatment of attention-deficit/hyperactivity disorder (ADHD; MTA) probands (ADHD) and non-ADHD age- and sex-matched peers (Local Normative Comparison Group). A value of 0 on the *x*-axis represents for each person their first wave of assessment out of high school.

changed course at the first wave out of high school, suggesting that changes occurring around the time of college enrollment contributed to diminished impairment, independent of parent involvement and support. Despite greater impairment relative to non-ADHD peers, it is encouraging that impairments remained stable. The transition out of high school and into college can be an opportunity for struggling adolescents to disengage from the constraints and lack of flexibility typical of high school (Schulenberg, Bryant, & O'Malley, 2004a).

However, although college students with ADHD histories may show some success in managing their newfound independence, their impairments are not improving. Indeed, 47% of young adults with ADHD histories who attended college exceeded the post-transition DRC threshold for clinically significant impairment at least once in young adulthood. Poorer executive function and low self-regulation in a context where demands for cognitive skills are high places those with ADHD histories at a disadvantage (Dvorsky & Langberg, 2014; Fleming & McMahon, 2012). College is a unique developmental context in which students experience multiple, simultaneous transitions and assume new levels of independence. Students form new social groups and leave others behind; they often move away from home; they encounter a broader range of academic choices and opportunities, but also they navigate a new set of demands to independently manage their academic careers. Some students with ADHD may thrive in an environment where they are free to select their own classes and set their own daily schedules. For others, however, college lacks the benefits of day-to-day involvement from parents and teachers who regularly check students' progress and remind them about deadlines (Eccles, 2004; Maggs, 1997). The concurrent freedoms and responsibilities of college life may be overwhelming in the absence of a guiding structure.

Parent Involvement Is Linked to Reduced Impairments

Greater parent involvement was associated with less impairment in adolescence, regardless of ADHD history. Early involved parenting was associated with a reduction in overall impairment of about a third of a standard deviation for adolescents with ADHD histories compared to their peers whose parents were less involved. Less-impaired adolescents may invite and reinforce parents' efforts at involvement in their daily lives, but impairments only began to improve after the transition out of high school At this time, impairments slowed for college-bound adolescents with any level of parent involvement, and young adults with more involved parents and without ADHD histories showed the strongest improvements. Parent support during young adulthood was not significantly associated with reduced impairment, and effects of par-

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

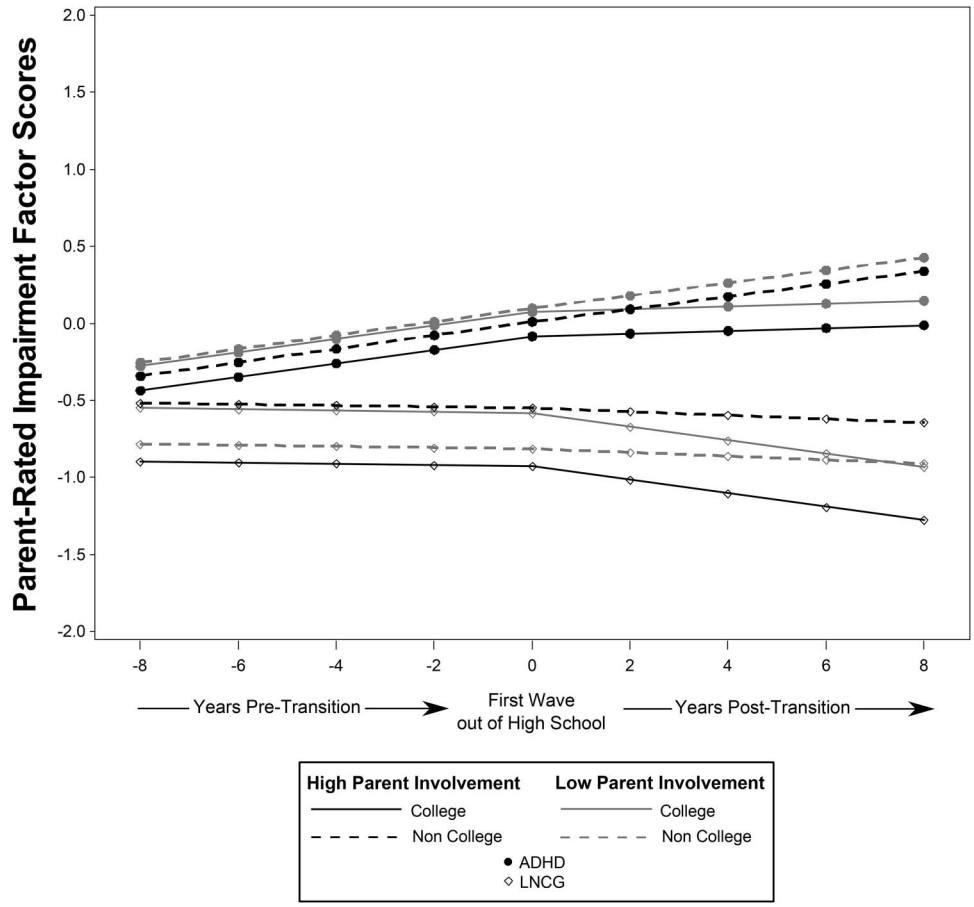


Figure 2. Model-implied trajectories of parent-rated impairment through the transition out of high school for college-versus non college-attending young adults (attention-deficit/hyperactivity disorder [ADHD] and Local Normative Comparison Group [LNCG]) with higher versus lower parent involvement ($M \pm 1$ *SD*) in adolescence.

ent support were similar for those who did and did not attend college.

Involved parenting in adolescence may contribute more strongly to reduced impairment because it sets the stage for autonomy and self-regulation in young adulthood. For typically developing school-age children and adolescents, support and encouragement from parents facilitates development of intrinsic control over behavior and motivation to achieve (Deci & Ryan, 2008). However, parent-control behaviors such as homework surveillance predict poorer classroom behavior and lower GPAs in school-age children, whereas autonomy-supportive parenting is correlated with achievement and higher GPAs (Ginsburg & Bronstein, 1993). Parent support after the transition out of high school, however, was not related to impairment in the present study. Our measure may have aggregated adaptive kinds of support such as advice, sympathy, and guidance to adult children to independently solve their own problems with maladaptive kinds of support such as hovering and intervening to solve problems on behalf of their children (see Cullaty, 2011). Overinvolvement from warm parents has only modest benefits for young adults, but overinvolvement paired with low warmth predicts lower self-worth and greater involvement in risk behaviors (Nelson, Padilla-Walker, & Nielson, 2015).

Striking an appropriate balance of warmth, encouragement, control, and autonomy support may be especially challenging for parents of adolescents with ADHD histories, whose relationships are characterized by greater conflict compared with families of non-ADHD peers (Barkley et al., 1991; Walther et al., 2012). Preliminary results of a treatment program emphasizing parent–adolescent collaboration that increased parents' daily involvement in adolescents' academic routines had secondary benefits of improved parent–teen communication and increased autonomy granting (Sibley et al., 2014). Adolescents who are raised in families that implement involved, authoritative parenting strategies may be better positioned to apply the self-regulation skills needed for success in college. Overall, levels of impairment in the present study were lowest for young adults with ADHD histories who attended college and who had more involved parents during adolescence.

Strengths and Limitations

We leveraged long-term follow-up data from a large, multisite study of children well-diagnosed with ADHD Combined Type and an age-matched normative comparison group. An important

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

strength of the MTA is that it was designed with broad generalizability in mind, with participants recruited from clinic and community settings (Arnold et al., 1997). However, children with ADHD inattentive subtype were not recruited into the study. Even though some shifted to this subtype with age (Molina et al., 2009), caution is warranted when generalizing the present findings to the broader population of children with ADHD. In the interest of generalizability, children were not excluded for comorbid diagnoses unless they required treatment in conflict with study treatment (MTA Cooperative Group, 1999).

A strength and a limitation of the present study was our parent-rated measure of impairment from late childhood through the late 20s. We constructed an integrated longitudinal measure of impairment from distinct adolescent and adult measures. This novel strategy allowed us to model long-term trajectories of impairment, but our measure combines information from two existing scales (the CIS and IRS), therefore, our findings are not directly comparable to the adult impairment findings of others who used the IRS alone (Sibley, Pelham, Molina, Gnagy, Waxmonsky, et al., 2012). Parents' reports of impairment in adulthood may also be less accurate for informants who do not live with their adult children and lack opportunities to directly observe their behavior. At the same time, young adults tend to underreport symptoms and impairment (Sibley, Pelham, Molina, Gnagy, Waxmonsky, et al., 2012), and self-rated symptoms are poorer predictors of impairment in multiple domains compared with parent ratings (Barkley et al., 2002). Therefore, we believe that our findings based on parent ratings more closely resemble the true progression of impairment. However, parent informants were primarily mothers mixed with father- and other-guardian informants, and there may be systematic differences between types of parent informants. A related concern is that we used parent-rated involvement during adolescence to predict parent-rated impairment. This raises the possibility of shared method variance: More involved parents may have a psychological investment in viewing their son or daughter as less impaired, justifying the time and energy spent on involvement.

Our impairment measure broadly assessed relational, academic, behavioral, and some emotional difficulties, and we cannot draw conclusions about how specific aspects of impairment change over time. A report in preparation will address more specific outcomes, such as college completion, current income, emotional lability, police contact, and pregnancy by age 18. With respect to college students with ADHD histories, it is concerning that students are less likely to complete their degrees compared with peers without ADHD, even when ADHD symptoms desist (Barkley et al., 2006). In the present study, we examined impairment trajectories of full-time students, but college attendance may not be associated with impairment in the same way for part-time students, who are typically less immersed and engaged in the academic and social contexts of college that are geared toward traditional-aged, full-time students (Nelson Laird & Cruce, 2009). Understanding the social and academic impairments in the college context for full- and part-time students with ADHD histories and their impact on students' college completion will be an important area for future study.

We examined the impairment trajectories of students who attended colleges/universities (4 year) and community colleges (2 year) but not of students who attended vocational, technical, or trade schools. High school academic problems, achievement test scores, and disciplinary sanctions differentiate students who enroll in 4-year compared with 2-year and vocational/technical colleges (Kuriyan et al., 2013), but no studies have yet examined differences in post-high school outcomes for students attending different types of postsecondary institutions, and none have compared student and nonstudent outcomes. This is an important avenue for further study considering that the majority of young adults with ADHD histories are not in school (Barkley et al., 2006).

Implications

Overall, results of this study suggest that adolescents with ADHD Combined Type histories and involved parents maintain lower levels of impairment as they move toward the transition out of high school. Regular conversations between parents and their children about daily activities and friends, help with homework, and parent participation in children's school and extracurricular activities are all important features of involved parenting that may help to reduce impairments well beyond the period of such active involvement. However, the developmental course of impairment stabilizes for young adults with ADHD histories who go on to college after high school, regardless of the extent of their parents' involvement during adolescence. A successful transition out of high school and into adulthood is an important developmental goal, and gaining admission to college is one early achievement of the transition to adulthood. Results of this study show that it coincides with a period of stability in impairments.

References

Advokat, C., Lane, S. M., & Luo, C. (2011). College students with and without ADHD: Comparison of self-report of medication usage, study habits, and academic achievement. *Journal of Attention Disorders, 15,* 656–666. http://dx.doi.org/10.1177/1087054710371168

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

Arnold, L. E., Abikoff, H. B., Cantwell, D. P., Conners, C. K., Elliott, G., Greenhill, L. L., . . . Wells, K. C. (1997). National Institute of Mental Health Collaborative Multimodal Treatment Study of Children with ADHD (the MTA): Design challenges and choices. *Archives of General Psychiatry, 54,* 865–870. http://dx.doi.org/10.1001/archpsyc.1997.01830210113015

Bagwell, C. L., Molina, B. S. G., Pelham, W. E., Jr., & Hoza, B. (2001). Attention-deficit hyperactivity disorder and problems in peer relations: Predictions from childhood to adolescence. *Journal of the American Academy of Child & Adolescent Psychiatry, 40,* 1285–1292. http://dx.doi.org/10.1097/00004583-200111000-00008

Barkley, R. A., Fischer, M., Edelbrock, C., & Smallish, L. (1991). The adolescent outcome of hyperactive children diagnosed by research criteria—III. Mother-child interactions, family conflicts and maternal psychopathology. *Journal of Child Psychology and Psychiatry, 32,* 233–255. http://dx.doi.org/10.1111/j.1469-7610.1991.tb00304.x

Barkley, R. A., Fischer, M., Smallish, L., & Fletcher, K. (2002). The persistence of attention-deficit/hyperactivity disorder into young adulthood as a function of reporting source and definition of disorder. *Journal of Abnormal Psychology, 111,* 279–289. http://dx.doi.org/10.1037/0021-843X.111.2.279

Barkley, R. A., Fischer, M., Smallish, L., & Fletcher, K. (2006). Young adult outcome of hyperactive children: Adaptive functioning in major life activities. *Journal of the American Academy of Child & Adolescent Psychiatry, 45,* 192–202. http://dx.doi.org/10.1097/01.chi.0000189134.97436.e2

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Barkley, R. A., Murphy, K. R., & Fischer, M. (2008). *ADHD in adults: What the science says*. New York, NY: Guilford Press.

Biederman, J., Monuteaux, M. C., Mick, E., Spencer, T., Wilens, T. E., Silva, J. M., . . . Faraone, S. V. (2006). Young adult outcome of attention deficit hyperactivity disorder: A controlled 10-year follow-up study. *Psychological Medicine, 36,* 167–179. http://dx.doi.org/10.1017/S0033291705006410

Biederman, J., Petty, C. R., Evans, M., Small, J., & Faraone, S. V. (2010). How persistent is ADHD? A controlled 10-year follow-up study of boys with ADHD. *Psychiatry Research, 177,* 299–304. http://dx.doi.org/10.1016/j.psychres.2009.12.010

Bird, H. R., Shaffer, D., Fisher, P., Gould, M. S., Staghezza, B., Chen, J. Y., & Hoven, C. (1993). The Columbia Impairment Scales (CIS): Pilot findings on a measure of global impairment for children and adolescents. *International Journal of Methods in Psychiatric Research, 3,* 167–176.

Blase, S. L., Gilbert, A. N., Anastopoulos, A. D., Costello, E. J., Hoyle, R. H., Swartzwelder, H. S., & Rabiner, D. L. (2009). Self-reported ADHD and adjustment in college: Cross-sectional and longitudinal findings. *Journal of Attention Disorders, 13,* 297–309. http://dx.doi.org/10.1177/1087054709334446

Burns, G. L., Servera, M., Bernad, M. M., Carrillo, J. M., & Geiser, C. (2014). Ratings of ADHD symptoms and academic impairment by mothers, fathers, teachers, and aides: Construct validity within and across settings as well as occasions. *Psychological Assessment, 26,* 1247–1258. http://dx.doi.org/10.1037/pas0000008

Chronis, A. M., Fabiano, G. A., Gnagy, E. M., Wymbs, B. T., Burrows-MacLean, L., & Pelham, W. E., Jr. (2001). Comprehensive, sustained behavioral and pharmacological treatment for attention-deficit/hyperactivity disorder: A case study. *Cognitive and Behavioral Practice, 8,* 346–359. http://dx.doi.org/10.1016/S1077-7229(01)80008-0

Chronis, A. M., Lahey, B. B., Pelham, W. E., Jr., Williams, S. H., Baumann, B. L., Kipp, H., . . . Rathouz, P. J. (2007). Maternal depression and early positive parenting predict future conduct problems in young children with attention-deficit/hyperactivity disorder. *Developmental Psychology, 43,* 70–82. http://dx.doi.org/10.1037/0012-1649.43.1.70

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Hillsdale, NJ: Erlbaum.

Cullaty, B. (2011). The role of parental involvement in the autonomy development of traditional-age college students. *Journal of College Student Development, 52,* 425–439. http://dx.doi.org/10.1353/csd.2011.0048

Curran, P. J., Hussong, A. M., Cai, L., Huang, W., Chassin, L., Sher, K. J., & Zucker, R. A. (2008). Pooling data from multiple longitudinal studies: The role of item response theory in integrative data analysis. *Developmental Psychology, 44,* 365–380. http://dx.doi.org/10.1037/0012-1649.44.2.365

Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology/Psychologie canadienne, 49,* 14–23. http://dx.doi.org/10.1037/0708-5591.49.1.14

DuPaul, G. J., Weyandt, L. L., O'Dell, S. M., & Varejao, M. (2009). College students with ADHD: Current status and future directions. *Journal of Attention Disorders, 13,* 234–250. http://dx.doi.org/10.1177/1087054709340650

Dvorsky, M. R., & Langberg, J. M. (2014). Predicting impairment in college students with ADHD: The role of executive functions. [Advance online publication]. *Journal of Attention Disorders*. http://dx.doi.org/10.1177/1087054714548037

Eccles, J. (2004). Schools, academic motivation, and stage-environment fit. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed.). Hoboken, NJ: Wiley. http://dx.doi.org/10.1002/9780471726746.ch5

Embretson, S. E., & Reise, S. P. (2000). *Item response theory for psychologists*. New York, NY: Taylor & Francis.

Enders, C. K. (2010). *Applied missing data analysis*. New York, NY: Guilford Press.

Fabiano, G. A., Pelham, W. E., Jr., Waschbusch, D. A., Gnagy, E. M., Lahey, B. B., Chronis, A. M., . . . Burrows-Maclean, L. (2006). A practical measure of impairment: Psychometric properties of the impairment rating scale in samples of children with attention deficit hyperactivity disorder and two school-based samples. *Journal of Clinical Child and Adolescent Psychology, 35,* 369–385. http://dx.doi.org/10.1207/s15374424jccp3503_3

Fedele, D. A., Hartung, C. M., Canu, W. H., & Wilkowski, B. M. (2010). Potential symptoms of ADHD for emerging adults. *Journal of Psychopathology and Behavioral Assessment, 32,* 385–396. http://dx.doi.org/10.1007/s10862-009-9173-x

Fischer, M., Barkley, R. A., Fletcher, K. E., & Smallish, L. (1993). The stability of dimensions of behavior in ADHD and normal children over an 8-year followup. *Journal of Abnormal Child Psychology, 21,* 315–337. http://dx.doi.org/10.1007/BF00917537

Fleming, A. P., & McMahon, R. J. (2012). Developmental context and treatment principles for ADHD among college students. *Clinical Child and Family Psychology Review, 15,* 303–329. http://dx.doi.org/10.1007/s10567-012-0121-z

Flora, D. B. (2008). Specifying piecewise latent trajectory models for longitudinal data. *Structural Equation Modeling: A Multidisciplinary Journal, 15,* 513–533. http://dx.doi.org/10.1080/10705510802154349

Flory, K., Molina, B. S. G., Pelham, W. E., Jr., Gnagy, E., & Smith, B. (2006). Childhood ADHD predicts risky sexual behavior in young adulthood. *Journal of Clinical Child and Adolescent Psychology, 35,* 571–577. http://dx.doi.org/10.1207/s15374424jccp3504_8

Frazier, T. W., Youngstrom, E. A., Glutting, J. J., & Watkins, M. W. (2007). ADHD and achievement: Meta-analysis of the child, adolescent, and adult literatures and a concomitant study with college students. *Journal of Learning Disabilities, 40,* 49–65. http://dx.doi.org/10.1177/00222194070400010401

Frick, P. J. (1991). *The Alabama Parenting Questionnaire*. Unpublished rating scale. Department of Psychology, University of New Orleans.

Furman, W., & Buhrmester, D. (2009). The Network of Relationships Inventory: Behavioral Systems Version. *International Journal of Behavioral Development, 33,* 470–478. http://dx.doi.org/10.1177/0165025409342634

Gathje, R. A., Lewandowski, L. J., & Gordon, M. (2008). The role of impairment in the diagnosis of ADHD. *Journal of Attention Disorders, 11,* 529–537.

Ginsburg, G. S., & Bronstein, P. (1993). Family factors related to children's intrinsic/extrinsic motivational orientation and academic performance. *Child Development, 64,* 1461–1474. http://dx.doi.org/10.2307/1131546

Gordon, M., Antshel, K., Faraone, S., Barkley, R., Lewandowski, L., Hudziak, J. J., . . . Cunningham, C. (2006). Symptoms versus impairment: The case for respecting *DSM–IV*'s Criterion D. *Journal of Attention Disorders, 9,* 465–475. http://dx.doi.org/10.1177/1087054705283881

Hart, E. L., Lahey, B. B., Loeber, R., Applegate, B., & Frick, P. J. (1995). Developmental change in attention-deficit hyperactivity disorder in boys: A four-year longitudinal study. *Journal of Abnormal Child Psychology, 23,* 729–749. http://dx.doi.org/10.1007/BF01447474

Healey, D. M., Flory, J. D., Miller, C. J., & Halperin, J. M. (2011). Maternal positive parenting style is associated with better functioning in hyperactive/inattentive preschool children. *Infant and Child Development, 20,* 148–161. http://dx.doi.org/10.1002/icd.682

Heiligenstein, E., Guenther, G., Levy, A., Savino, F., & Fulwiler, J. (1999). Psychological and academic functioning in college students with atten-

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

tion deficit hyperactivity disorder. *Journal of American College Health, 47,* 181–185. http://dx.doi.org/10.1080/07448489909595644

Hill, N. E., & Wang, M. T. (2015). From middle school to college: Developing aspirations, promoting engagement, and indirect pathways from parenting to post high school enrollment. *Developmental Psychology, 51,* 224–235.

Hinshaw, S. P., Owens, E. B., Wells, K. C., Kraemer, H. C., Abikoff, H. B., Arnold, L. E., . . . Wigal, T. (2000). Family processes and treatment outcome in the MTA: Negative/ineffective parenting practices in relation to multimodal treatment. *Journal of Abnormal Child Psychology, 28,* 555–568. http://dx.doi.org/10.1023/A:1005183115230

Hinshaw, S. P., Owens, E. B., Zalecki, C., Huggins, S. P., Montenegro-Nevado, A. J., Schrodek, E., & Swanson, E. N. (2012). Prospective follow-up of girls with attention-deficit/hyperactivity disorder into early adulthood: Continuing impairment includes elevated risk for suicide attempts and self-injury. *Journal of Consulting and Clinical Psychology, 80,* 1041–1051. http://dx.doi.org/10.1037/a0029451

Hinshaw, S. P., Zupan, B. A., Simmel, C., Nigg, J. T., & Melnick, S. (1997). Peer status in boys with and without attention-deficit hyperactivity disorder: Predictions from overt and covert antisocial behavior, social isolation, and authoritative parenting beliefs. *Child Development, 68,* 880–896. http://dx.doi.org/10.2307/1132039

Holland, P. W., & Dorans, N. J. (2006). Linking and equating. In R. L. Brennan (Ed.), *Educational measurement* (4th ed., pp. 187–220). Westport, CT: Praeger.

Horn, J. L., & McArdle, J. J. (1992). A practical and theoretical guide to measurement invariance in aging research. *Experimental Aging Research, 18,* 117–144. http://dx.doi.org/10.1080/03610739208253916

Howard, A. L., Molina, B. S. G., Swanson, J. M., Hinshaw, S. P., Belendiuk, K. A., Harty, S. C., . . . Wigal, T. (2015). Developmental progression to early adult binge drinking and marijuana use from worsening versus stable trajectories of adolescent attention deficit/hyperactivity disorder and delinquency. *Addiction, 110,* 784–795. http://dx.doi.org/10.1111/add.12880

Hurt, E. A., Hoza, B., & Pelham, W. E., Jr. (2007). Parenting, family loneliness, and peer functioning in boys with attention-deficit/hyperactivity disorder. *Journal of Abnormal Child Psychology, 35,* 543–555. http://dx.doi.org/10.1007/s10802-007-9111-x

Hussong, A. M., Curran, P. J., & Bauer, D. J. (2013). Integrative data analysis in clinical psychology research. *Annual Review of Clinical Psychology, 9,* 61–89. http://dx.doi.org/10.1146/annurev-clinpsy-050212-185522

Jensen, P. S., Arnold, L. E., Swanson, J. M., Vitiello, B., Abikoff, H. B., Greenhill, L. L., . . . Hur, K. (2007). 3-year follow-up of the NIMH MTA study. *Journal of the American Academy of Child & Adolescent Psychiatry, 46,* 989–1002. http://dx.doi.org/10.1097/CHI.0b013e3180686d48

Kaiser, N. M., McBurnett, K., & Pfiffner, L. J. (2011). Child ADHD severity and positive and negative parenting as predictors of child social functioning: Evaluation of three theoretical models. *Journal of Attention Disorders, 15,* 193–203. http://dx.doi.org/10.1177/1087054709356171

Karpenko, V., Owens, J. S., Evangelista, N. M., & Dodds, C. (2009). Clinically significant symptom change in children with attention-deficit/hyperactivity disorder: Does it correspond with reliable improvement in functioning? *Journal of Clinical Psychology, 65,* 76–93. http://dx.doi.org/10.1002/jclp.20549

Kawabata, Y., Tseng, W. L., & Gau, S. S. F. (2012). Symptoms of attention-deficit/hyperactivity disorder and social and school adjustment: The moderating roles of age and parenting. *Journal of Abnormal Child Psychology, 40,* 177–188. http://dx.doi.org/10.1007/s10802-011-9556-9

Kent, K. M., Pelham, W. E., Jr., Molina, B. S. G., Sibley, M. H., Waschbusch, D. A., Yu, J., . . . Karch, K. M. (2011). The academic experience of male high school students with ADHD. *Journal of Abnormal Child Psychology, 39,* 451–462. http://dx.doi.org/10.1007/s10802-010-9472-4

Kleinman, N. L., Durkin, M., Melkonian, A., & Markosyan, K. (2009). Incremental employee health benefit costs, absence days, and turnover among employees with ADHD and among employees with children with ADHD. *Journal of Occupational and Environmental Medicine, 51,* 1247–1255. http://dx.doi.org/10.1097/JOM.0b013e3181bca68c

Kuriyan, A. B., Pelham, W. E., Jr., Molina, B. S. G., Waschbusch, D. A., Gnagy, E. M., Sibley, M. H., . . . Kent, K. M. (2013). Young adult educational and vocational outcomes of children diagnosed with ADHD. *Journal of Abnormal Child Psychology, 41,* 27–41. http://dx.doi.org/10.1007/s10802-012-9658-z

Langberg, J. M., Molina, B. S. G., Arnold, L. E., Epstein, J. N., Altaye, M., Hinshaw, S. P., . . . Hechtman, L. (2011). Patterns and predictors of adolescent academic achievement and performance in a sample of children with attention-deficit/hyperactivity disorder. *Journal of Clinical Child and Adolescent Psychology, 40,* 519–531. http://dx.doi.org/10.1080/15374416.2011.581620

Latimer, W. W., August, G. J., Newcomb, M. D., Realmuto, G. M., Hektner, J. M., & Mathy, R. M. (2003). Child and familial pathways to academic achievement and behavioral adjustment: A prospective six-year study of children with and without ADHD. *Journal of Attention Disorders, 7,* 101–116. http://dx.doi.org/10.1177/108705470300700204

Maggs, J. L. (1997). Alcohol use and binge drinking as goal-directed action during the transition to postsecondary education. In J. L. Schulenberg, J. L. Maggs, & K. Hurrelmann (Eds.), *Health risks and developmental transitions during adolescence* (pp. 345–371). New York, NY: Cambridge University Press.

Malone, P. S., Van Eck, K., Flory, K., & Lamis, D. A. (2010). A mixture-model approach to linking ADHD to adolescent onset of illicit drug use. *Developmental Psychology, 46,* 1543–1555. http://dx.doi.org/10.1037/a0020549

Masten, A. S., Burt, K. B., Roisman, G. I., Obradović, J., Long, J. D., & Tellegen, A. (2004). Resources and resilience in the transition to adulthood: Continuity and change. *Development and Psychopathology, 16,* 1071–1094. http://dx.doi.org/10.1017/S0954579404040143

Meinzer, M. C., Hill, R. M., Pettit, J. W., & Nichols-Lopez, K. A. (2014). Parental support partially accounts for the covariation between ADHD and depressive symptoms in college students. *Journal of Psychopathology and Behavioral Assessment*. Advance online publication.

Molina, B. S. G., Hinshaw, S. P., Swanson, J. M., Arnold, L. E., Vitiello, B., Jensen, P. S., . . . the MTA Cooperative Group. (2009). The MTA at 8 years: Prospective follow-up of children treated for combined-type ADHD in a multisite study. *Journal of the American Academy of Child & Adolescent Psychiatry, 48,* 484–500. http://dx.doi.org/10.1097/CHI.0b013e31819c23d0

MTA Cooperative Group. (1999). A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder. *Archives of General Psychiatry, 56,* 1073–1086. http://dx.doi.org/10.1001/archpsyc.56.12.1073

Murphy, K. R., Barkley, R. A., & Bush, T. (2001). Executive functioning and olfactory identification in young adults with attention deficit-hyperactivity disorder. *Neuropsychology, 15,* 211–220. http://dx.doi.org/10.1037/0894-4105.15.2.211

Nelson, L. J., Padilla-Walker, L. M., & Nielson, M. G. (2015). Is hovering smothering or loving? An examination of parental warmth as a moderator of relations between helicopter parenting and emerging adults' indices of adjustment. *Emerging Adulthood, 3,* 282–286. http://dx.doi.org/10.1177/2167696815576458

Nelson Laird, T. F., & Cruce, T. M. (2009). Individual and environmental effects of part-time enrollment status on student-faculty interaction and self-reported gains. *The Journal of Higher Education, 80,* 290–314. http://dx.doi.org/10.1353/jhe.0.0050

O'Connor, B. C., Garner, A. A., Peugh, J. L., Simon, J., & Epstein, J. N. (2014). Improved but still impaired: Symptom-impairment correspondence among youth with attention-deficit hyperactivity disorder receiv-

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

ing community-based care. *Journal of Developmental and Behavioral Pediatrics, 36,* 106–114.

Owens, J. S., Johannes, L. M., & Karpenko, V. (2009). The relation between change in symptoms and functioning in children with ADHD receiving school-based mental health services. *School Mental Health, 1,* 183–195. http://dx.doi.org/10.1007/s12310-009-9020-y

Pelham, W. E., Jr., & Fabiano, G. A. (2008). Evidence-based psychosocial treatments for attention-deficit/hyperactivity disorder. *Journal of Clinical Child and Adolescent Psychology, 37,* 184–214. http://dx.doi.org/10.1080/15374410701818681

Pingault, J. B., Côté, S. M., Vitaro, F., Falissard, B., Genolini, C., & Tremblay, R. E. (2014). The developmental course of childhood inattention symptoms uniquely predicts educational attainment: A 16-year longitudinal study. *Psychiatry Research, 219,* 707–709. http://dx.doi.org/10.1016/j.psychres.2014.06.022

Richards, T., Deffenbacher, J., & Rosén, L. (2002). Driving anger and other driving-related behaviors in high and low ADHD symptom college students. *Journal of Attention Disorders, 6,* 25–38. http://dx.doi.org/10.1177/108705470200600104

Schafer, J. L. J., & Graham, J. W. J. (2002). Missing data: Our view of the state of the art. *Psychological Methods, 7,* 147–177. http://dx.doi.org/10.1037/1082-989X.7.2.147

Schroeder, V. M., & Kelley, M. L. (2009). Associations between family environment, parenting practices, and executive functioning of children with and without ADHD. *Journal of Child and Family Studies, 18,* 227–235. http://dx.doi.org/10.1007/s10826-008-9223-0

Schulenberg, J. E., Bryant, A. L., & O'Malley, P. M. (2004a). Taking hold of some kind of life: How developmental tasks relate to trajectories of well-being during the transition to adulthood. *Development and Psychopathology, 16,* 1119–1140. http://dx.doi.org/10.1017/S0954579404040167

Schulenberg, J. E., Sameroff, A. J., & Cicchetti, D. (2004b). The transition to adulthood as a critical juncture in the course of psychopathology and mental health. *Development and Psychopathology, 16,* 799–806. http://dx.doi.org/10.1017/S0954579404040015

Shaffer, D., Fisher, P., Lucas, C. P., Dulcan, M. K., & Schwab-Stone, M. E. (2000). NIMH Diagnostic Interview Schedule for Children Version IV (NIMH DISC-IV): Description, differences from previous versions, and reliability of some common diagnoses. *Journal of the American Academy of Child & Adolescent Psychiatry, 39,* 28–38. http://dx.doi.org/10.1097/00004583-200001000-00014

Shaw-Zirt, B., Popali-Lehane, L., Chaplin, W., & Bergman, A. (2005). Adjustment, social skills, and self-esteem in college students with symptoms of ADHD. *Journal of Attention Disorders, 8,* 109–120. http://dx.doi.org/10.1177/1087054705277775

Sibley, M. H., Altszuler, A. R., Ross, J. M., Sanchez, F., Pelham, W. E., Jr., & Gnagy, E. M. (2014). A parent-teen collaborative treatment model for academically impaired high school students with ADHD. *Cognitive and Behavioral Practice, 21,* 32–42. http://dx.doi.org/10.1016/j.cbpra.2013.06.003

Sibley, M. H., Pelham, W. E., Jr., Molina, B. S. G., Gnagy, E. M., Waschbusch, D. A., Garefino, A. C., . . . Karch, K. M. (2012). Diagnosing ADHD in adolescence. *Journal of Consulting and Clinical Psychology, 80,* 139–150. http://dx.doi.org/10.1037/a0026577

Sibley, M. H., Pelham, W. E., Jr., Molina, B. S. G., Gnagy, E. M., Waxmonsky, J. G., Waschbusch, D. A., . . . Kuriyan, A. B. (2012). When diagnosing ADHD in young adults emphasize informant reports, DSM items, and impairment. *Journal of Consulting and Clinical Psychology, 80,* 1052–1061. http://dx.doi.org/10.1037/a0029098

Swanson, J. M., Hinshaw, S. P., Arnold, L. E., Gibbons, R. D., Marcus, S., Hur, K., . . . Wigal, T. (2007). Secondary evaluations of MTA 36-month outcomes: Propensity score and growth mixture model analyses. *Journal of the American Academy of Child & Adolescent Psychiatry, 46,* 1003–1014.

Swanson, J. M., Kraemer, H. C., Hinshaw, S. P., Arnold, L. E., Conners, C. K., Abikoff, H. B., . . . Wu, M. (2001). Clinical relevance of the primary findings of the MTA: Success rates based on severity of ADHD and ODD symptoms at the end of treatment. *Journal of the American Academy of Child & Adolescent Psychiatry, 40,* 168–179. http://dx.doi.org/10.1097/00004583-200102000-00011

Theriault, S. W., & Holmberg, D. (2001). Impulsive, but violent? Are components of the Attention Deficit-Hyperactivity syndrome associated with aggression in relationships? *Violence Against Women, 7,* 1464–1489. http://dx.doi.org/10.1177/10778010122183946

Thomassin, K., & Suveg, C. (2012). Parental autonomy support moderates the link between ADHD symptomatology and task perseverance. *Child Psychiatry and Human Development, 43,* 958–967. http://dx.doi.org/10.1007/s10578-012-0306-1

U.S. Department of Education, National Center for Education Statistics. (2013). Characteristics of private schools in the United States: Results from the 2011–12 Private School Universe Survey. (Report no. NCES-2013–316). Retrieved from https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2013316

Walther, C. A. P., Cheong, J., Molina, B. S. G., Pelham, W. E., Jr., Wymbs, B. T., Belendiuk, K. A., & Pedersen, S. L. (2012). Substance use and delinquency among adolescents with childhood ADHD: The protective role of parenting. *Psychology of Addictive Behaviors, 26,* 585–598. http://dx.doi.org/10.1037/a0026818

Wolf, L. E. (2001). College students with ADHD and other hidden disabilities. Outcomes and interventions. *Annals of the New York Academy of Sciences, 931,* 385–395. http://dx.doi.org/10.1111/j.1749-6632.2001.tb05792.x

Received January 30, 2015
Revision received July 23, 2015
Accepted July 30, 2015 ■

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Received: 12 October 2016 | Revised: 9 March 2017 | Accepted: 20 March 2017

DOI: 10.1002/pits.22039

WILEY

RESEARCH ARTICLE

Confirmatory factor analyses comparing parental involvement frameworks with secondary students

Kristin Duppong Hurley[1] | **Matthew C. Lambert**[1] | **Stacy-Ann A. January**[2] | **Jacqueline Huscroft D'Angelo**[1]

[1]University of Nebraska–Lincoln

[2]University of South Carolina

Correspondence
Kristin Duppong Hurley, 247 Barkley Memorial Center, Academy for Child and Family Well Being, Department of Special Education and Communication Disorders, University of Nebraska–Lincoln, Lincoln, NE 68583.
Email: kristin.hurley@unl.edu

The development and preparation of this article was supported in part by the Institute of Education Sciences, U.S. Department of Education, through Grant R324B110001 to the University of Nebraska–Lincoln. The opinions expressed are those of the authors and do not necessarily represent views of the Institute or the U.S. Department of Education.

Abstract

Given the lack of research on measurement models used to operationalize parental involvement with secondary students, the goal of this research is to examine the measurement properties of the three-domain conceptualization of parental involvement including school-based involvement, home-based involvement, and academic socialization, compared to a more nuanced six domain conceptualization school-based (1) school/parent communication, (2) attending school activities, home-based (3) home activities, (4) homework help, academic socialization, (5) parent–child communication about education, and (6) parental aspirations for child's education. When comparing the fit among the models, the six-factor model had best fit indices and indicated varied correlations among the subdomains. The six-factor model allowed for more nuanced variations among the subdomains that may be helpful when assessing parental involvement with high school students.

KEYWORDS
parental involvement, psychometrics, secondary students

1 | INTRODUCTION

Parental involvement in a child's education is a strong predictor of future academic achievements (Higgins & Katsipataki, 2015; Wilder, 2014). Therefore, it is not surprising that recent federal legislation recommends that schools develop ways to improve parent's involvement with their child's school (Every Student Succeeds Act, 2015). The effectiveness of parental involvement in improving academic outcomes is supported by an extensive empirical base, including six recent meta-analyses finding moderate to large effect sizes (Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2003, 2005, 2007, 2012). One helpful approach to understanding the role of different types of parental involvement has been the development of frameworks with different domains of parental involvement. Most of the conceptualizations of parental involvement have focused on younger students (Epstein, 1987; Grolnick & Slowiaczek, 1994; Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005). However, several studies have found that the amount of parental involvement declines as children age (Cooper, 2001; Harvard Family Research Project, 2007). Others have found

 © 2017 Wiley Periodicals, Inc.

that some aspects of parental involvement, such as helping with homework is beneficial when children are younger (Powell, Son, File, & Froiland, 2012), but is related to negative outcomes as children are in secondary school (Froiland, Peterson, & Davison, 2013; Hill & Tyson, 2009). To better understand parental involvement with older students, Hill and Tyson (2009) conducted a meta-analysis of parental involvement with middle school students and proposed three primary domains of parental involvement: home-based involvement, school-based involvement, and academic socialization. The objective of this study is to examine the psychometric structure of this three-domain framework of parental involvement compared to a more nuanced six-domain framework of parental involvement with a nationally representative sample of secondary students.

Despite the number studies of parental involvement, its conceptualization varies greatly across studies. One of the earliest frameworks for parental involvement is that of Epstein and colleagues (Connors & Epstein, 1995; Epstein, 1987), which focuses on four primary factors: (1) school-based involvement (e.g., volunteering for school activities like parent-teacher organization and attending parent–teacher conferences); (2) home-based involvement (e.g., providing educational activities in the home); (3) school support for parenting (e.g., providing parent training resources); and (4) encouraging involvement in school and community agencies. Grolnick and Slowiaczek (1994) reconfigured the framework of parental involvement to include: (1) behavioral involvement, including activities such as volunteering in school and helping child with homework; (2) cognitive–intellectual, such as home-based activities designed to encourage academic interests; and (3) personal involvement, which includes parental attitudes and expectations about school and education. In general, extant research has focused on one or two of these components, and not a comprehensive framework (Hill & Tyson, 2009; Punter, Glas, & Meelissen, 2016).

To better address the needs of older students, Hill and Tyson (2009) offered a comprehensive framework of parental involvement in secondary school, as a result of their meta-analysis of parental involvement with middle school youth. Essential to this framework is: (1) home-based involvement, (2) school-based involvement, and (3) academic socialization. *Home-based involvement* includes activities such as parent and child communication about school, parental help with homework and school activities, taking the child to places (e.g., library, museum) or events to encourage academic interests, and creating a learning environment in the home. The domain of *school-based involvement* includes parents' visits to the school for meetings and open houses, volunteering at the school, and parent–teacher communication. Finally, *academic socialization* refers to parental communication about expectations and importance for education, connecting schoolwork to current events, encouraging aspirations for academic and employment, making plans for child's academic future, and discussing learning strategies with the child. Hill and Tyson's meta-analysis of 50 studies found an overall significant effect for parental involvement on academic achievement for middle school students. The strongest positive findings were in the area of academic socialization, followed by school-based involvement. The home-based domain was not significant. However, once the home-based subdomain of homework was analyzed separately from educational opportunities at home, it was found that parental involvement in homework was a negative predictor of achievement and the other home-based activities were a positive predictor of middle school students' achievement.

Having a framework that is responsive to older students is essential, as the role of parental involvement seems to change as youth age (Froiland et al., 2013; Hill & Tyson, 2009). Although research generally indicates that parental involvement in education is beneficial, some findings are mixed regarding the specific components of parental involvement that are most important for improving student outcomes. For example, Ma (1999) conducted a meta-analysis examining the effects of types of parental involvement and dropping out of advanced mathematics courses in secondary students. This study revealed that parental volunteer work in school, one type of *school-based involvement*, was the most important school-level variable in eighth to 10th grade; parental home discussion, one type of *academic socialization*, was critical in grades 10 and 11; and home-school communication (i.e., *school-based involvement*) had a temporary, though strong, effect in ninth grade. The effect of home expectations (e.g., *home-based involvement*) was nonsignificant across all grades. These inconsistencies in findings may be due, at least in part, to whether students are in elementary or secondary school. Changes in parental involvement as students' age may be due to a variety of factors, including structural differences between the elementary and secondary context and adolescent development. Similarly, students in middle and high school have more teachers throughout the day, which may decrease the extent of parent–teacher interactions as compared with elementary school. Secondary schools are also structured

differently from elementary schools; they are larger, more compartmentalized and, as a result, perhaps more difficult for parents to navigate. Finally, adolescence is a period of development in which youth seek more autonomy, which decreases parents' direct involvement with the student and school (Deslandes & Cloutier, 2002). Therefore, some of the mixed findings may related to natural changes in parental involvement due to the child's age and the educational structure experienced by the student.

One particularly salient example of the developmental changes in parental involvement relates to helping with homework. A recent meta-analysis on the effects of parental help with homework on achievement found an overall small effect for the association of parental assistance with homework and improvements in youth's academic achievement, but this effect was moderated by the type of help, the students' grade level, and the academic subject (Patall, Cooper, & Robinson, 2008). For example, homework involvement has larger effects in elementary school (Powell et al., 2012) than in middle or high school (Froiland et al., 2013; Patall et al., 2008; Shumow & Miller, 2001). Likewise, Hill and Tyson's (2009) meta-analysis found that parental help with homework in middle school students was not predictive of academic achievement. In later years, parents may be less equipped to help with homework, and homework help may infringe on the increasing autonomy of adolescents (Eccles & Harold, 1993). One of the primary reasons parents engage in homework help is because they feel confident about their ability to help with homework (Hoover-Dempsey & Sandler, 1997; Hoover-Dempsey et al., 2001). Indeed, research indicates that parents with greater confidence in helping with homework are more likely to be involved with their child (Balli, Demo, & Wedman, 1998). Thus, it is important that investigations of parent involvement in homework also include their confidence in engaging in the task, and to consider that the importance of helping with homework diminishes for older students.

Although the three-domain framework for parental involvement in secondary students has been useful, given some of the contradictory findings for subdomains of parental involvement (e.g., Bhargava & Witherspoon, 2015; Froiland et al., 2013) it would be helpful to examine the measurement properties of a single-factor conceptualization of parental involvement compared to a three-domain framework, and a more specific six-domain framework of parental involvement. To accomplish this goal, we propose to examine the measurement properties of the three-domain conceptualization of parental involvement (e.g., school-based involvement, home-based involvement, and academic socialization) as proposed by Hill and Tyson (2009). Likewise, we will also examine a more nuanced approach of the three-domains proposed by Hill and Tyson that includes frequently used subdomains of parental involvement (e.g., Benner, Boyle, & Sadler, 2016; Bhargava & Witherspoon, 2015). For school-based involvement, the two subdomains included *school/parent communication* (e.g., parent–teacher conferences and phone calls) and *attending school activities* (e.g., PTA, open house, child sports, and art performances). Home-based involvement included two subdomains of *home activities* (e.g., home environment and events fostering education like helping with science fairs, going to the library) and *homework help* (parent helping with homework, parental confidence in homework topic). Likewise, academic socialization can be thought of as representing the two subdomains of *parent–child communication* (e.g., parent–child discussions about the child's education and career goals) and *parental aspirations* (e.g., parental educational and occupational hopes and beliefs about child's potential). Parental involvement research with secondary students has included aspects of the three-domain framework (e.g., Hill & Tyson, 2009; Wang & Sheikh-Khalil, 2014) and studies have included one or two specific subdomains of parental involvement (e.g., Benner et al., 2016; Bhargava & Witherspoon, 2015). However, research has yet to examine a comprehensive six-domain framework of parental involvement in comparison to the three domain framework or a single general factor of parental involvement. Examining the measurement properties of the broad three-domain and more nuanced six-domain frameworks will help the field to better understand which conceptualizations are best suited for secondary students.

2 | METHOD

2.1 | Data source

The current study used data from the High School Longitudinal Study of 2009 (HSLS:09), a nationally representative sample of students enrolled in ninth grade during the fall of 2009. The HSLS:09 is the most current longitudinal study

of secondary students and aims to understand high school students' paths into postsecondary education or the workforce, with a particular emphasis on careers related to science, technology, engineering, and mathematics. Participants in the HSLS:09 were sampled using a stratified, two-stage process that began with inviting randomly selected schools, and then randomly sampling approximately 27 students from each school, resulting in a total student sample of 25,206. Parents self-selected into the HSLS:09 with the one criterion being that the respondent was most knowledgeable about the participating student's school situation and experiences. Parents of 16,995 students agreed to participate in the study.

2.2 | Procedures

Data for the HSLS:09 were collected across three waves: fall 2009 (when students were in ninth grade), spring 2012 (when students were in 11th grade), and summer/fall 2013 and spring 2014 (after most students graduated high school); however, only data from wave 1 were used in the current analyses. During wave 1, students completed surveys that included questions regarding their demographic background, current and prior school experiences (e.g., course enrollment), values and expectations that influence their educational choices, educational engagement, and their parents' involvement in their education. The parent survey consisted of questions covering: family demographics and background, child's educational history, planning for postsecondary education/employment, and parental involvement in their child's education.

2.3 | Participants

Students included in the current study met the following inclusion criteria: a parent participated in the study ($N = 16{,}995$) and provided information for at least one indicator of parent involvement ($N = 15{,}740$). The final analysis sample included 15,740 ninth-grade students, 50.3% of which were male. The racial and ethnic background of students was 53.51% Caucasian/Non-Hispanic, 12.44% African American/Non-Hispanic, 7.63% multiracial/Non-Hispanic, 3.99% Asian or Pacific Islander/Non-Hispanic, <1% Native American/Non-Hispanic, and 21.74% Hispanic. Nearly 11% of participants were identified with a disability and were receiving special education services as part of an individualized education program (IEP).

2.4 | Measures

We identified 27 variables in the HSLS:09 dataset that could possibly represent indicators of parental involvement, as defined by Hill and Tyson (2009) and the extant body of research on parental involvement, as detailed below for each parental involvement domain. The authors reviewed all of 27 parental involvement items in the HSLS:09 and had unanimous agreement on the inclusion and placement of the items into the parental involvement subdomains.

2.4.1 | School-based parental involvement

We identified eight dichotomous variables that reflect the domain of school-based parental involvement as used in previous research (e.g., Hill & Tyson, 2009; Wang & Sheikh-Khalil, 2014). Although many researchers use the single domain of school-based parental involvement, some researchers have differentiated school-based parental involvement into two distinct subdomains of communication with school personnel and volunteering/attending school functions. For example, Bhargava and Witherspoon (2015) used a subdomain of school communication that included items such as attendance at parent–teacher conferences, and contacting school about the child and a domain on school volunteerism including activities such as attending an open house, going to school performances, helping with fund raising. Our subdomain of *school–parent communication* is similar to prior research and includes three indicators measuring whether parents (1) attended conferences with teachers, (2) talked with their child's school counselor, or (3) talked with either a teacher or school counselor about college. The subdomain of *attending school activities* had five indicators measuring

whether parents (1) attended parent–teacher organization meetings, (2) attended school events, (3) volunteered at school or in their child's classroom, (4) participated in a fundraiser for the school, or (5) attended a school meeting.

2.4.2 | Academic socialization

The domain of academic socialization was represented as a latent variable with seven indicators and two subdomains. The subdomain of *parent/child communication about education/occupation* included five student-reported items measuring whether the student had talked with parents about taking (1) math, (2) science, and (3) other courses; (4) going to college; or (5) future careers. The subdomain of *parental aspirations* included two parent-report variables assessing parents' beliefs on how far their child will get academically (e.g., less than high school, bachelor degree, doctoral degree, etc.) and their confidence in whether their child has the ability to complete a Bachelor's degree. Each of these variables were selected due to their use in previous parent involvement research. That is, parents' communication about careers (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996), discussion about courses (Bhargava & Witherspoon, 2015; Useem, 1992), as well as academic expectations (Benner et al., 2016; Zhang, Haddad, Torres, & Chen, 2011; Wang & Sheikh-Khalil, 2014) have been found to be positively associated with children's academic outcomes.

2.4.3 | Home-based parental involvement

Home-based parental involvement was represented as a latent variable with 12 indicators from two subdomains. These items were selected based on prior research on parental involvement and inclusion in constructs similar to home-based parental involvement. For example, there is extensive literature on the involvement of parents in providing home-based support with respect to homework in areas of mathematics, science, and English (Fan & Chen, 2001; Han, Leventhal, & Linver, 2004; Hill & Tyson, 2009; Hoover-Dempsey et al., 2001; McGill, Hughes, Alicea, & Way, 2012; Moon & Hofferth, 2016; Robinson & Lubiernski, 2011) Furthermore, there is also evidence demonstrating the benefits of enrichment activities and taking a more interactive process to support student learning such as helping with a science fair project, discussing articles about related to Science, Technology, Engineering, and Math (STEM), going to a live show or going to the library (Benner et al., 2016; DeBaryshe, Buell, & Binder, 1996; Fan & Chen, 2001; Hoover-Dempsey et al., 2001).The subdomain of *parent–child activities* included parent report of whether they engaged in the following educational activities with their child: (1) working on computer, (2) fixing or repairing something (e.g., fixing the microwave oven or fixing the sink), (3) going to the library, (4) going to a live show, (5) going to a museum, (6) attending a science fair, (7) helping with a science fair project, (8) discussing a program or article about science, math, or technology. The domain of *homework support* was measured by three variables indicating the parent's confidence in helping with math homework, science homework, and English homework. These variables were measured on a three-point scale (*not at all confident*, *somewhat confident*, and *very confident*). The frequency within which parents helped with homework was collected on a five-point scale (*never*, *less than 1 day a week*, *1–2 days a week*, *3–5 days a week*, and *more than 5 days a week*).

2.5 | Data analysis

Prior to completing the primary analyses, Stata v13 was used to compute all descriptive statistics and zero-order correlations while accounting for the complex survey design of the HSLS:09. Structural equation modeling (SEM; also referred to as latent variable modeling) was used as the primary analytic framework. SEM provides a flexible framework for building complex models and the functionality to use latent variables while accounting for the complex survey design of the HSLS:09. Educational researchers use SEM for many reasons including to operationalize psychological or educational constructs and to study to the relations between constructs (Reise, Scheines, Widaman, & Haviland, 2013). In the simplest form, a structural equation model consists of a measurement component and a structural component. The measurement model (e.g., confirmatory factor analysis) specifies the relations between the factor indicators (i.e., observed variables) and the latent factor(s) (e.g., homework assistance, parent–child communication), and the structural model specifies the relations between the latent factors (i.e., correlation or regression coefficients).

2.5.1 | Analytic weights

Because the HSLS:09 used a complex survey design where students were sampled using a two-stage process in which schools were first sampled and then students were sampled from the participating schools, analytic and replicate weights were needed to account for the complex sampling design when analyzing the data. The analytic weights (i.e., sampling weights) were used to adjust for the conditional probability of selection and nonresponse. Analytic weights adjust for (1) the probability of the student's high school being included in the sample, (2) the stratified student sampling design, and (3) nonresponse due to parental refusal or student refusal.

2.5.2 | CFA models

Mplus v7.40 was used to fit three confirmatory factor analysis models to a random half (n = 7,870) of the HSLS:09 dataset: (a) single-factor model, (b) three-factor model based on the conceptual framework of Hill and Tyson (2009), and (c) six-factor model based on the more fine-grained components of the Hill and Tyson framework. Each model was fit with the same 27 indictors of parental involvement. Because all of the indicators were categorical (i.e., nominal or ordinal), weighted least squares with mean and variance adjustments (WLSMV) was used to estimate the models. Item parameters were scaled using the delta method, as is default in Mplus when using WLSMV estimation. Missing data were excluded using a pairwise-present approach.

2.5.3 | Model fit

A good-fitting model accurately represents the observed data, and a good-fitting model is a prerequisite for interpreting the structural parameters. We used the widely accepted guidelines for interpreting the goodness of fit of SEMs (Browne & Cudeck, 1993; Hu & Bentler, 1999). Because no one indicator of fit is universally preferred, we evaluated multiple indicators of model fit including chi-square, comparative fit index (CFI), Tucker–Lewis index (TLI), and root mean square of the error of approximation (RMSEA). For SEMs estimated under WLSMV, RMSEA, and CFI tend to be the most consistent indicators of goodness of fit (Yu, 2002). The fit of nested models was compared using DIFFTEST chi-square difference tests. A significant chi-square difference test indicates that the more complex model (e.g., the six-factor model) fits the data more closely than the more parsimonious model (e.g., the three-factor model). Note that the fit statistics do not take into account the complex design of the survey data (i.e., replicate weights were not used); however, adjusting for the complex design leads to better fit to the data, so the reported fit statistics can be considered conservative (Stapleton, 2008).

2.5.4 | Model parsimony

Factor loadings and modification indices (MI) were used to identify variables that exhibited weak (or negative) associations to the latent factors (i.e., factor loadings <.40; Nunnally & Bernstein, 1994) or variables that exhibited substantial residual correlations with other variables or latent factors. Variables with significant residual correlations have decremented effects on model fit. The weak-performing variables were dropped from the final (parsimonious) CFA models.

2.5.5 | Cross-validation

The second random half of the dataset (n = 7,870) was used to cross-validate the parsimonious models. Models parameters from the cross-validated models were used in the final interpretations of the adequacy and meaningfulness of the pattern (e.g., factor loadings; λ) and structure coefficients (e.g., correlations between items and latent factors; r_s). Although pattern coefficients are reported in almost all CFA studies, structure coefficients tend to be reported far less often (Graham, Guthrie, & Thompson, 2003; Thompson, 1997); however, structure coefficients can be invaluable when identifying model misspecification within correlated factors models.

A structure coefficient is a correlation between the measured indicator and the latent factor (Byrne, 1994; Gorsuch, 1983). In a model with a congeneric structure (i.e., each indicator measures only one latent factor), a pattern coefficient might be constrained to zero, but the structure coefficient will be nonzero because the latent factors are

correlated (Bentler & Yuan, 2000). Structure coefficients may suggest model misspecification when the correlations are larger for indicators that *do not* measure the factor than for indicators that *do* measure the factor (Graham et al., 2003).

2.5.6 | Factor reliability

Coefficient omega (ω; McDonald, 1978), a CFA-based estimate of internal consistency, was computed for each latent factor in the cross-validated model. Coefficient omega (like coefficient alpha) represents the ratio of true score variance to total score variance and is scaled from 0 (completely unreliable) to 1 (perfectly reliable) with values closer to 1 indicating greater reliability; however, coefficient omega is generally considered more robust and a more appropriate estimate of the population reliability than coefficient alpha (Zinbarg, Yovel, Revelle, & McDonald, 2006). When interpreting coefficient omega, most researchers continue to apply the general guidelines proposed by Nunnally and Bernstein (1994) where values >.70 are considered adequate for research purposes (Dunn, Baguley, & Brunsden, 2014).

3 | RESULTS

Parental involvement varied across the set of 27 indicators. Of all of the parental involvement activities included in the HSLS:09 dataset, parents were most likely to do something on the computer with their child (86.2%) and least likely to attend the science fair (16.4%). Within the domain of *school-based involvement*, parents were more likely than not to attend a parent–teacher conference (54.0%), attend a school event (64.3%), and attend a school meeting (81.6%). Parents were less likely to volunteer at school (25.9%) or attend a parent–teacher organization meeting (35.2%). Within the domain of *home-based involvement*, parents were more likely than not to (1) do something on the computer with their child (86.2%), (2) discuss a STEM magazine or Internet article (64.4%), (3) go to the library (64.3%), (4) go to a live show (61.2%), and (5) go to a museum (52.2%). Parents were less likely to help with a science fair project (39.4%) or attend the science fair (16.4%). Nearly 50% of parents reported helping their child with homework less than 1 day a week, and 32.8% of parents reported helping their child 1–2 days a week. Within the domain of *academic socialization*, parents were more likely than not to talk to their child about math courses (55.2%) and other school courses (e.g., English, history, fine arts) (57.5%), but slightly less likely to talk to their child about science courses (45.3%). Parents were also highly likely to talk to their child about college (79.1%) and jobs (79.5%). Just over two-thirds of parents thought that their child could "definitely" earn a bachelor's degree.

3.1 | Initial CFA models

The initial CFA models were fit using all 27 parental involvement variables identified in the HSLS:09 dataset. Fit statistics for the initial CFA models including chi-square, RMSEA, CFI, TLI, and chi-square differences are presented in Table 1. The goodness of fit of single-factor model was poor based on the CFI (.703) and TLI (.678) fit indices; however, the RMSEA (.051) indicated acceptable fit. The three- and six-factor models were also supported by the RMSEA values (.031 and .022, respectively); however, only the six-factor model exhibited acceptable CFI (.945) and TLI values (.938). The chi-square difference test between the three- and six-factor models ($\Delta\chi^2 = 999.41$, $p < .0001$) confirmed that the six-factor model was the closest fit to the data albeit not a *close fit* to the data.

3.1.1 | Model parsimony

Model parsimony (pruning) decisions were based on the six-factor model because it demonstrated the closest fit to the empirical data. Just four of the 27 variables were dropped from the final CFA models. Variables were identified based on low factor loadings ($\lambda < .40$) and/or "large" MI. Variables were dropped one at a time until no more variables met the criterion for pruning. The four variables were whether or not the caregiver (1) fixed things with their child at home

TABLE 1 Confirmatory factor analysis fit statistics for the initial and final CFA models

	$\chi^2_{(df)}$	$\Delta\chi^2$	CFI	TLI	RMSEA [90% CI]
Initial models					
Single factor	$6{,}900.14_{(324)}$	–	.703	.678	.051 [.050, .052]
Three factor	$2{,}796.53_{(321)}$	1,977.59[a]	.888	.878	.031 [.030, .032]
Six factor	$1{,}517.57_{(309)}$	999.41[a]	.945	.938	.022 [.021, .023]
Parsimonious models					
Single factor	$6{,}675.19_{(230)}$	–	.721	.693	.060 [.058, .061]
Three factor	$2{,}450.27_{(227)}$	1,897.56[a]	.904	.893	.035 [.034, .037]
Six factor	$1{,}098.94_{(215)}$	965.98[a]	.962	.955	.023 [.022, .024]
Cross-validated models					
Single factor	$7{,}525.13_{(230)}$	–	.721	.693	.063 [.062, .065]
Three factor	$2{,}980.27_{(227)}$	1,790.84[a]	.895	.882	.039 [.038, .041]
Six factor	$1{,}198.82_{(215)}$	1,112.88[a]	.962	.956	.024 [.023, .025]

CFI = comparative fit index; TLI = Tucker–Lewis Index; RMSEA = root mean square error of approximation.
Note. $\Delta\chi^2$ for the two confirmatory models was calculated using the DIFFTEST feature in Mplus (Muthén & Muthén, 1998–2014).
[a]$p < .0001$

($\lambda = .32$), (2) went with their child to the library (residual correlations) or (3) helped their child with a science fair project (residual correlations), and (4) the frequency with which the caregiver helped their child with homework ($\lambda = .31$). The parsimonious six-factor model fit the data closely according to all of the model fit indictors (CFI = .962, TLI = .955, RMSEA = .023; see Table 1).

3.2 | Cross-validated CFA models

The fit statistics for the cross-validated models are presented in Table 1. The single-factor model fit the data poorly as indicated by the CFI and TLI goodness-of-fit statistics (CFI = .729, TLI = .702); however, the RMSEA statistic indicated adequate fit to the data (RMSEA = .062). The three-factor model fit the data more closely than the single-factor model as indicated by the significant $\Delta\chi^2$ test ($\Delta\chi^2 = 1{,}790.84$, $p < .0001$). Although the three-factor model fit the data more closely than the single-factor model, the three-factor model still fit the data relatively poorly as indicated by the CFI (.895) and TLI values (.882); however, the RMSEA (.039) indicated close fit to the data. The six-factor model fit the data more closely than the three-factor model as indicated by the significant $\Delta\chi^2$ test ($\Delta\chi^2 = 1{,}112.88$, $p < .0001$), and, in general, fit the data closely according to all of the alternative fit statistics (CFI = .962, TLI = .956, RMSEA = .024). Figures 1 and 2 display diagrams representing the cross-validated three- and six-factor models. Standardized factor loadings are shown in the diagrams.

3.2.1 | Factor intercorrelations

In the three-factor model, the latent factors were moderately correlated: $r = .46$ (school-based involvement with home-based involvement), $r = .33$ (school-based involvement with academic socialization), and $r = .30$ (home-based involvement with academic socialization). In the six-factor solution, correlations between factors were slightly more varied ranging from .16 to .70. Table 2 presents the intercorrelations between the six latent factors. The school–parent communication factor was highly correlated with school activities ($r = .70$) and activities at home ($r = .60$), and school activities was highly correlated with activities at home ($r = .65$). The relationship between school–parent communication and parent–child communication was small ($r = .20$), as was the relationship between parent–child communication and parental aspirations ($r = .18$).

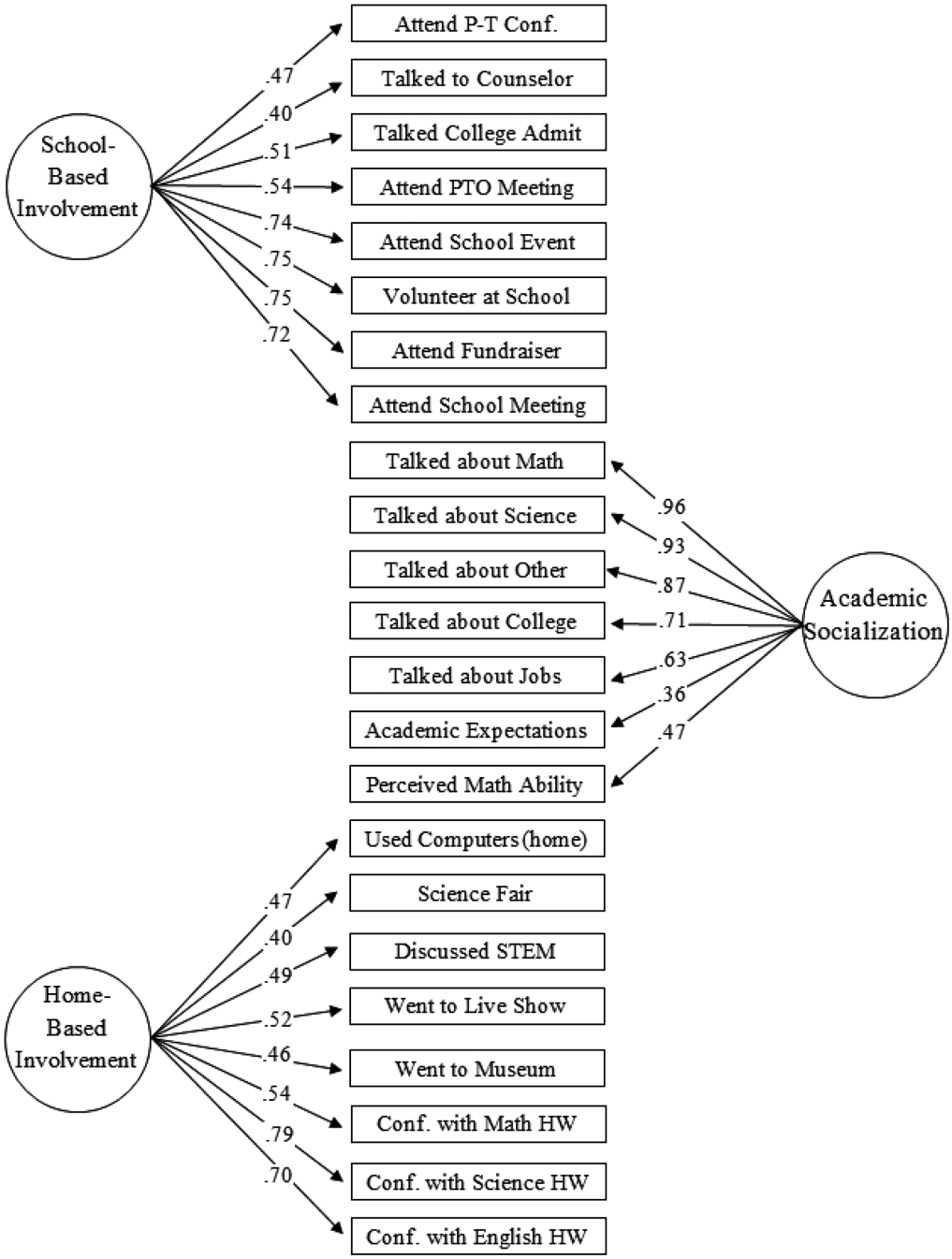


FIGURE 1 Correlated three-factor model diagram

3.2.2 | Pattern and structure coefficients

Pattern and structure coefficients for the cross-validated six-factor model are reported in Table 3. Pattern coefficients (i.e., factor loadings) ranged from .50 to .64 for school–parent communication, .55 to .77 for attending school activities, .65 to .96 for parent–child communication, .64 to .95 for parental aspirations, .49 to .63 for educational activities at home, and .64 to .93 for homework support. Structure coefficients for two items indicated a potential "misplaced

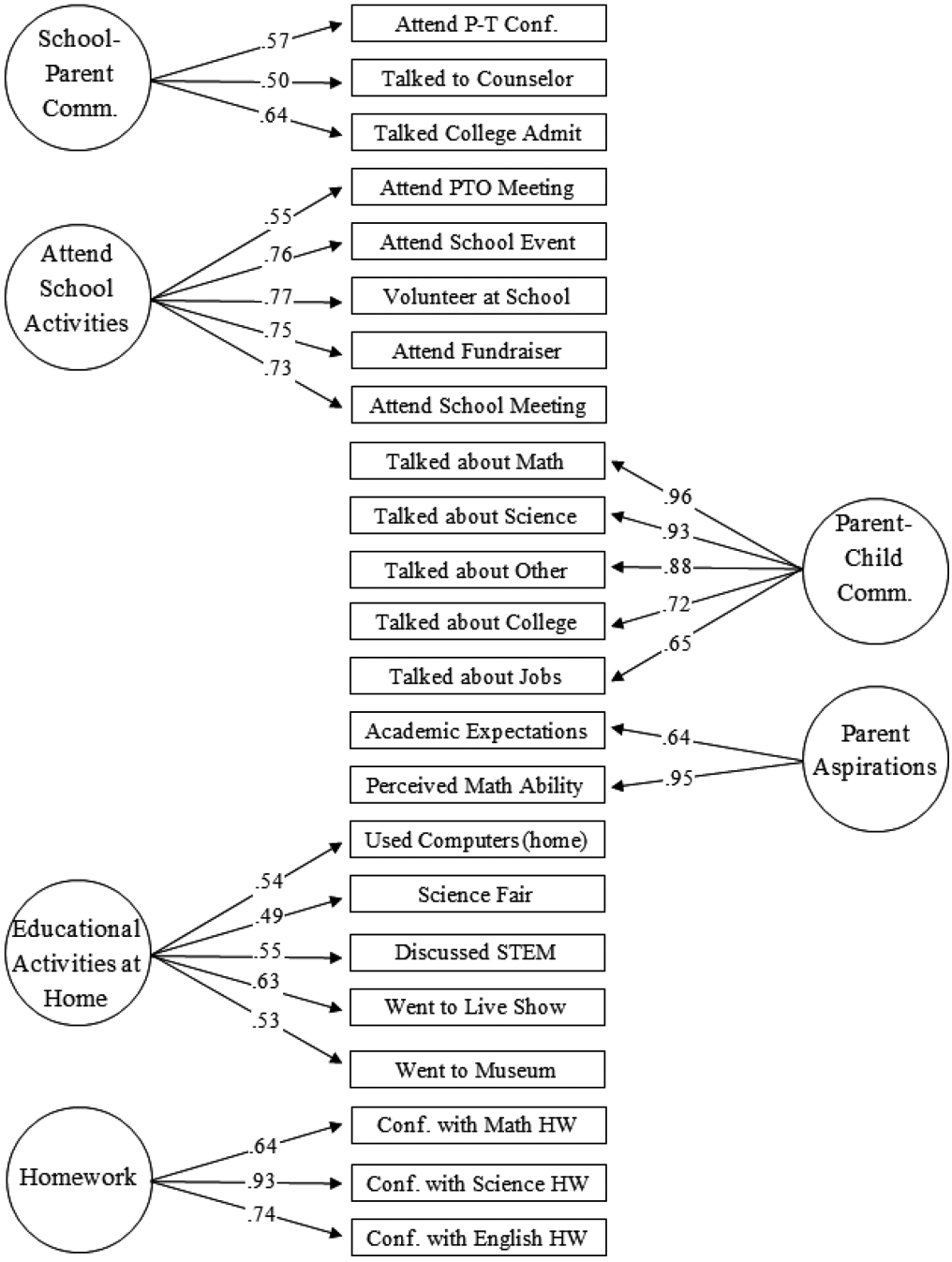


FIGURE 2 Correlated six-factor model diagram

interpretation of factors" (Graham et al., 2003). The item related to talking with a school counselor was specified to load onto the *school–parent communication* factor, but exhibited a structure coefficient (r_s = .50) lower than several items that loaded onto the *school activities*. This finding suggests that perhaps the two school-related factors are not entirely distinguishable from one another or that there is more complex inter-relation between the indicators of the school-related factors.

TABLE 2 Factor correlation matrix for the cross-validated six-factor CFA model

	School–Parent Comm.	School Activities	Parent–Child Comm.	Parent Aspirations	Activities at Home	Homework Support
School–parent comm.	1					
School activities	.70	1				
Parent–child comm.	.20	.31	1			
Parent aspirations	.18	.33	.31	1		
Activities at home	.60	.65	.33	.43	1	
Homework	.27	.21	.16	.28	.38	1
Coefficient omega	.59	.84	.92	.79	.68	.82

TABLE 3 Pattern and structure coefficients for the cross-validated six-factor model

	School–Parent Comm.		School Activities		Parent–Child Comm.		Parent Aspirations		Activities at Home		Homework Support	
	λ	r_s	Λ	r_s	λ	r_s	λ	r_s	λ	r_s	λ	r_s
Attended a parent–teacher conference	.57	.57	–	.40	–	.11	–	.10	–	.34	–	.15
Talked with a school counselor	.50	**.50**	–	.35	–	.10	–	.09	–	.30	–	.14
Talked with someone from college admission	.64	.64	–	.45	–	.13	–	.12	–	.38	–	.17
Attended a parent–teacher organization meeting	–	.39	.55	.55	–	.17	–	.18	–	.36	–	.12
Attended a school event	–	.53	.76	.76	–	.24	–	.25	–	.49	–	.16
Volunteered at the school	–	.54	.77	.77	–	.24	–	.25	–	.50	–	.16
Attended a school fundraiser	–	.53	.75	.75	–	.23	–	.25	–	.49	–	.16
Attended a school meeting	–	.51	.73	.73	–	.23	–	.24	–	.47	–	.15
Talked to child about math	–	.17	–	.32	.96	.96	–	.30	–	.32	–	.15
Talked to child about science	–	.17	–	.31	.93	.93	–	.29	–	.31	–	.15
Talked to child about other subject	–	.16	–	.29	.88	.88	–	.27	–	.29	–	.14
Talked to child about college	–	.13	–	.24	.72	.72	–	.22	–	.24	–	.12
Talked to child about jobs	–	.12	–	.21	.65	.65	–	.20	–	.21	–	.10
Academic expectations for child	–	.12	–	.21	–	.20	.64	.64	–	.28	–	.18
Perceived ability of child in math	–	.17	–	.31	–	.29	.95	.95	–	.41	–	.27
Used a computer with child	–	.32	–	.35	–	.18	–	.23	.54	.54	–	.21
Attended the science fair	–	.29	–	.32	–	.16	–	.21	.49	**.49**	–	.19
Helped with science fair project	–	.33	–	.36	–	.18	–	.24	.55	.55	–	.21
Discussed STEM with child	–	.38	–	.41	–	.21	–	.27	.63	.63	–	.24

(Continues)

TABLE 3 (Continued)

	School–Parent Comm.		School Activities		Parent–Child Comm.		Parent Aspirations		Activities at Home		Homework Support	
Went to museum	–	.32	–	.34	–	.17	–	.23	.53	.53	–	.20
Confidence in helping with math homework	–	.17	–	.13	–	.10	–	.18	–	.24	.64	.64
Confidence in helping with science homework	–	.25	–	.20	–	.15	–	.26	–	.35	.93	.93
Confidence in helping with English homework	–	.20	–	.16	–	.12	–	.21	–	.28	.74	.74

λ = pattern coefficient; r_s = structure coefficient.

Note. Bolded structure coefficients indicate potentially problematic items.

The other structure coefficient that represents a potential interpretation problem was for the item that asked about whether or not a parent attended the science fair ($r_s = .49$). Several items specified to load onto the *school activities* factor had similar or slightly higher structure coefficients with the *home activities* factor. This, again, may suggest that these two factors are not entirely distinguishable from one another or that the set of indictors with high structure coefficients are influence by both latent factors.

3.2.3 | Factor reliability

Table 2 lists the coefficient omega estimates for the cross-validated CFA model. Reliability estimates ranged from .59 (school–parent communication) to .92 (parent–child communication). School–parent communication ($\omega = .59$) and home activities ($\omega = .68$) factors exhibited the lowest reliability, whereas parent–child communication ($\omega = .92$) and school activities exhibited the highest reliability ($\omega = .84$). Point estimates of reliability for the school–parent communication and home activities factors indicate that the reliability of the "observed" score for these two factors is less than acceptable when compared to the guidelines proposed by Nunnally and Bernstein (1994). However, it is important to keep in mind that the goal of this study was to examine the structure of the latent factors to better understand the usefulness of different potential frameworks of parental involvement with secondary students. At this point we are not advocating for using manifest scale scores for the domains, as one would for an assessment.

4 | DISCUSSION

Although numerous studies have been conducted to understand the role of parental involvement on a child's educational outcomes (Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2003, 2005, 2007, 2012), comparatively minimal research has investigated the psychometric properties of the measurement of parental involvement for secondary students. Typically, researchers include one or two items to assess parental involvement in general, or a parental involvement domain, or use assessments developed by individual researchers (Hill & Tyson, 2009; Park & Holloway, 2013; Punter et al., 2016). To better understand the psychometric properties of commonly used parental involvement frameworks with older students, this research proposed to examine the psychometric properties of Hill and Tyson's (2009) three-domain framework (*school-based*, *home-based*, and *academic socialization*) as well as a more nuanced six-factor model of their framework using a large, national dataset of ninth graders and their parents.

One of the unique goals of this study was to include multiple variables to simultaneously assess each of the six subdomains of parental involvement. Encouragingly, the final version of the three-factor model had at least seven items assessing the each of the three domains and the six-factor model ranged from two to five items per subdomain. However, as is often the case, several of the originally included variables did not have adequate psychometric properties to remain in a subscale. Although these excluded variables were noted in the results, it is important to point out that the homework domain included only information about the parents' confidence in helping with math, science, or English homework. The item about the frequency with which parents helped with homework demonstrated a weak association with the latent factor and was excluded from the final models. This is intriguing, given the literature finding of poor evidence that parental help with homework is related to academic achievement for secondary students (Froiland et al., 2013; Hill & Tyson, 2009; Patall et al., 2008; Shumow & Miller, 2001).

Across the parental involvement variables, parents indicate a range of parental involvement levels with secondary students. Items with the endorsements of 75% or higher were contained in all three of the Hill and Tyson (2009) domains: *school-based involvement* (attend a school meeting); *home-based involvement* (doing something on a computer with a child); *academic socialization* (talk to child about college and talk to child about jobs). Low levels of parental involvement were found across the domains as well, with 26% of parents likely to volunteer at school, 16.4% to attend a science fair, and nearly 50% of parents reported helping their child with homework less than 1 day per week. This

finding of low rates of parental help with homework suggests that homework support works differently with secondary students compared to elementary students, and that it may not be as useful of domain for older students as it is with younger students. In all, reports of parental involvement were fairly moderate, suggesting that there was a wide variety of types of parental involvement.

With regard to the empirical evidence for the fit of models, the single-factor model fit poorly, the three-factor model fit the data better than the single-factor model, but still fit the data relatively poorly, and the six-factor model fit the data acceptably. When looking at the three-factor model, the pattern coefficients ranged from .40 to .75 for *school-based involvement*, .40 to .79 for *home-based involvement*, and .36 to .96 for *academic socialization*, indicating fairly low loadings for several variables across the three domains. Factors loadings were similar for the six-factor model with a range of .50–.64 for *school–parent communication*, .55–.77 for *attending school activities*, .65–.96 for *parent–child communication*, .64–.95 for *parental aspirations*, .49–.63 for *educational activities at home*, and .64–.93 for *homework support*. The range of factor loadings was similar for an assessment of parental involvement in early childhood (Bulotsky-Shearer, Bouza, Bichay, Fernandez, & Hernandez, 2016). In all, the factor loadings were fairly strong for most of the six-factor model, with school–parent communication and educational activities at home demonstrating lower loadings. The reasonable factor loadings and the improved goodness of fit for the more specific conceptualization of parental involvement suggests that future research may benefit from considering the more narrow aspects of parental involvement with high school students, and going beyond the distinction of two or three factors often presented conceptually (e.g., Hill & Tyson, 2009; Walker et al., 2005).

Further support for the six-factor model was found when examining correlations among the factors. For example, while the subdomain of *homework* had its highest correlation with conceptually related *activities at home* ($r = .38$), the *activities at home* subdomain was most highly correlated with *school activities* ($r = .65$) and *school/parent communication* ($r = .60$). Thus, focusing on broad categories like home-based or school-based involvement might obscure important nuances. This is supported by other researchers that have also examined the role of more narrow subdomains (e.g., Hill & Tyson, 2009; Ma, 1999; Park & Holloway, 2013). Thus, the six-factor conceptualization allows for more nuanced variations among the subdomains that may be helpful when assessing parental involvement with high school students. This research also supports a comprehensive assessment of parental involvement instead of focusing on only a single subdomain. As many of the subdomains are weakly correlated, it would be beneficial for researchers to assess multiple subdomains so as to gain a more comprehensive assessment of parental involvement. If researchers were able to more consistently use a similar six-factor framework for assessing parental involvement, then the field could gain more reliable information regarding the roles of specific subdomains, and how the importance of these domains might change (e.g., age of student, family demographics). Future research into the development of a comprehensive parental involvement in school measure for secondary students, based on the six subdomain framework, would be a valuable addition to the field. With regard to school personnel, the finding that the six subdomain framework performed better than the three or single factor suggests that considering specific types of parental involvement in school is important to improving student outcomes. Additional research is needed to determine which subdomains of parental involvement are the most predictive of improved outcomes for students and to develop interventions to increase specific subdomains of parental involvement in school for secondary students.

5 | LIMITATIONS

One of the primary limitations of the secondary data analysis is that the inclusion of variables was limited to those included in the HSLS:09 dataset. Although the parental involvement variables included in the HSLS:09 are identical or very similar to variables included in other parental involvement research (e.g., Hill & Tyson 2009), the HSLS:09 dataset had a STEM focus, so the variables reflected this content perhaps more so than other datasets might. It would be helpful if future research could include more general academic and home-based activities as indicators of parental involvement to see how the six-factor structure compares to models using STEM activities as indicators. Nonetheless, only eight of 24 variables (33%) had a math or science content, so the variables are still fairly comprehensive. Further, while the

number of items per domain was good for a secondary data analyses, the domain of parental aspirations contained only two items, and two other domains were assessed by three items. It would be helpful if future research could examine the inclusion of additional variables in the subdomains.

6 | CONCLUSIONS

In sum, these findings, using a large, nationally representative dataset, provide empirical evidence of a six-factor conceptualization of parental involvement for secondary students. It extends beyond the primary home and school-based conceptualizations popular with models for younger students (Epstein, 1987; Walker et al., 2005) to incorporate the construct of academic socialization (e.g., Hill & Tyson, 2009). These distinctions in parental involvement are essential to better reflect changing roles of parental involvement in secondary school in comparison to elementary school. Additional work needs to be taken to examine how the subdomains perform with subgroups of populations like student grade, family social economic status (SES), parental ethnicity, and student disability. The use of more consistent and empirically based frameworks for parental involvement with secondary students could help reduce the prevalence of mixed findings with the more general conceptualizations of parental involvement. Moreover, careful examination of subdomains of parental involvement can move the field forward to targeting strategies to improve specific types of parental involvement in schools most likely to help secondary students to succeed academically.

REFERENCES

Balli, S. J., Demo, D. H., & Wedman, J. F. (1998). Family involvement with children's homework: An intervention in the middle grades. *Family Relations*, *47*, 149–157. Retrieved from https://doi.org/10.2307/585619

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, *67*, 1206–1222.

Benner, A. D., Boyle, A. E., & Sadler, S. (2016). Parental involvement and adolescents' educational success: The roles of prior achievement and socioeconomic status. *Journal of Youth and Adolescence*, *45*, 1053–1064. Retrieved from https://doi.org/10.1007/s10964-016-0431-4

Bentler, P. M., & Yuan, K. -H. (2000). On adding a mean structure to a covariance structure model. *Educational and Psychological Measurement*, *60*, 326–339.

Bhargava, S., & Witherspoon, D. (2015). Parental involvement across middle and high school: Exploring contributions of individual and neighborhood characteristics. *Journal of Youth and Adolescence*, *44*(9), 1702–1719. Retrieved from https://doi.org/10.1007/s10964-015-0334-9

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.

Bulotsky-Shearer, R. J., Bouza, J., Bichay, K., Fernandez, V. A., & Hernandez, P. G. (2016). Extending the validity of the Family Involvement Questionnaire-short form for culturally and linguistically diverse families from low-income backgrounds. *Psychology in the Schools*. Advance online publication, *35*(9), 911–925. Retrieved from https://doi.org/10.1002/pits.21953

Byrne, B. M. (1994). *Structural equation modeling with EQS and EQS/Windows*. Thousand Oaks, CA: Sage.

Connors, L. J., & Epstein, J. L. (1995). Parents and school partnerships. In M. H. Bornstein (Ed.), *Handbook of parenting, Vol. 4: Applied and practical parenting* (pp. 437–458). Hillsdale, NJ: Lawrence Erlbaum.

Cooper, H. M. (2001). *The battle over homework: Common ground for administrators, teachers, and parents.* Thousand Oaks, CA: Corwin Press.

DeBaryshe, B. D., Buell, M. J., & Binder, J. C. (1996). What a parent brings to the table: Young children writing with and without parental assistance. *Journal of Literary Research*, *29*, 495–513.

Deslandes, R., & Cloutier, R. (2002). Adolescents' perception of parental involvement in schooling. *School Psychology International*, *23*, 220–232.

Dunn, T. J., Baguley, T., & Brunsden, V. (2014). From alpha to omega: A practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology*, *105*, 399–412.

Eccles, J. S., & Harold, R. D. (1993). Parent-school involvement during the early adolescent years. *Teachers College Record*, *94*, 568–587.

Epstein, J. L. (1987). Toward a theory of family-school connections: Teacher practices and parent involvement. In K. Hurrelmann, F.-X. Kaufmann, & F. Lösel (Eds.), *Social intervention: Potential and constraints* (pp. 121–136). Oxford, England: Walter De Gruyter.

Every Student Succeeds Act of 2015, PL 114-95. (2015).

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review*, *13*, 1–22. Retrieved from https://doi.org/10.1023/A:1009048817385

Froiland, J. M., Peterson, A., & Davison, M. L. (2013). The long-term effects of early parent involvement and parent expectation in the USA. *School Psychology International*, *34*, 33–50. Retrieved from https://doi.org/10.1177/0143034312454361

Gorsuch, R. L. (1983). *Factor analysis*. Hillsdale, NJ: Erlbaum.

Graham, J. M., Guthrie, A. C., & Thompson, B. (2003). Consequences of not interpreting structure coefficients in published CFA research: A reminder. *Structural Equation Modeling, 10*, 142–153.

Grolnick, W. S., & Slowiaczek, M. L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development*, *65*, 237–252. Retrieved from https://doi.org/10.1111/j.1467-8624.1994.tb00747.x

Han, W., Leventhal, T., & Linver, M. R. (2004). The home observation for measurement of the environment (HOME) in middle childhood: A study of three large-scale data sets. *Parenting*, *4*, 189–210.

Harvard Family Research Project. (2007, Spring). *Family involvement in middle & high school students' education* (Issue Brief No. 3). Cambridge, MA: President & Fellows of Harvard College, Harvard Family Research Project.

Higgins, S., & Katsipataki, M. (2015). Evidence from meta-analysis about parental involvement in education which supports their children's learning. *Journal of Children's Services*, *10*, 280–290. Retrieved from https://doi.org/10.1108/JCS-02-2015-0009

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology*, *45*, 740–763. Retrieved from https://doi.org/10.1037/a0015362

Hoover-Dempsey, K. V., Battiato, A. C., Walker, J. M. T., Reed, R. P., DeJong, J. M., & Jones, K. P. (2001). Parental involvement in homework. *Educational Psychologist*, *36*, 195–209.

Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education? *Review of Educational Research*, *67*, 3–42.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55.

Jeynes, W. H. (2003). A meta-analysis: The effects of parental involvement on minority children's academic achievement. *Education & Urban Society*, *35*, 202–218. Retrieved from https://doi.org/10.1177/0013124502239392

Jeynes, W. H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education*, *40*, 237–269. Retrieved from https://doi.org/10.1177/0042085905274540

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban Education*, *42*, 82–110. Retrieved from https://doi.org/10.1177/0042085906293818

Jeynes, W. H. (2012). A meta-analysis of the efficacy of different types of parental involvement programs for urban students. *Urban Education*, *47*, 706–742. Retrieved from https://doi.org/10.1177/0042085912445643

Ma, L. (1999). Dropping out of advanced mathematics: The effects of parental involvement. *Teachers College Record*, *101*(1), 60–81.

McDonald, R. P. (1978). Generalizability in factorable domains: "Domain validity and generalizability." *Educational and Psychological Measurement*, *38*, 75–79.

McGill, R. K., Hughes, D., Alicea, S., & Way, N. (2012). Academic adjustment across middle school: The role of public regard and parenting. *Developmental Psychology*, *48*(4), 1003–1018.

Moon, U. J., & Hofferth, S. L. (2016). Parental involvement, child effort, and the development of immigrant boys' and girls' reading and mathematics skills: A latent difference score growth model. *Learning and Individual Differences*, *47*, 136–144.

Muthén, L. K., & Muthén, B. O. (1998–2014). *Mplus user's guide*. Los Angeles, CA: Muthén & Muthén.

Nunnally, B. H., & Bernstein, J. C. (1994). *Psychometric theory*. London, UK: McGraw-Hill.

Park, S., & Holloway, S. D. (2013). No parent left behind: Predicting parental involvement in adolescents' education within a sociodemographically diverse population. *Journal of Educational Research*, *106*, 105–119. Retrieved from https://doi.org/10.1080/00220671.2012.667012

Patall, E. A., Cooper, H., & Robinson, J. C. (2008). The effects of choice on intrinsic motivation and related outcomes: A meta-analysis of research findings. *Psychological Bulletin*, *134*, 270–300. Retrieved from https://doi.org/10.1037/0033-2909.134.2.270

Powell, D. R., Son, S. H., File, N., & Froiland, J. M. (2012). Changes in parent involvement across the transition from public school prekindergarten to first grade and children's academic outcomes. *Elementary School Journal*, *113*, 276–300.

Punter, R. A., Glas, C. A. N., & Meelissen, M. R. M. (2016). *Psychometric framework for modeling parental involvement and reading literacy*. New York, NY: Springer. Retrieved from https://doi.org/10.1007/978-3-319-28064-6

Reise, S. P., Scheines, R., Widaman, K. F., & Haviland, M. G. (2013). Multidimensionality and structural coefficient bias in structural equation modeling: A bifactor perspective. *Educational and Psychological Measurement*, *73*, 5–26.

Robinson, J. P., & Lubienski, S. T. (2011). The development of gender achievement gaps in mathematics and reading during elementary and middle school: Examining direct cognitive assessments and teacher ratings. *American Educational Research Journal*, *48*, 268–302.

Shumow, L., & Miller, J. D. (2001). Father's and mother's school involvement during early adolescence. *Journal of Early Adolescence*, *21*, 68–91.

Stapleton, L. M. (2008). Variance estimation using replication methods in structural equation modeling with complex sample data. *Structural Equation Modeling*, *15*, 183–210.

Thompson, B. (1997). The importance of structure coefficients in structural equation modeling confirmatory factor analysis. *Educational and Psychological Measurement*, *57*, 5–19.

Useem, E. L. (1992). Middle schools and math groups: Parents' involvement in children's placement. *Sociology of Education*, *65*, 263–279.

Walker, J. M. T., Wilkins, A. S., Dallaire, J. P., Sandler, H. M., & Hoover-Dempsey, K. V. (2005). Parental involvement: Model revision through scale development. *Elementary School Journal*, *106*, 85–104.

Wang, M., & Sheikh-Khalil, S. (2014). Does parental involvement matter for student achievement and mental health in high school? *Child Development*, *85*(2), 610–625.

Wilder, S. (2014). Effects of parental involvement on academic achievement: A meta-synthesis. *Educational Review*, *66*, 377–397. Retrieved from https://doi.org/10.1080/00131911.2013.780009

Yu, C. (2002). *Evaluating cutoff criteria of model fit indices for latent variable models with binary and continuous outcomes* (Unpublished doctoral dissertation). University of California, Los Angeles, CA.

Zhang, Y., Haddad, E., Torres, B., & Chen, C. (2011). The reciprocal relationships among parents' expectations, adolescents' expectations, and adolescents' achievement: A two-wave longitudinal analysis of the NELS data. *Journal of Youth and Adolescence*, *40*(4), 479–489.

Zinbarg, R., Yovel, I., Revelle, W., & McDonald, R. (2006). Estimating generalizability to a latent variable common to all of a scale's indicators: A comparison of estimators for ω_h. *Applied Psychological Measurement*. *30*, 121–144

How to cite this article: Duppong Hurley K, Lambert MC, January SA, Huscroft D'Angelo J. Confirmatory factor analyses comparing parental involvement frameworks with secondary students. *Psychol Schs.* 2017;54:947–964. https://doi.org/10.1002/pits.22039

Copyright of Psychology in the Schools is the property of John Wiley & Sons, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

JOURNAL OF
Research on Adolescence

Society for Research on Adolescence
www.s-r-a.org

JOURNAL OF RESEARCH ON ADOLESCENCE, ***(*), 1–16

The Role of Mothers' Communication in Promoting Motivation for Math and Science Course-Taking in High School

Janet S. Hyde, Elizabeth A. Canning, Christopher S. Rozek, and Emily Clarke
University of Wisconsin—Madison

Chris S. Hulleman
University of Virginia

Judith M. Harackiewicz
University of Wisconsin—Madison

In the context of concerns about American youths' failure to take advanced math and science (MS) courses in high school, we examined mothers' communication with their adolescent about taking MS courses. At ninth grade, U.S. mothers (n = 130) were interviewed about their responses to hypothetical questions from their adolescent about the usefulness of algebra, geometry, calculus, biology, chemistry, and physics. Responses were coded for elaboration and making personal connections to the adolescent. The number of science, technology, engineering, and mathematics courses taken in 12th grade was obtained from school records. Mothers' use of personal connections predicted adolescents' MS interest and utility value, as well as actual MS course-taking. Parents can play an important role in motivating their adolescent to take MS courses.

In 2009, President Obama launched his Educate to Innovate campaign to promote excellence in science, technology, engineering, and mathematics (STEM) education. This is but one example of initiatives in many Western nations to encourage student interest and to close gender gaps in STEM; the VHTO, the Dutch national organization on girls and women in science and technology, is another example. In the United States, these initiatives are thought to be crucial to maintaining the nation's strength in scientific discovery and technological innovation (National Science Board, 2010). Many of these initiatives ask how a nation, community, school, or family can motivate youth to pursue STEM courses and careers. Most of the initiatives and research have focused on the role of schools in achieving these goals with adolescents (e.g., Beilock, Gunderson, Ramirez, & Levine, 2010; Hulleman & Harackiewicz, 2009; Yeager & Walton, 2011). We argue that parents are a largely untapped, and potentially powerful, resource for increasing students' STEM engagement (Harackiewicz, Rozek, Hulleman, & Hyde, 2012). In this article, we focus on the role of parents and, in particular, the role of mothers and their communications with their adolescent son or daughter about mathematics and the sciences. We consider how frequently mothers communicate about these topics, how skillful they might be in their communication about the value of STEM courses, and whether the communication variables are actually predictive, using a longitudinal design, of students' later interest in math and science (MS) and their actual course-taking in the senior year of high school.

The Importance of Motivating Students in Science and Mathematics

In the United States, substantial numbers of students do not take essential mathematics and science classes. For example, 10% of ninth graders

This research was supported by the National Science Foundation (DRL 0814750, DRL 1252463, and DGE-1256259) and by the Institute for Education Sciences, U.S. Department of Education (Grants R305C050055 and R305B090009). We thank Cara Bauer, Jiliana Boston, Claire Johnson, Kerstin Krautbauer, Dan Lamanna, Angwei Law, Maria Mens, Michael Noh, Stefan Slater, and Ryan Svoboda for their help conducting this research, and we thank the members of our advisory board (Jacquelynne Eccles, Adam Gamoran, Jo Handelsman, Jenefer Husman, Dominic Johann-Berkel, Ann Renninger, and Judith Smetana) for their guidance. We are especially grateful to the families of the Wisconsin Study of Families and Work for their loyal participation over the years.

Requests for reprints should be sent to Janet S. Hyde, Department of Psychology, University of Wisconsin—Madison, 1202 W. Johnson St., Madison, WI 53706. E-mail: jshyde@wisc.edu

© 2016 The Authors
Journal of Research on Adolescence © 2016 Society for Research on Adolescence
DOI: 10.1111/jora.12253

take no mathematics and 18% take no science (National Science Foundation, 2014). These statistics vary strikingly as a function of parents' educational level. Among students whose parents had less than a high-school education, 18% took no mathematics in ninth grade, compared with 7% for those whose parents had a bachelor's degree. Moreover, high-school STEM courses are gateways to college STEM majors and, later, STEM careers. Therefore, in the research reported here, we focus on the important outcome of students' MS course-taking in 12th grade and factors that are linked to higher levels of course-taking.

A related concern is the gender gap in STEM. In the United States, the science and engineering workforce is largely White and male. Among those working in science and engineering occupations in 2010, 51% were White men, 18% were White women, 13% were Asian men, and 5% were Asian women, with smaller percentages for men and women from underrepresented minorities (National Science Foundation, 2013). This gender gap is foreshadowed by gender gaps in BA, MA, and PhD degrees earned, with women the most underrepresented in physics, computer sciences, and engineering, although they are not underrepresented at the BA level in biology or mathematics. Insofar as high school STEM courses are typically necessary for pursuing these majors at the university level, it is important to understand factors that may discourage or encourage girls, in particular, in taking STEM courses in high school.

Theoretical Framework

This research is rooted in expectancy-value theory and augmented with the parent socialization model, as well as Rogoff's theorizing about the importance of the social environment for children's thinking. According to expectancy-value theory, if a person is to take on a challenging task, such as taking physics in high school or majoring in engineering, she or he must (1) expect to succeed at the task and (2) value the task (Eccles-Parsons et al., 1983; Meece, Eccles-Parsons, Kaczala, Goff, & Futterman, 1982). Task value includes attainment value (how a task is related to one's identity), intrinsic value (interest in and enjoyment of the task), and utility value (UV, perceived usefulness of the task). The role of expectations for success in students' academic achievement and, in particular, their STEM achievement has been much studied and is well documented (e.g., Bleeker & Jacobs, 2004; Briley, Harden, & Tucker-Drob, 2014; Simpkins, Fredricks, & Eccles, 2015; Watt et al., 2012). Here we focus on the value side of the theory, which has been less studied. In addition, recent experimental work, described below, demonstrates the importance of UV in promoting academic outcomes. In particular, we focus on interest and UV as motivators of STEM course-taking, while still capturing one aspect of expectancies, mothers' perceptions of the adolescent's math ability.

The extant prior research, using both cross-sectional correlational designs and longitudinal designs, supports the hypothesis that perceived value, particularly intrinsic and UV, is related to STEM course-taking (e.g., Eccles, Barber, Updegraff, & O'Brien, 1998; Simpkins, Fredricks, & Eccles, 2012; Watt, 2005). For example, Wigfield (1993) found that students' math UV predicted intentions to enroll in more mathematics courses, above and beyond measures of mathematical ability and math self-concept. Similarly, in another study, math UV predicted the number of mathematics courses taken in high school, controlling for grade point average (GPA) and a measure of mathematical ability (Updegraff, Eccles, Barber, & O'Brien, 1996). Moreover, experimental research shows that, when students' perception of the UV of mathematics and science is increased, their course-taking increases (Harackiewicz et al., 2012; Rozek, Hyde, Svoboda, Hulleman, & Harackiewicz, 2015).

The parent socialization model extends expectancy-value theory to examine the crucial role of parents (Eccles, Freedman-Doan, Frome, Jacobs, & Yoon, 2000; Eccles-Parsons, Adler, & Kaczala, 1982). The model focuses on mechanisms such as parents serving as role models for their children and as socializers of their children's expectancies for success. There is much empirical support for the model. For example, in one study, mothers' estimates of their adolescent's ability to succeed in math-related careers significantly predicted career choices in MS in young adulthood (Bleeker & Jacobs, 2004). In another study, mothers' perceptions of their child's academic competence predicted the child's academic functioning (grades) a year later, but only for mothers who held entity theories of intelligence (Pomerantz & Dong, 2006).

The research is also rooted in Rogoff's (1990) theorizing that children's cognitive development is embedded in their social milieu, with parents being a crucial aspect of that milieu. According to this model, parents can support development by guiding children in problem solving and understanding new situations. This process has been called an

apprenticeship in thinking. Although most research in the Rogoff tradition has studied children (e.g., Rogoff, Turkanis, & Bartlett, 2001; for an exception, see Love & Hamston, 2003), certainly this same kind of learning continues into adolescence, as does guidance from parents. In adolescence, youth still look to parents for guidance regarding educational choices, such as course-taking, which provides an opportunity for such guided interactions with parents. For example, when discussing which math course their son or daughter should take next, parents can elaborate on why the math class would be useful for their adolescent's future. This elaboration can be more or less specific, and can be more or less personal to their teen's interests and future goals. Both aspects of these discussions—the specific elaboration and the personal connection—can have an impact on the adolescent's perception of the value of math and thus have an impact on motivation for course-taking. Rogoff emphasized the importance of the adult's sensitivity in supporting learning; sensitivity involves expanding or elaborating contingently on the child's ideas, in finely tuned interactions. Related research in mathematics education has established the effectiveness of personalization in fostering students' learning (Cordova & Lepper, 1996; Walkington, 2013; Walkington, Petrosino, & Sherman, 2013).

The Role of Parents

Although some have questioned whether parents actually do influence their children (e.g., Harris, 1995, 1998; Robinson & Harris, 2014), the preponderance of evidence indicates that parents do indeed have an influence (Briley et al., 2014; Harackiewicz et al., 2012; Vandell, 2000). In particular, expectancy-value theory highlights the importance of socializers such as parents to children's developing expectancies for success and task values (Chhin, Bleeker, & Jacobs, 2008; Eccles, Jacobs, & Harold, 1990; Eccles et al., 1993), and, as noted earlier, the parent socialization model expands on the nature of these influences.

Although research on links between parents' self-reported beliefs and children's academic beliefs and performance is extensive, only a handful of studies have examined parents' actual behaviors in relation to their children's academic outcomes. For example, in one study mothers' recorded science talk with their 9-year-olds predicted the child's reading comprehension for a science text 2 years later (Tenenbaum, Snow, Roach, & Kurland, 2005). Simpkins et al. (2012) found that several self-reported maternal behaviors (modeling, encouragement, provision of materials, and coactivity) mediated the relationship between mothers' and youths' beliefs and math course-taking; nonetheless, self-reports of behaviors are not the same as actual observations of behaviors. Huntsinger and colleagues have conducted studies designed to get at parents' behaviors in relation to their children's mathematics learning (Huntsinger & Jose, 2009; Huntsinger, Jose, Liaw, & Ching, 1997). As an example, in one study they interviewed Euro-American, Chinese-American, and Taiwan-Chinese mothers and fathers about how they facilitated their preschool or kindergarten child's development in mathematics (Huntsinger et al., 1997). The results indicated that, compared with the Euro-American parents, the Chinese-American parents gave more direct, formal mathematics instruction to their children, structured more time for mathematics practice, and encouraged their children more in mathematics-related activities. The amount of time that the child spent on math-related activities was derived from time diaries completed by the parents. The results showed that a combination of the amount of parents' teaching children and the child's time spent in math practice significantly predicted the child's tested math skills. Notably, none of these studies explicitly assessed parents' ability to communicate about the UV of mathematics and science classes with their child.

In a meta-analysis of links between parental involvement and middle-school youths' achievement, many types of involvement were assessed across the studies that were reviewed (Hill & Tyson, 2009). These included measures such as PTO involvement and checking homework. Only a small number of studies examined discussions between parents and youth about school, and specifically about choice of activities in school. Notably, the National Education Longitudinal Study obtained both parents' and youths' reports of variables such as discussions about high school and planning high-school programs. Several researchers have used these measures to predict academic outcomes (e.g., Desimone, 1999; Muller, 1995; Sui-Chi & Willms, 1996). In the Hill and Tyson (2009) meta-analysis, the correlation between overall parental involvement and academic achievement was only $r = .04$; however, the correlation between parents' academic socialization behaviors (e.g., communicating about the value of education, encouraging educational and occupational aspirations) and youths' academic achievement was $r = .39$, pointing to the

importance of this particular category of parents' behaviors.

A more recent meta-analysis also examined the role of parental involvement in students' academic achievement in primary and secondary school (Castro et al., 2015). The two largest correlations between parental involvement and academic achievement were parental expectations ($z = 0.22$) and communication with children about school issues ($z = 0.20$). The first effect speaks to parental socialization on the expectancy side of the expectancy-value model. The latter effect concerns parents' communications, broadly defined, and those communications are the topic of the current study.

Overall, then, past research, based on meta-analytic syntheses, indicates that parents' communications with their children about school issues are important and linked to students' academic achievement (Castro et al., 2015; Hill & Tyson, 2009). However, there is a paucity of research examining the nature of parents' communications and behavior with their children, particularly in regard to mathematics and science, and no studies have assessed parents' communications about the UV of mathematics and science.

Following from Rogoff's theory, if parents are to be effective at guiding their children's STEM course participation they must be able to elaborate answers in response to their children's statements about those courses, and they must display sensitivity by tailoring their response to the individual child. To capture these elements, we coded the extent of elaboration and personal connections that mothers displayed in response to hypothetical questions from their adolescent about the usefulness or UV of MS classes in high school. As noted earlier, research in mathematics education has established the effectiveness of personalization in fostering students' learning (Cordova & Lepper, 1996; Walkington, 2013; Walkington et al., 2013).

To our knowledge, this is the first study to capture parents' responses about these topics with adolescents.

The Current Study

The current study is embedded within a long-term longitudinal study, the Wisconsin Study of Families and Work (WSFW), which began in 1990–1991, when pregnant women were recruited for participation. The families were then followed until that child finished high school. The current study focuses on the adolescent years, using data collected from seventh grade through 12th grade.

As noted earlier, no prior research has examined parents' capacity to guide their adolescent's MS participation by providing sensitive and elaborated communications to their adolescent. We address this lacuna with data from interviews with mothers concerning the usefulness of math, biology, chemistry, and physics classes for their high-school student, in response to a hypothetical questioning of their usefulness from the adolescent. (We interviewed fathers as well but, despite our best efforts, the response rate was low. We therefore focus just on mothers here.) The interviews were conducted in the summer after ninth grade and were coded for both elaboration and personal connections to measure sensitivity. Later, in 10th grade, we obtained brief measures of the adolescents' interest and perceptions of the UV of MS courses, along with the mother's estimate of the frequency of mother–child conversations about these topics. At the end of 12th grade, we obtained high-school transcripts to derive an objective measure of the number of MS classes the adolescent had actually taken.

We ask the following questions. How capable are mothers at elaborating the usefulness of algebra, geometry, calculus, biology, chemistry, and physics to their adolescent? How well do mothers provide guidance, as evidenced by elaboration and by personalizing the communication to their child? Do elaboration and making personal connections work in different ways in their impact on adolescents' interests, perceptions of UV, and course-taking? Do mothers talk differently about these topics with daughters compared with sons? How frequently do mothers have conversations on these topics with their children? And finally, can these communication variables predict adolescents' later perceptions of the UV of and interest in STEM courses and, in turn, their actual enrollment in these courses in 12th grade?

To address this last question, structural equation modeling (SEM) was used to test a model in which the number of MS classes taken in 12th grade is predicted by mothers' estimate of the child's math ability, the mother's elaboration and personalization of the usefulness of MS for her child, the number of mother–child conversations about MS classes, and the adolescent's interest in and perceived UV of MS classes (Figure 1). Mother's education is included in the model because mother's education is a powerful predictor of children's academic performance (Melhuish et al., 2008) and because mother's level of education should be linked to her capacity to generate elaborated responses about the usefulness of MS

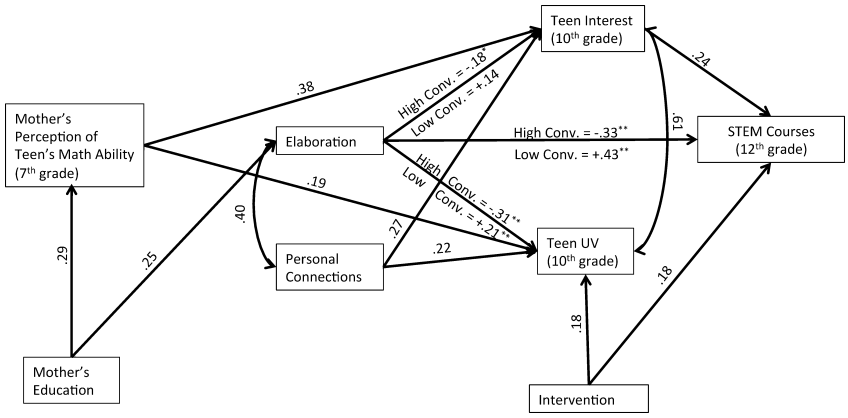


FIGURE 1 Empirical path model in which communication variables predict adolescents' interest, utility value, and math and science courses taken in 12th grade. Adolescent's gender was included as a covariate for all variables. Only significant paths are shown. All effects are standardized coefficients except for the interaction effects, which are unstandardized.

courses. Mother's perception of the adolescent's math ability, measured in seventh grade, is also included because it is a well-documented predictor of children's academic outcomes (e.g., Bleeker & Jacobs, 2004).

METHODS

Participants

The sample comprised families participating in the longitudinal WSFW (for details of recruitment, see Hyde, Klein, Essex, & Clark, 1995). At the time of original recruitment before the child was born, in 1991, 78% of the sample was from the Milwaukee Standard Metropolitan Statistical Area (SMSA) and the remaining 22% was from the Madison SMSA. Mothers' education ranged from 12 to 20 years, with a mean of 15.5 years (SD = 2.01) on a scale where 12 years is equivalent to a high-school diploma or GED completion.

The current sample consisted of 130 adolescents (63 girls, 67 boys), who attended ninth grade in the 2006–2007 academic year, and their mothers. Regarding ethnicity, 90.8% of the adolescents were White, 3.8% were African American, 0.8% were Hispanic, 3.8% were American Indian, 0.8% were Asian American, and 6.2% were biracial or multiracial. Although we recruited in Milwaukee County with the goal of increasing the ethnic diversity of the sample, two collaborations with minority-serving clinics fell through, yielding a sample that overrepresents Whites. Adolescents attended 108 different high schools. At the time of 12th-grade data collection, the mean age of participants was 18.7 (SD = 0.22).

Procedure

At the end of ninth grade (June 2007), mothers were interviewed by phone about the utility of six STEM subjects: algebra, geometry, calculus, biology, chemistry, and physics. Mothers were asked how they would talk with their teen about the usefulness of the topics. Specifically, they were asked to respond to the following hypothetical situation: "Imagine that [teen's name] comes home from school and says to you, '[Subject] is such a waste of time'. What would you say in response?" The question was repeated for each subject, and the interviews were transcribed for later coding. The questions were posed in an open-ended format to determine what mothers could actually produce for answers, rather than simply asking them to recognize good answers or rate how useful they thought a class might be. In total, 136 mothers were interviewed. However, six participants were excluded from analyses because they did not complete the conversations interview or did not answer a majority of the interview questions, leaving 130 mother–adolescent pairs in the analyses reported here.

Questionnaire data were collected from mothers and from adolescents in the summer following 10th grade. At the end of 12th grade, high-school transcripts were collected from the students' schools and were coded for STEM course-taking. In addition, because this study was embedded within a larger longitudinal project, a measure of the mother's perception of the adolescent's mathematical ability was available from seventh grade.

Starting in October 2007 (10th grade), an intervention designed to increase parental knowledge regarding STEM UV was administered to approxi-

mately half the participants (for more details, see Harackiewicz et al., 2012). Intervention materials identified potential connections between STEM fields and adolescents' current and future goals, as well as techniques for parents to use in communicating with their adolescent. The intervention materials consisted of a brochure mailed to parents in 10th grade, a second brochure mailed to parents in 11th grade, and a dedicated website made available in spring of 11th grade. Families were randomly assigned to the intervention group or a control group. The current article is not concerned with the intervention (which occurred after the interviews were conducted) and therefore the intervention is treated as a control variable.

Measures

Communication measures. Three variables assessed mother–child communication about STEM: number of conversations, elaboration of UV, and personal connections about UV.

The number of conversations that the mother had with her child regarding the UV of MS classes was self-reported by the mother in the summer after 10th grade. Two questions were used: "Since the start of 10th grade, how often have you had conversations with your teen about the usefulness of math classes?" and "Since the start of 10th grade, how often have you had conversations with your teen about the usefulness of science classes?" Response options were 0 conversations, 1–2 conversations, or 3 or more conversations. These two items were averaged to create an overall measure of number of STEM conversations (α = .80).

As noted earlier, the mother's tendencies to elaborate and respond sensitively to her child were assessed at the end of ninth grade with the following question: "Imagine that [teen's name] comes home from school and says to you, '[Subject] is such a waste of time'. What would you say in response?" with the question repeated for each STEM topic (algebra, geometry, calculus, biology, chemistry, and physics). Mothers' responses were then subjected to content analysis.

The *elaboration* measure assessed the depth and detail of the mother's communication about the UV of each topic. It was coded as 1 of 4 levels (see Table 1 for examples): *none* (mother did not generate a response), *useful nonspecific* (mother described value without referring to specific examples), *useful specific* (mother described value with specific examples), and *useful specific and elaborated* (mother described value elaborately and with specific examples). Responses concerning each STEM topic were coded separately by two independent coders (interrater reliability of 86%, discrepancies resolved by consensus) and then added together to create an overall elaboration score (α = .74).

TABLE 1
Categories Used in Coding Elaboration

	Definition	*Examples*
Level 0	Mother gave no response	
Level 1	Useful nonspecific	It will be important for her career and her future classes You're always going to use math in your daily life
Level 2	Useful specific	I think I'd have to talk to her about something I would know about chemistry, which would be organic chemistry or baking, and how you use chemistry in everyday life Biology is a foundation for a lot of different science, and especially behavioral sciences as well as other kinds of sciences
Level 3	Useful specific and elaborated	My neighbor is building a shed, wondering how much weight could this hold, whether a 2 × 4 or a 4 × 4. They had all these measurements because he's building it himself. And he was working on it and all that construction stuff relates to it Since I'm a carpenter, I demonstrated the importance of using trigonometry on laying out roof structures for houses and buildings using triangular shapes

Following in the Rogoff tradition, the extent to which a mother made *personal connections* to her child's life when explaining the value of each topic was used as a measure of sensitivity of communication. It was measured by a count of the number of examples using personal references to the child, across STEM subjects (interrater correlation was r = .84). Most often, the mother referred to ways in which MS had value for the adolescent's career, everyday life, past experiences, interests, or ability in the topic. Examples of personalization included, "She does construction projects with her dad, and they'll use algebra to calculate different things. And they'll use different math concepts in their project. And so I would probably remind her of when she's used that," and "Most likely you're going to be in some sort of science field, and you're going to need to have had calculus."

In addition, for descriptive purposes, the personal connections offered by mothers were coded as to the type of personal connection and whether the mother related usefulness to (1) the adolescent's desired *career* (e.g., "She's definitely going to need biology, she's interested in going into the health field, that's definitely a requirement"), (2) *everyday life*, relating the value of the subject to its use in everyday activities or as general knowledge (e.g., "Angles, things when you're going to paint your room desk. Might help us to know the right corners and angles and measurements and square footage. Stuff like that will help you in your everyday life"); (3) *ability*, relating the value of the subject to the adolescent's ability or talent in the subject ("I would try to push him into sciences and math because I think he's good at it. And he probably would do good in it"); (4) *past experiences*, relating the value of the subject to something the adolescent has experienced in the past (e.g., "And actually when he was a little kid we used to talk about this, how baking is chemistry, baking is science. So, I would go right back to 'Hmm, remember when you were eight and we had this conversation.'"); or (5) intrinsic value or *interests* (e.g., "Physics is a lot of math, he likes math, and they build on each other").

Mother's perception of adolescent's math ability. The mother's perception of her child's math ability was measured when the adolescent was in seventh grade, with the following three items originated by Eccles (Frome & Eccles, 1998): "How good is your child at math?", "How good is your child at math, compared to other kids?", and "How much natural talent does your child have in math?" Each was rated on a tailored 1–7 scale and items were averaged (α = .92).

Adolescent's STEM interest and UV. In the summer following 10th grade, we collected brief measures of the adolescent's *interest* in five STEM topics (algebra, geometry, biology, chemistry, and physics), with one item per subject ("I think [topic] is interesting."). Each item was rated on a 1–5 scale (*strongly disagree–strongly agree*) and ratings were averaged.

The adolescent's perception of the *UV* of five STEM topics (algebra, geometry, biology, chemistry, and physics) was measured with one item per subject ("In general, how useful is what you learn in [topic]?"). Each item was rated on a 1–7 scale (*not very useful–very useful*) and the items were averaged to form the measure of STEM UV.

Cronbach's alpha was computed for both the interest and the UV scales across all five STEM topics. The items about biology, however, decreased internal consistency, meaning that interest in biology did not correlate well with interest in the other topics. This may have occurred because biology is generally not as mathematical as chemistry and physics. After removal of the biology item from each scale, α = .78 for interest and .86 for UV.

STEM courses taken. High-school transcripts were obtained for 123 (61 girls, 62 boys) of the 130 students, who attended 108 different high schools. (Transcripts were missing in cases such as home schooling.) We coded transcripts for the number of semesters of mathematics and science taken during 12th grade. Mathematics and science courses are more likely to be optional and a matter of choice in 12th grade, by comparison with earlier grades, when they are more likely to be required. Thus, this 12th grade measure should be sensitive to students' STEM motivation. All transcripts were coded independently by two coders with an interrater reliability of 95%. In the case of disagreement about the STEM content of the courses, the schools' websites and course descriptions were consulted and disagreements were resolved by consensus.

RESULTS

Descriptive Analyses

Zero-order correlations and descriptive statistics for major variables are shown in Table 2. For number of conversations, 13% of mothers reported that they did not have any conversations with their child about the usefulness of math classes during 10th grade and 15.3% did not have any conversations about science classes. Approximately 41% of mothers reported having 1–2 such conversations about math classes (44% about science classes) and 46% reported having three or more utility conversations about math classes (41% about science classes). Number of conversations about math or science did not differ by adolescent's gender, t (128) = .46, p = .65.

The degree to which mothers gave elaborated responses in their interviews differed by STEM course (see Table 3). Mothers gave the most elaborated responses for biology (M = 1.45, SD = 0.88) and chemistry (M = 1.38, SD = 1.01) and the least elaborated responses for physics (M = 0.86, SD = 0.95) and calculus (M = 0.70, SD = 0.76).

TABLE 2
Zero-Order Correlations and Descriptive Statistics for Major Variables

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1. Mothers' education	–							
2. Mothers' perception of teens' math ability	0.29**	–						
3. Number of conversations	0.10	0.05	–					
4. Personal connections	0.20*	0.19*	0.17*	–				
5. Elaboration	0.32**	0.18*	0.19*	0.43**	–			
6. Teen interest (10th grade)	0.09	0.40**	−0.07	0.28**	0.10	–		
7. Teen UV (10th grade)	0.09	0.20*	0.03	0.20*	0.05	0.65**	–	
8. STEM courses (12th grade)	0.13	0.17	−0.01	0.16	0.17	0.27**	0.22*	–
Boys *M* (*SD*)	15.21 (1.80)	5.52 (1.15)	1.28 (0.61)	2.22 (1.22)	6.69 (3.52)	3.23 (1.12)	4.62 (1.52)	3.36 (1.70)
Girls *M* (*SD*)	15.60 (2.33)	5.37 (1.11)	1.33 (0.65)	2.59 (1.42)	6.60 (3.71)	3.10 (1.02)	4.51 (1.36)	3.73 (1.82)
d	−0.19	0.13	−0.08	−0.28	0.02	0.12	0.08	−0.21

Note. UV = utility value. None of the mean gender differences were significant. *d* is computed as the mean for males minus the mean for females divided by the within-groups *SD*. Therefore, positive values reflect higher scores for boys.
*$p < .05$.; **$p < .01$.

Elaboration scores did not differ by adolescent's gender $t(128) = .13$, $p = .90$.

Overall, 62.3% of mothers made at least one personal connection, and on average, mothers made 2.4 connections across the entire interview. Of these personal connections, 33.9% were everyday examples, 32% were connections to the adolescent's intended career, 17.7% were related to the adolescent's interests, 9.4% were connections to past experiences, and 7.2% were connections to the adolescent's ability (see Figure 2). There were no gender differences in the frequency of personal connections for any of these categories, with one exception. Connections to past experiences were more likely to be articulated for girls (19%) than boys (8%), χ^2 (1, $N = 130$) = 3.83, $p = .05$.

On average, students chose to take approximately 3.54 ($SD = 0.95$) STEM courses during the 12th grade. Of these STEM courses, 53.4% were math and 46.6% were science courses. Approximately 35.8% of students took physics, 30.9% took precalculus, 26.0% took calculus, 23.6% took biology (including human anatomy and physiology, microbiology, and marine biology), and 16.3% took statistics (see Table 4). Other courses included advanced algebra, trigonometry, environmental science, earth science, and chemistry.

Overview of SEM Analyses

We used structural equation modeling in Mplus (Version 7.3; Muthén & Muthén, 1998–2012) with maximum-likelihood estimation to examine the processes by which adolescent's gender (coded 0 for females and +1 for males), mother's education, mother's perception of adolescent's math ability, number of UV conversations, personal connections, elaboration, and the intervention (coded 0 for control and +1 for treatment) predicted adolescents' interest and UV in 10th grade, and STEM course-taking in 12th grade. Mother's education and mother's perception of adolescent's math ability were used to predict the conversation variables (i.e., number of UV conversations, personal connections, and elaboration). All two-way and three-way interactions were computed and nonsignificant interactions were trimmed from the model. Structural paths that were nonsignificant were set to zero to achieve the final model (see Figure 1). Adolescent's gender was included as a covariate for all variables. Cases with missing data were included by using full information maximum-likelihood methods (Arbuckle, 1996).

The comparative fit index (CFI) and the root-mean-square error of approximation (RMSEA)

TABLE 3
Distribution of Elaboration Scores

Elaboration	*Algebra (%)*	*Geometry (%)*	*Biology (%)*	*Chemistry (%)*	*Physics (%)*	*Calculus (%)*
None	24.6	28.5	15.4	22.3	44.6	46.5
Useful, nonspecific	50.8	40.0	35.4	33.1	32.3	38.8
Useful, specific	15.4	17.7	38.5	28.5	15.4	13.2
Useful, specific and elaborated	9.2	13.8	10.8	16.2	7.7	1.6
M (*SD*)	1.09 (0.88)	1.17 (1.00)	1.45 (0.88)	1.38 (1.01)	0.86 (0.95)	0.70 (0.76)

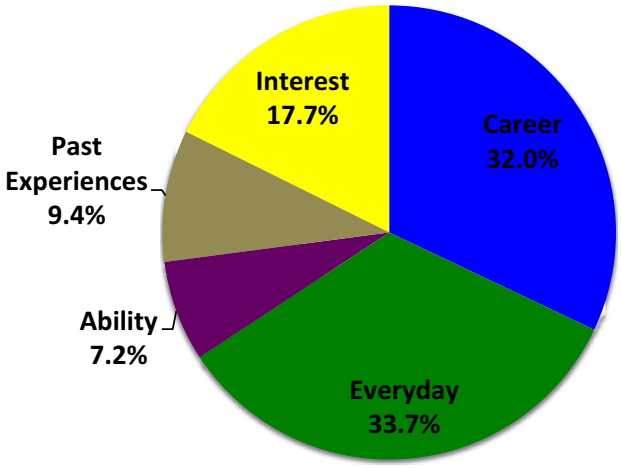


FIGURE 2 Distribution of personal connections made by mothers.

TABLE 4
Percentage of Students Who Took Math and Science Courses in 12th Grade

Math Courses (%)		*Science Courses (%)*	
Precalculus	30.9	Physics	35.8
Calculus	26.0	Biology	23.6
Statistics	16.3	Other science	12.2
Advanced algebra	12.2	Environmental science	5.7
Trigonometry	9.8	Earth science	5.7
Other math	8.1	Chemistry	4.1

Note. AP and IB courses are included in these numbers.

were the primary criteria used to determine that the model exhibited satisfactory fit ($\chi^2 = 26.31$, $df = 22$, RMSEA = 0.039, CFI = 0.98). CFI values greater than 0.95 and RMSEA values of less than 0.06 are typically needed before it can be concluded that there is a good fit between the model and the observed data (Hu & Bentler, 1999). Overall, the model accounted for 18.2% of the variance in 12th-grade STEM course-taking, 14.1% of the variance in 10th-grade perceived UV, 24.4% of the variance in 10th-grade interest, 6.3% of the variance in elaboration, and 9.3% of the variance in mothers' perception of adolescents' math ability. (Because variance in the personal connections variable was not significantly predicted in the model, paths predicting it were set to 0.)

Effects on Perception of Adolescents' Math Ability in Seventh Grade

Mothers' years of education significantly predicted mothers' perception of adolescents' math ability in seventh grade ($z = 3.74$, $p < .001$, $\beta = .30$), such that more years of education were associated with higher perceptions of adolescents' math ability.

Effects on Number of Conversations, Personal Connections, and Elaboration

Neither mothers' years of education nor mothers' perception of adolescents' math ability predicted number of conversations between mothers and adolescents or personal connections articulated in the interviews. Mothers' education was a significant predictor of elaboration ($z = 3.20$, $p = .001$, $\beta = .25$), such that mothers with more years of education generated more elaborated responses in their interview.

Effects on Adolescents' Interest

Mothers' perception of adolescents' math ability was a significant predictor of adolescents' STEM interest ($z = 5.03$, $p < .001$, $\beta = .38$), such that mothers' higher perceptions of adolescents' math ability in seventh grade positively predicted their adolescents' STEM interest at the end of 10th grade. Personal connections were a positive significant predictor of adolescents' STEM interest ($z = 3.20$, $p < .001$, $\beta = .28$) with more personal connections being related to higher levels of adolescent interest. There was a significant interaction between number of conversations and elaboration ($z = -1.96$, $p = .05$, $\beta = -.15$), such that the highest level of

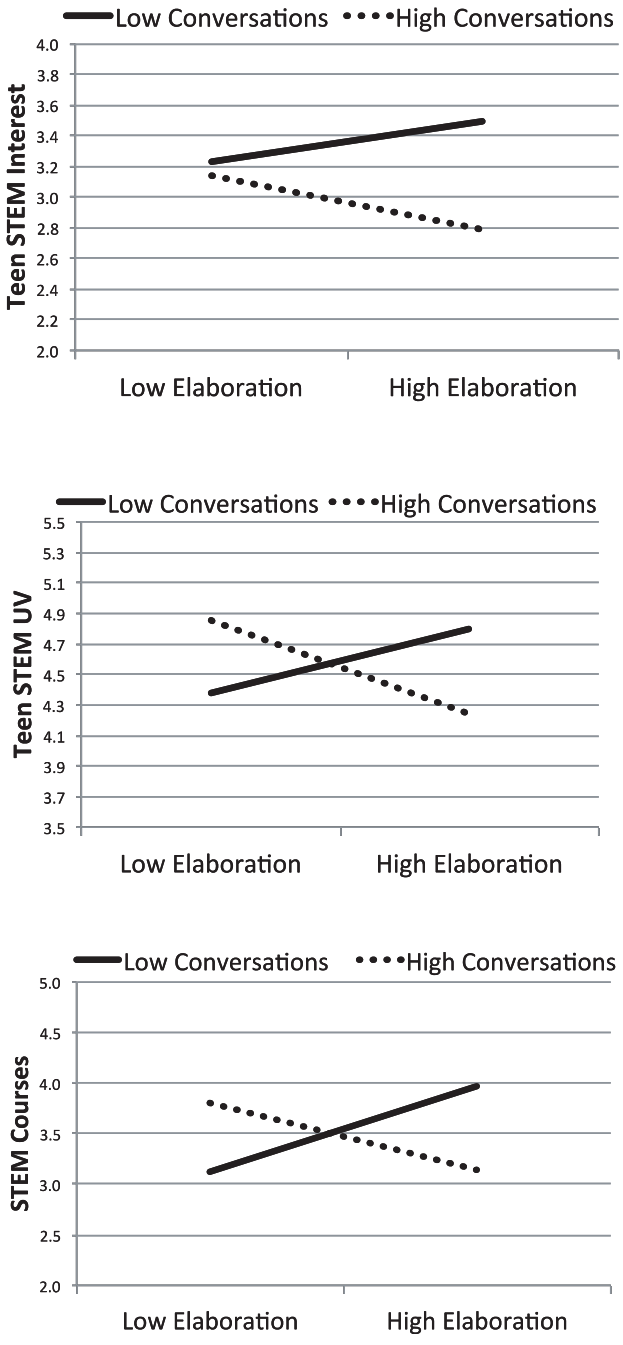


FIGURE 3 The interaction between level of mother's elaboration and number of science, technology, engineering, and mathematics (STEM) conversations, predicting adolescents' STEM interest, utility value, and course-taking.

interest occurred with high elaboration and few conversations (Figure 3).

Effects on Adolescents' UV

Mothers' perception of adolescents' math ability was a significant predictor of adolescents' UV ($z = 2.24$, $p = .03$, $\beta = .19$), such that mothers' higher perceptions of adolescents' math ability in seventh grade predicted higher levels of their adolescents' UV at the end of 10th grade. Personal connections articulated in the interview also significantly predicted adolescents' UV ($z = 2.52$, $p = .01$, $\beta = .23$), with more personal connections made in the interview being related to higher levels of adolescent UV. There was a significant interaction between elaboration and number of conversations ($z = -2.34$, $p = .02$, $\beta = -.19$), such that the highest levels of UV occurred either with high elaboration and few conversations, or with low elaboration and many conversations (Figure 3). Finally, there was a significant effect of the experimental intervention on adolescent UV ($z = 2.68$, $p = .007$, $\beta = .18$), such that adolescents whose parents received the intervention reported more UV in 10th grade than those whose parents were in the control group.

Adolescents' STEM Course-Taking in 12th Grade

Adolescents' interest in 10th grade significantly predicted STEM course-taking in 12th grade ($z = 2.92$, $p = .004$, $\beta = .24$), such that higher levels of interest in 10th grade predicted more STEM courses taken in 12th grade. There was a significant interaction between elaboration and number of conversations ($z = -2.96$, $p = .003$, $\beta = -.24$) such that the highest levels of course-taking were achieved either with the combination of high elaboration and fewer conversations, or less elaboration but more conversations (Figure 3). There was a nearly significant gender difference in STEM course-taking ($z = -1.85$, $p = .06$, $\beta = -.15$) such that girls tended to take more STEM courses than boys. There was a significant effect of the experimental intervention on course-taking ($z = 2.13$, $p = .03$, $\beta = .18$), such that adolescents whose parents received the intervention took more MS in 12th grade, compared with controls (see Harackiewicz et al., 2012; Rozek et al., 2015). In addition, using procedures described by Preacher and Hayes (2008), we found an indirect effect of personal connections on STEM course-taking through adolescent's interest, $z = 2.13$, $p = .03$.

DISCUSSION

The overall goal of the research reported here was to investigate mothers' communication with their adolescent regarding science and math classes in high school. The research probed whether multiple

aspects of these communications would predict the adolescent's later interest in and perception of the UV of MS classes and, in turn, actually taking MS classes in 12th grade.

The results indicated that mothers vary considerably in their ability to respond—in terms of elaboration and making personal connections for the adolescent—to hypothetical questions from the adolescent about the usefulness of MS classes. Overall, 75% of mothers provided at least some elaboration about algebra, although most did it at the simplest level, and 85% elaborated at least somewhat about the usefulness of biology. For physics, however, only 53% elaborated. Like current students, many of these mothers probably never took physics in high school, and it is difficult to elaborate on the usefulness of a topic that one has never studied. Indeed, mothers with more education were more capable of elaboration about the importance of STEM classes. The limited capacity of many mothers to elaborate on the UV of STEM classes means that mothers could be a fruitful point of intervention.

In the structural equation modeling, the communication variables did predict adolescents' interest in and perceptions of the UV of MS courses; and elaboration, in interaction with number of conversations, predicted the number of MS classes that they took in 12th grade. Overall, we were able to predict 18.2% of the variance in STEM course-taking using the variables specified in Figure 1. Nonetheless, structural equation modeling revealed more complex patterns and interactions among variables.

The interaction between number of mother–child conversations and the mother's score on elaboration about STEM, predicting number of STEM courses, was not in the expected direction (Figure 3). Intuitively, one might expect number of conversations always to be a positive predictor and greater elaboration always to be a positive predictor of STEM courses taken. In addition, we might expect that one communication variable would potentiate the other, so that the greatest STEM course-taking would occur with the combination of many conversations and much elaboration. Yet that is not what the data indicate. Instead, the highest levels of STEM course-taking occurred either with many conversations but less elaboration, or fewer conversations but much elaboration. First, we note limitations on the interpretation of the interaction, based on how and when the variables were measured. The elaboration measure was based on mothers' responses to hypothetical questions from their adolescent, not on actual interactions in which the adolescent posed such questions. Moreover, the elaboration measure was obtained in the summer before 10th grade, and the measure of number of conversations was obtained at the end of 10th grade, reporting on the past year.

With these caveats in mind, we offer two possible interpretations of the interaction, one based on the concept of reactance and the other based on laboratory research on optimal sources of UV information. The social–psychological concept of reactance (Brehm & Brehm, 1981) is based on the principle that people desire free choice in their behaviors. If external factors constrain that freedom of choice, the person reacts to restore freedom, often by behaving in a manner that is opposite to what the external source is pressing for. In a recent paper, Van Petegem and colleagues argued that a controlling parenting style creates reactance in adolescents (Van Petegem, Soenens, Vansteenkiste, & Beyers, 2015). Their data, across several studies, supported this hypothesis and, in particular, supported it for an academic outcome, intention to study more.

Applying the concept of psychological reactance to the current study, it may be that a combination of extensive elaboration and many conversations stimulates reactance in the adolescent. More moderate levels of communication—for example, much elaboration but fewer conversations—appear to yield optimal results. Consistent with these ideas, social psychologists, in their intervention studies, have noted that it is very difficult to tell an adolescent why she or he should value learning and have the communication be effective (Hulleman, Godes, Hendricks, & Harackiewicz, 2010; Hulleman & Harackiewicz, 2009; Yeager et al., 2014). They note the problem of reactance and conclude that it is more effective to encourage adolescents to develop their own ideas about UV and formulate their own goals; adults can provide guidance in this process but cannot dictate the motivation or goals. Moreover, autonomy is a crucial developmental issue for adolescents; indeed, it often warrants an entire chapter in textbooks on adolescent development (e.g., Steinberg, 2013). With autonomy-seeking adolescents, reactance may occur when parents engage in numerous, highly elaborated communications about the UV of MS classes.

It is worth noting that these findings and the process of reactance may be specific to the United States and other independence-oriented cultures. In interdependent cultures, such as traditional East Asian and Asian American cultures, parents are

quite directive about school matters (e.g., Huntsinger et al., 1997), the culture expects this approach, and children seem to respect it rather than showing reactance.

A second possible interpretation is based on related laboratory studies showing that UV communicated by an outside source (compared with self-generated ideas about UV) can decrease interest and performance for students who lack confidence (Canning & Harackiewicz, 2015; Durik, Schechter, Noh, Rozek, & Harackiewicz, 2015). Anxiety, for example, may be a factor if students are told that science is important yet they believe they are not good at it. Their interest may then decrease to protect against the anxiety. This line of research suggests that, for parents to increase their adolescent's appreciation of the UV of STEM courses, it may be even more helpful to have the adolescent generate ideas about UV themselves, especially for adolescents who lack confidence (Hulleman & Harackiewicz, 2009).

One of the most important findings was that mothers' scores on personal connections directly predicted adolescents' interest and STEM UV measured in 10th grade. Moreover, mothers' scores on personal connections had an indirect effect on STEM course-taking through the variable of adolescent's interest. These findings are consistent with research on the effectiveness of personalization in mathematics instruction in the schools (Walkington et al., 2013). Making personal connections can become a powerful tool for parents in their communications with their children about school. Moreover, any parent can use personalization, even if they have not taken the relevant class and cannot elaborate about its usefulness. The effect of personal connections demonstrates how important parents can be. Parents may even be more effective than teachers at making personal connections, because parents have much more detailed knowledge of their own child's interests, experiences, and aspirations.

The content of the personal connections that mothers made (Figure 2) indicates that the most common themes relate to the everyday usefulness of material from a class and the importance of the material for the adolescent's intended career. Connections to the adolescent's personal interests were also common. Less frequently, mothers made connections to the adolescent's ability or talent and to the adolescent's past experiences. Many mothers were quite adept at making these personal connections. One mother used interests, past experiences, and career.

> I would remind her of her interest in physical therapy and how important geometry is for understanding the human body. I'd also point out to her how important it is in her dancing. And, she has one instructor that she thinks the world of who is very scientific in his explanations of how the human body works and how the choreography works. And it is geometry, it really is. So, then when you make a practical application out of it, it's much more interesting for her.

Another mother used interests, everyday life, and career.

> She loves animals. So I think, just that it would help you understand animals, living things, or just help you about our own bodies, humans, and just living things. So it's very... I can see a lot of application in everyday life. And maybe if you want to be a veterinary assistant that it could be a real help in your career. That class she's looking forward to.

These findings provide additional insights into the mechanisms by which parents' socialization practices influence their children's interests, perceptions of UV, and academic course choice, as specified in expectancy-value theory and the parent socialization model. Specifically, parents' socialization practices can be particularly effective if parents use personal connections when explaining the usefulness or UV of classes.

Whereas the findings indicate that personal connections operate in a direct, positive manner on both adolescents' STEM interest and perceptions of UV, elaboration functioned differently. Elaboration operated in a more complex way and may actually be counterproductive in the context of a high number of conversations with the adolescent, although it may be quite effective when paired with fewer conversations.

Gender Differences and Similarities

In light of the gender gap in some STEM fields, one of the goals of this study was to determine whether there were subtle differences in mothers' treatment of girls compared with boys, which might contribute to the gender gap. The answers were perhaps surprising. Mothers did not generate more elaborated responses to sons than to daughters, nor was there a gender difference in making personal connections (with one exception, discussed below). Neither did mothers of sons report more conversations about STEM courses than mothers of daughters. These findings may reflect

trends of parents today to treat their daughters and sons in a more equitable manner than parents did in previous generations (Epstein & Ward, 2011). Another possibility is that gender-differentiated treatment was not evident because the situation was hypothetical; perhaps, when actually talking with a son or daughter, mothers would give more gender-differentiated responses.

One exception to the pattern of gender similarities in mothers' treatment of their sons and daughters was in one aspect of the personal connections variable. Mothers' articulation of personal connections to past experiences was more likely for girls (71%) than for boys (29%). However, there were no gender differences in the other categories of personalization, so it appears that neither boys nor girls receive substantially better personalization overall. Taken together, then, the results of the current study provide no evidence of gender-differentiated behavior of mothers in the domain of STEM, nor does it suggest that mothers contribute in a major way to gender gaps in STEM occupations.

Strengths and Limitations

The longitudinal design—in which variables measured in seventh and ninth grade predicted adolescents' interest and perceptions of UV in 10th grade and courses taken in 12th grade—is a strength. In addition, data came from multiple sources—mothers' reports, adolescents' reports, and school records—rather than from a single informant.

It should be noted that the measures of elaboration and personal connections in mothers' communication were based on interviews with mothers about how they would talk with their child in response to hypothetical statements from the child, rather than on actual conversations. An important next step in research will be an analysis of actual conversations between mothers and adolescents on the topic of STEM. Yet the approach of the hypothetical questions posed here has the strength of standardizing the statement from the adolescent to which each mother responded. In live dyadic interactions, it would be more difficult to capture the precise elements of mothers' responses that were elicited in the current study.

One limitation is the ethnic composition of the sample, which was 91% White; therefore, the findings cannot be generalized to ethnic minority populations. Because there are instances in psychological research where phenomena found in White populations do not generalize to ethnic minority populations (e.g., Kling, Hyde, Showers, & Buswell, 1999), future research should study mother–adolescent communication about the value of STEM classes in these populations. A second limitation is that the parents' average level of education was higher than the national average. More research is needed with families in which the parents are less educated. As noted earlier, mother's education is one of the best predictors of children's mathematics performance (Melhuish et al., 2008), and in our research, mothers' education was correlated with the quality of their elaboration of UV. These findings suggest that patterns of findings might differ in populations with lower parental education and that the findings might be even stronger in samples with greater variability in parents' education.

An additional limitation is that we did not include a measure of the adolescent's performance prior to seventh grade. Doubtless some variables in our model, such as mother's perception of the adolescent's math ability, are influenced by prior performance.

The study is also limited insofar as only mothers, and not fathers, were studied. An important next step in research will be to examine these same issues with a sample of fathers and adolescents.

CONCLUSION

This research sought to examine mothers' communications with their adolescent in high school, measuring number of conversations and mothers' elaboration and personal connections in response to a hypothetical statement from the adolescent questioning the usefulness of STEM courses. Overall, we found that mothers varied considerably in their amount of elaboration and personal connections, and elaboration was predicted by mother's education. Personal connections positively predicted adolescents' interest and UV a year later, and, indirectly, actual course-taking 3 years later. Elaboration was also a significant predictor, but its effects were qualified by interactions with the number of conversations. In particular, adolescents took the most STEM courses in high school when mothers engaged in either many conversations about STEM that were less elaborated, or fewer conversations from mothers who elaborated more. These results show the importance of socialization and guidance from parents in encouraging students to take MS courses in high school, yet also point to the complexity of delivering these communications in the most effective manner.

REFERENCES

Arbuckle, J. L. (1996). Full information estimation in the presence of incomplete data. In G. A. Marcoulides & R. E. Schumaker (Eds.), *Advanced structural equation modelling: Issues and techniques* (pp. 243–277). Mahwah, NJ: Lawrence Erlbaum.

Beilock, S. L., Gunderson, E. A., Ramirez, G., & Levine, S. C. (2010). Female teachers' math anxiety affects girls' math achievement. *Proceedings of the National Academy of Sciences of the United States of America*, *107*, 1860–1863. doi:10.1073/pnas.0910967107

Bleeker, M. M., & Jacobs, J. E. (2004). Achievement in math and science: Do mothers' beliefs matter 12 years later? *Journal of Educational Psychology*, *96*, 97–109. doi:10.1037/0022-0663.96.1.97

Brehm, S., & Brehm, J. W. (1981). *Psychological reactance: A theory of freedom and control*. New York, NY: Academic Press.

Briley, D. A., Harden, K. P., & Tucker-Drob, E. M. (2014). Child characteristics and parental educational expectations: Evidence for transmission with transaction. *Developmental Psychology*, *50*, 2614–2632. doi:10.1037/a0038094

Canning, E., & Harackiewicz, J. M. (2015). Teach it, don't preach it: The differential effects of directly communicated and self-generated utility-value information. *Motivation Science*, *1*, 47–71. doi:10.1037/mot0000015

Castro, M., Expósito-Casas, E., López-Martín, E., Lizasoain, L., Navarro-Asencio, E., & Gaviria, J. L. (2015). Parental involvement on student academic achievement: A meta-analysis. *Educational Research Review*, *14*, 33–46. doi:10.1016/j.edurev.2015.01.002

Chhin, C. S., Bleeker, M. M., & Jacobs, J. E. (2008). Gender-typed occupational choices: The long-term impact of parents' beliefs and expectations. In H. M. G. Watt & J. S. Eccles (Eds.), *Gender and occupational outcomes* (pp. 215–234). Washington, DC: American Psychological Association. doi:10.1037/11706-008

Cordova, D. I., & Lepper, M. R. (1996). Intrinsic motivation and the process of learning: Beneficial effects of contextualization, personalization, and choice. *Journal of Educational Psychology*, *88*, 715–730. doi:10.1037/0022-0663.88.4.715

Desimone, L. (1999). Linking parent involvement with student achievement: Do race and income matter? *Journal of Educational Research*, *93*, 11–30. doi:10.1080/00220679909597625

Durik, A. M., Schechter, O. G., Noh, M., Rozek, C. S., & Harackiewicz, J. M. (2015). What if I can't? Success expectancies moderate the effects of utility value information on situational interest and performance. *Motivation and Emotion*, *39*, 104–118. doi:10.1007/s11031-014-9419-0

Eccles, J. S., Barber, B. L., Updegraff, K., & O'Brien, K. M. (1998). An expectancy-value model of achievement choices: The role of ability self-concepts, perceived task utility and interest in predicting activity choice and course enrolment. In L. Hoffman, A. Krapp, K. A. Renninger, & J. Baumert (Eds.), *Interest and learning: Proceedings of the Second Conference on Interest and Gender* (pp. 267–280). Kiel, Germany: IPN.

Eccles, J. S., Freedman-Doan, C., Frome, P., Jacobs, J., & Yoon, K. S. (2000). Gender-role socialization in the family: A longitudinal approach. In T. Eckes & H. M. Trautner (Eds.), *The developmental social psychology of gender* (pp. 333–360). Mahwah, NJ: Lawrence Erlbaum.

Eccles, J. S., Jacobs, J. E., & Harold, R. D. (1990). Gender role stereotypes, expectancy effects, and parents' socialization of gender differences. *Journal of Social Issues*, *46*, 183–201. doi:10.1111/j.1540-4560.1990.tb01929.x

Eccles, J. S., Jacobs, J. E., Harold, R. D., Yoon, K. S., Abreton, A., & Freedman-Doan, C. (1993). Parents and gender-role socialization during the middle childhood and adolescent years. In S. Oskamp & M. Costanzo (Eds.), *Gender issues in contemporary society, Claremont Symposium on Applied Social Psychology*, *6* (pp. 59–83). Thousand Oaks, CA: Sage.

Eccles-Parsons, J., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L., & Midgley, C. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motivation* (pp. 75–146). San Francisco, CA: W.H. Freeman.

Eccles-Parsons, J., Adler, T. F., & Kaczala, C. M. (1982). Socialization of achievement attitudes and beliefs: Parental influences. *Child Development*, *53*, 310–321. doi:10.2307/1128973

Epstein, M., & Ward, L. M. (2011). Exploring parent-adolescent communication about gender: Results from adolescent and emerging adult samples. *Sex Roles*, *65*, 108–118. doi:10.1007/s11199-011-9975-7

Frome, P. M., & Eccles, J. S. (1998). Parents' influence on children's achievement-related perceptions. *Journal of Personality and Social Psychology*, *74*, 435–452. doi:10.1037/0022-3514.74.2.435

Harackiewicz, J. M., Rozek, C. S., Hulleman, C. S., & Hyde, J. S. (2012). Helping parents motivate their adolescents in mathematics and science: An experimental test. *Psychological Science*, *23*, 899–906. doi:10.1177/0956797611435530

Harris, J. R. (1995). Where is the child's environment? A group socialization theory of development. *Psychological Review*, *102*, 458–489. doi:10.1037/0033-295X.102.3.458

Harris, J. R. (1998). *The nurture assumption: Why children turn out the way they do*. New York, NY: Free Press.

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology*, *45*, 740–763. doi:10.1037/a0015362

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1–55. doi:10.1080/10705519909540118

Hulleman, C. S., Godes, O., Hendricks, B., & Harackiewicz, J. M. (2010). Enhancing interest and performance with a utility value intervention. *Journal of*

Educational Psychology, *102*, 880–895. doi:10.1037/a0019506

Hulleman, C. S., & Harackiewicz, J. M. (2009). Promoting interest and performance in high school science classes. *Science*, *326*, 1410–1412. doi:10.1126/science.1177067

Huntsinger, C. S., & Jose, P. E. (2009). Parental involvement in children's schooling: Different meanings in different cultures. *Early Childhood Research Quarterly*, *24*, 398–410. doi:10.1016/j.ecresq.2009.07.006

Huntsinger, C. S., Jose, P. E., Liaw, F., & Ching, W. (1997). Cultural differences in early mathematics learning: A comparison of Euro-American, Chinese-American, and Taiwan-Chinese families. *International Journal of Behavioral Development*, *21*, 371–388. doi:10.1080/016502597384929

Hyde, J., Klein, M. H., Essex, M. J., & Clark, R. (1995). Maternity leave and women's mental health. *Psychology of Women Quarterly*, *19*, 257–285. doi:10.1111/j.1471-6402.1995.tb00291.x

Kling, K. C., Hyde, J. S., Showers, C., & Buswell, B. (1999). Gender differences in self-esteem: A meta-analysis. *Psychological Bulletin*, *125*, 470–500. doi:10.1037/0033-2909.125.4.470

Love, K., & Hamston, J. (2003). Teenage boys' leisure reading dispositions: Juggling male youth culture and family cultural capital. *Educational Review*, *55*, 161–177.

Meece, J. L., Eccles-Parsons, J., Kaczala, C. M., Goff, S. B., & Futterman, R. (1982). Sex differences in math achievement: Toward a model of academic choice. *Psychological Bulletin*, *91*, 324–348. doi:10.1037/0033-2909.91.2.324

Melhuish, E. C., Sylba, K., Sammons, P., Siraj-Blatchford, I., Taggart, B., Phan, M. B., & Malin, A. (2008). Preschool influences on mathematics achievement. *Science*, *231*, 1161–1162. doi:10.1126/science.1158808

Muller, C. (1995). Maternal employment, parent involvement, and mathematics achievement among adolescents. *Journal of Marriage and the Family*, *57*, 85–100. doi:10.2307/353818

Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

National Science Board. (2010). *Preparing the next generation of STEM innovators: Identifying and developing our nation's human capital*. Retrieved September 10, 2014, from https://www.nsf.gov/nsb/publications/2010/nsb1033.pdf

National Science Foundation. (2013). *Women, minorities, and persons with disabilities in science and engineering: 2013*. Retrieved September 10, 2014 , from www.nsf.gov/statistics/

National Science Foundation. (2014). *Science and engineering indicators 2014*. Retrieved August 14, 2014, from www.nsf.gov/statistics/seind14/

Pomerantz, E. M., & Dong, W. (2006). Effects of mothers' perceptions of children's competence: The moderating role of mothers' theories of competence. *Developmental Psychology*, *42*, 950–961. doi:10.1037/0012-1649.42.5.950

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879–891. doi:10.3758/BRM.40.3.879

Robinson, K., & Harris, A. L. (2014). *The broken compass: Parental involvement in children's education*. Cambridge, MA: Harvard University Press. doi:10.4159/harvard.9780674726291

Rogoff, B. (1990). *Apprenticeship in thinking*. New York, NY: Oxford University Press.

Rogoff, B., Turkanis, C. G., & Bartlett, L. (Eds.) (2001). *Learning together: Children and adults in a school community*. New York, NY: Oxford University Press.

Rozek, C. S., Hyde, J. S., Svoboda, R. C., Hulleman, C. S., & Harackiewicz, J. M. (2015). Gender differences in the effects of a utility-value intervention to help parents motivate adolescents in mathematics and science. *Journal of Educational Psychology*, *107*, 195–206. doi:10.1037/a0036981

Simpkins, S. D., Fredricks, J. A., & Eccles, J. S. (2012). Charting the Eccles expectancy-value model from mothers' beliefs in childhood to youths' activities in adolescence. *Developmental Psychology*, *48*, 1019–1032. doi:10.1037/a0027468

Simpkins, S. D., Fredricks, J. A., & Eccles, J. S. (2015). The role of parents in the ontogeny of achievement-related motivation and behavioral choices. *Monographs of the Society for Research in Child Development*, *80*, 1–151. doi:10.1111/mono.12157

Steinberg, L. (2013). *Adolescence* (*Vol. 10*). New York, NY: McGraw-Hill.

Sui-Chi, H. E., & Willms, D. J. (1996). Effects of parental involvement on eighth-grade achievement. *Sociology of Education*, *69*, 126–141. doi:10.2307/2112802

Tenenbaum, H. R., Snow, C. E., Roach, K. A., & Kurland, B. (2005). Talking and reading science: Longitudinal data on sex differences in mother-child conversations in low-income families. *Applied Developmental Psychology*, *26*, 1–19. doi:10.1016/j.appdev.2004.10.004

Updegraff, K. A., Eccles, J. S., Barber, B. L., & O'Brien, K. M. (1996). Course enrollment as self-regulatory behavior: Who takes optional high school math courses? *Learning and Individual Differences*, *8*, 239–259. doi:10.1016/S1041-6080(96)90016-3

Van Petegem, S., Soenens, B., Vansteenkiste, M., & Beyers, W. (2015). Rebels with a cause? Adolescent defiance from the perspective of reactance theory and self-determination theory. *Child Development*, *86*, 903–918. doi:10.1111/cdev.12355

Vandell, D. L. (2000). Parents, peer groups, and other socializing influences. *Developmental Psychology*, *36*, 699–710. doi:10.1037/0012-1649.36.6.699

Walkington, C. A. (2013). Using adaptive learning technologies to personalize instruction to student interests: The impact of relevant contexts on performance and learning outcomes. *Journal of Educational Psychology*, *105*, 932–945. doi:10.1037/a0031882

Walkington, C., Petrosino, A., & Sherman, M. (2013). Supporting algebraic reasoning through personalized

story scenarios: How situational understanding mediates performance. *Mathematical Thinking and Learning*, *15*, 89–120. doi:10.1080/10986065.2013.770717

Watt, H. M. (2005). Explaining gendered math enrollments for NSW Australian secondary school students. *New Directions for Child and Adolescent Development*, *2005*, 15–29. doi:10.1002/cd.147

Watt, H. M. G., Shapka, J. D., Morris, Z. A., Durik, A. M., Keating, D. P., & Eccles, J. S. (2012). Gendered motivational processes affecting high school mathematics participation, educational aspirations, and career plans: A comparison of samples from Australia, Canada, and the United States. *Developmental Psychology*, *48*, 1594–1611. doi:10.1037/a0027838

Wigfield, A. (1993). Why do I have to learn this? Adolescents' valuing of school. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (*Vol. 8*). Greenwich, CT: JAI Press.

Yeager, D. S., Henderson, M. D., Paunesku, D., Walton, G. M., D'Mello, S., Spitzer, B. J., & Duckworth, A. L. (2014). Boring but important: A self-transcendent purpose for learning fosters academic self-regulation. *Journal of Personality and Social Psychology*, *107*, 559–580. doi:10.1037/a0037637

Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research*, *81*, 267–301. doi:10.3102/0034654311405999

The author has requested enhancement of the downloaded file. All in-text references underlined in blue are linked to publications on ResearchGate.

Engaging Families at the Secondary Level: An Underused Resource for Student Success

Krista L. Jensen and Kathleen M. Minke

Abstract

Parent engagement in education has been shown to have positive effects on students' academic and social/emotional success. However, much of the research has focused on younger students. Less attention has been given to parent engagement at the secondary level, especially with respect to how parents choose to engage and how adolescents perceive this engagement. This article reviews the literature on parent engagement at the secondary level, focusing on its importance to academic achievement, high school completion rates, and social–emotional functioning. Factors influencing parents' decisions to become engaged are discussed, including parental self-efficacy, role construction, and specific invitations from the child. Parent engagement remains important at the secondary level, though parent behaviors appear to change to match the developmental needs of students. Implications for practice and future research are discussed.

Key Words: parent engagement, families, middle, high schools, secondary level, parental self-efficacy, role construction, invitations

Analysis of the Literature on Engaging Families of Secondary Students

Parent engagement is a complex, multifaceted construct that encompasses the ways in which parents support their child's education at home and at

school. Parent engagement has been linked with positive student outcomes across the age range from elementary to high school. Although somewhat less attention has been given to high school students, the available literature reviewed below suggests that parent engagement is associated with higher academic achievement, better high school completion rates, and positive social/emotional outcomes (e.g., Hill & Tyson, 2009; Jeynes, 2007).

Though there appear to be significant benefits associated with parent engagement throughout a child's education, in recent years, concerns have been expressed regarding whether some parents are too involved in their children's lives. These "helicopter" parents are believed to swoop down at a moment's notice whenever their children are in distress and may inadvertently interfere with children's ability to tackle challenges and solve their own problems. This phenomenon has been researched primarily at the college level, where some evidence suggests that students with overly engaged parents lack autonomy and fail to develop appropriate peer relationships (Van Ingen et al., 2015).

The notion that there are benefits and risks to parent engagement suggests some gaps in the literature. For example, most research directed toward understanding the mechanisms through which parents choose to become involved in education and the behaviors they enact has been conducted at the elementary level (e.g., Hoover-Dempsey et al., 2005; Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005). However, schools are expected to engage families throughout high school, given federal legislative mandates for both general (Every Student Succeeds Act) and special education (Individuals with Disabilities Education Act), and relatively little research has addressed this process. Questions remain regarding the role that the parent–child relationship may play in motivating parent engagement and whether there are developmental differences in the kinds of behaviors that adolescents prefer and will accept from their parents.

In this article, we review the existing literature on the parent engagement process at the secondary level and its effects on academic and social/emotional outcomes for students. We used primary search databases including Google Scholar, PsycINFO, and ERIC (EBSCOhost). The search included combinations of the following terms: parent involvement, parent engagement, parent participation, high school, secondary school, elementary school, academic/educational outcomes, high school completion, school dropout, and social/emotional outcomes. We first outline the outcomes associated with parent engagement, both academic and social/emotional. We then discuss what is known about parental decision-making and engagement behaviors. We conclude with implications for practice and future research.

Definitions

Researchers use a variety of terms to describe the ways in which families and schools interact to produce student outcomes. In older literature and conceptualizations, parent "involvement" or "participation" was used to focus on particular parental behaviors, valued by school personnel, that help students succeed. For example, some early research focused on parent involvement as communication with teachers regarding student progress (Deslandes, Royer, Turcotte, & Bertrand, 1997; Epstein, 1991) and helping with homework (Green, Walker, Hoover-Dempsey, & Sandler, 2007). Lawson (2003) described these kinds of conceptualizations of parent involvement as "school-centric," meaning that school professionals decide what is expected from parents. School-centric parent involvement includes those behaviors that are visible to school staff, such as attending parent–teacher conferences, volunteering in the classroom, and helping with homework. Lawson contrasts these kinds of involvement behaviors with "community-centric" activities that are less visible to teachers, such as keeping children safe in dangerous neighborhoods. When "involvement" is judged only from the perspective of the school, miscommunications can occur that negatively affect family–school relationships.

Parent engagement is a relatively newer term that has a broader conceptualization, encompassing any behavior that parents perform to support education. This notion has its roots in early research that recognized the importance of factors such as parental aspirations for student achievement and communication of those aspirations to students (Bloom, 1980, as cited in Fan, 2001). Engagement includes school-centric behaviors but also less visible behaviors such as conversations with the child about education-related topics. Parent engagement perspectives acknowledge that there is no singular way for parents to be engaged and that no matter how small the behavior may be (e.g., asking adolescents how their school day was), it may have a positive effect. Engagement includes any parental behavior that shows adolescents that parents have a vested interest in their education and future and encompasses behaviors at home (e.g., monitoring of behavior and homework), at school (e.g., interactions with teachers, attending school events), and parent–student interactions (e.g., educational planning; Shumow & Schmidt, 2014).

Additionally, more recent conceptualizations of the family–school connection recognize that limiting the focus to "parents" misses the broader contextual supports within families that are likely to have an effect on student outcomes. Therefore, many authors use the term "family engagement" to be inclusive of these influences. Family engagement perspectives also acknowledge the importance of community influences in building families' capacities to engage

in ways that support student success (see Dearing, Sibley, & Nguyen, 2015 for a review). Similarly, family engagement perspectives include the notion of partnership; there should be a bidirectional flow of information and shared responsibility for outcomes (Parent Teacher Association, 2010). Complicating matters further, some researchers use these various terms interchangeably, whereas others define their terms more specifically. The research reviewed here primarily is focused on that subset of the literature that directly examines the role of parents. This should not be construed to mean only birth parents but is inclusive of all adults who serve a parenting role in a family. We use the term parent engagement to emphasize the broader and more multifaceted forms of engagement, while maintaining a focus on those in a parenting role. We also maintain the terms used in the studies described (i.e., using "parent involvement" if that is the language of the original study).

Engagement and Academic Achievement

Positive relationships between parent engagement and student achievement are evident through high school, with the types of engagement behaviors varying from those traditionally found at the elementary level. At the elementary level parent engagement behaviors associated with academic achievement include volunteering in the class/school, attending school functions, helping with and checking homework, and engaging in reading activities with the child (e.g., Green et al., 2007; Senechal & Young, 2008; Walker et al., 2005). At the high school level, these behaviors may decrease in the degree of impact they have on academic achievement, and other engagement behaviors that are more developmentally appropriate for adolescents may more strongly influence achievement as described below (Jeynes, 2007; Wang, Hill, & Hofkens, 2014; Wang & Sheikh-Khalil, 2014).

Meta-analyses conducted with secondary school students (both middle and high school) have shown a significant relationship between measures of general parent engagement and academic achievement (Hill & Tyson, 2009; Jeynes, 2007). In these studies, more subtle and indirect forms of engagement appeared important. Parent–student communication (regarding school and values), holding high educational expectations, and authoritative parenting style were the strongest predictors of academic achievement. In contrast, helping with their child's homework demonstrates a more mixed set of results with some studies showing a positive influence (Jeynes, 2007) and others a negative or nonsignificant influence on academic achievement, probably due to the greater influence of prior academic performance (Shumow & Miller, 2001; Strayhorn, 2010). That is, prior achievement confounds the influence of parent engagement on academic success. If an adolescent is not performing well

in school, parents may increase the amount of homework help they provide. If an adolescent is demonstrating academic success, parents may decrease the homework support provided (Hill & Tyson, 2009), but not necessarily be less engaged with the student's academic success. Some of the inconsistency also may be explained by the nature of the homework activities and the extent to which parents are supported in their efforts to help. Specific instructions to parents in how to engage with homework (Sheldon & Epstein, 2005) and how to help students manage emotionality around homework (Xu, 2005) appear to be beneficial.

Parent attendance/participation in school events is considered important at the elementary level but demonstrates mixed results as students get older. Although Hill and Tyson (2009) found that parent attendance/participation in school events had a significant, positive relation with academic achievement among middle school students, Jeynes (2007) found that parental participation did not influence overall achievement among high school students. However, Jeynes found a relationship between parental attendance/participation and specific achievement subcategories, such as grades, teacher rating scales, and indices of academic behaviors and attitudes. A possible explanation for these results is the grade levels of focus. At the high school level, there may not be as many opportunities for parent attendance/participation and thus influence on academic achievement was not detected.

Parent engagement behaviors that are shown to significantly impact academic achievement among high school adolescents include communicating high educational aspirations (Benner, Boyle, & Sadler, 2016; Froiland & Davison, 2016; Wang & Benner, 2014; Wang & Sheikh-Khalil, 2014) and communication/discussions about school and the adolescent's future (Altschul, 2011; Dietrich, Kracke, & Nurmi, 2011; Dietrich & Salmela-Aro, 2013; Fan, 2001; Gordon & Cui, 2012; Jeynes, 2005; Shumow & Schmidt, 2014; Wang & Sheikh-Khalil, 2014). Autonomy support (Deslandes, Potvin, & Leclerc, 1999; Deslandes et al., 1997; Doren, Gau, & Lindstrom, 2012), parental monitoring (Crosnoe, 2005; Falbo, Lein, & Amador, 2001; Shumow & Miller, 2001), and the home environment (e.g., specific place to study; Altschul, 2011; Crosnoe, 2005; Fan, 2001; Keith et al., 1998; Shumow & Schmidt, 2014) are also influential.

Using data from a multiwave longitudinal study of adolescents during their tenth and eleventh grade years, Wang and Sheikh-Khalil (2014) compared three types of parent engagement and their association with academic achievement. Academic socialization was defined as communication-based behaviors from parents that convey the importance of education, their aspirations for the adolescent, and plans for the future. School-based engagement was defined as

school–home collaboration, volunteering, and attending school events, while home-based engagement included providing a structure for homework and leisure time and monitoring schoolwork. Academic achievement was measured as the end-of-year grade point averages of adolescents for both Grades 10 and 11. Of the three types of parent engagement examined, academic socialization had the strongest association with adolescents' achievement. Wang and Sheikh-Khalil also found that home-based parent engagement was positively, significantly associated with academic achievement, whereas school-based engagement was not associated with achievement.

Similarly, Wang, Hill, and Hofkens (2014) examined these three types of parent engagement on the academic achievement of students longitudinally from seventh grade through eleventh grade. Academic achievement was measured as students' grade point average at the end of Grades 7, 9, and 11. Academic socialization was defined as scaffolding independence for adolescents and linking education to future success. School-based parent engagement included the amount of communication between the parent and teachers as well as the quality of the communication. Home-based parent engagement included the amount of structure parents provided in the home for adolescents completing work. School-based parent engagement decreased over the course of middle and high school, while home-based and academic socialization increased. In contrast to Wang and Sheikh-Khalil (2014), though school-based engagement decreased over time, it still had a positive association with academic achievement. Both studies showed a positive association between home-based and academic socialization engagement behaviors and academic achievement.

In sum, evidence indicates that parent engagement exerts a positive influence on academic achievement among high school students. School-based engagement may lessen in importance, while academic socialization appears to increase in importance. The latter is less visible to teachers, which may account for the perception of a decline in engagement from elementary to secondary school.

High School Completion Rates

Parent engagement also has a positive influence on high school completion rates for adolescents (Anguiano, 2004; Barnard, 2004; Englund, Egeland, & Collins, 2008). When parents are engaged to a greater extent, the percentage of students that drop out of high school decreases. Using the NELS (1988) national dataset to examine the effects of parent involvement on high school completion, Anguiano (2004) found that "parents' participation did make a difference in whether an adolescent completes high school" (p. 77). Both traditional parent involvement and parental advocacy involvement were examined as predictors of high school completion. Traditional parent involvement was

defined as mostly school-based involvement including communication with the school, attendance at school events, and asking about or helping with homework. Parental advocacy involvement was also school-based and measured the extent to which parents were involved with the school's policies and the parent–teacher organization. Anguiano found a significant, positive relationship between both forms of involvement and completion of high school.

Similarly, parent engagement predicted high school completion and dropout in a longitudinal study of individuals from kindergarten through 20 years of age (Barnard, 2004). Parents were asked to report on their engagement at home and at school when their child was in second, fourth, fifth, and sixth grades. Parent engagement at home was described as the frequency with which parents performed various activities with their child, including reading to them, cooking with them, discussing school progress, and taking them to educational environments such as a museum or library. Parent engagement at school was described as the frequency of which parents volunteered in the classroom, spoke with their child's teacher(s), and participated in school activities. Teachers were also asked to report on the frequency in which parents engaged in school activities from first through sixth grades. Results indicated that parent reports of their own engagement, both at school and at home, were not predictive of high school completion or dropout by age 20. However, teachers' ratings of parent engagement had a significant relationship with both dropout and high school completion rates. As the number of years a teacher rated a parent's engagement as average or better increased, the lower the rates of high school dropouts and the higher the rates of high school completion. These results have two important implications for parent engagement research. First, parent engagement behaviors that are visible to teachers may influence teachers' perceptions in ways that have beneficial effects on students' academic success. Second, study outcomes vary depending on whose perceptions are measured. These results are intriguing given the evidence that less visible parent behaviors have an important influence on overall achievement.

Social/Emotional Outcomes

Parent engagement is linked with adolescent social/emotional well-being, including lower levels of depression and aggressive or violent behaviors as well as higher levels of adolescent sense of competence, self-esteem, and self-efficacy (Davidson & Cardemil, 2009; Dodge, Greenberg, & Malone, 2008; Duchesne & Ratelle, 2010; Flouri & Buchanan, 2003; Gibson & Jefferson, 2006). In a longitudinal study of adolescents from tenth through eleventh grade, negative relationships between parent engagement and depression were demonstrated (Wang & Sheikh-Khalil, 2014). In other words, as parent engagement

increased, adolescents' reports of depression decreased. Of the three forms of parent engagement examined, academic socialization had the strongest negative relationship with depression, while home-based parent engagement had an indirect negative relationship with depression through behavioral engagement (or behaviors that demonstrate an individuals' engagement in school, such as completing assignments and attending class). School-based parent engagement also had a significant negative relationship with depression. One possible explanation for this finding is that the quality of communication between the parent and teacher influences their interactions with the adolescent. Adolescents may feel more connected to their parents and teachers through a positive parent–teacher relationship, and thus their reports of depression decrease.

In another study of sixth grade students, Duchesne and Ratelle (2010) similarly found that parent engagement had a significant negative relationship with adolescents' rates of anxiety. Parent engagement was defined as the extent to which parents "invest in and participate in their daily lives" as perceived by the adolescent (p. 500). As parent engagement increased, adolescents' rates of anxiety decreased.

These studies demonstrate that parent engagement is a complex, multifaceted construct that plays an important role in the educational and social/emotional well-being of adolescents. From positively influencing academic outcomes to decreasing rates of high school dropouts to lowering rates of anxiety and depression, parent engagement is associated with many benefits. However, there is some evidence that parent engagement can be problematic when it is overly intrusive and interferes with students' developing autonomy and problem-solving skills.

Parental Over-Engagement

The value of parent engagement in education typically is considered an obvious good or "like apple pie" (Ramirez, 2001, p. 1). Although some have noted the potential for conflict (e.g., Lareau & Muñoz, 2012), most research has focused on ways to increase engagement from pre-K through high school graduation. In recent years, however, there has been some attention to parental behaviors that are detrimental to students' developing autonomy and overall adjustment, particularly in college. Excessively controlling behaviors have been associated with a host of negative outcomes in college students, such as lower self-efficacy (Bradley-Geist & Olsen-Buchanan, 2014; Van Ingen et al., 2015), less secure peer attachment and lower peer trust (Van Ingen et al., 2015), more test anxiety (Shadach & Ganor-Miller, 2013), and increased depression and anxiety (LeMoyne & Buchanan, 2011). Efforts to exert psychological control in the absence of parental warmth and in the presence of excessive criticism

appear most likely to lead to negative effects (Nelson, Padilla-Walker, & Nielson, 2015; Padilla-Walker & Nelson, 2012; Schiffrin et al., 2014).

The available research has been conducted primarily with college students, and there are few studies in this area at the secondary level. However, there is evidence of negative effects on achievement when parents engage in too much regulation of homework (Wang, 2015) and indicating that adolescents want to maintain control when help is provided (Moroni, Dumont, Trautwein, Niggli, & Baeriswyl, 2015; Xu, 2002). Given that parent engagement is associated with a variety of positive outcomes for adolescents, as well as the indications that there may be some risks, it is important to understand the mechanisms that support effective parent engagement at the secondary level.

Parents' Decisions to Become Engaged

Hoover-Dempsey and Sandler's revised theoretical model of the parent involvement process provides a framework for understanding parents' decisions to become involved in their children's education and how that involvement influences student outcomes (Hoover-Dempsey et al., 2005; Walker et al., 2005). The first two levels of the model hypothesize the mechanisms whereby parents decide whether and how they will engage in their children's education.

Parents' motivation to become involved in education is captured by two variables: parental role construction and parental self-efficacy. Parental role construction refers to parents' beliefs about what their responsibilities are towards their child's education. Role construction can be active (parents believing that their child's education is their responsibility or is a shared responsibility with schools) or passive (parents believing that their child's education is the responsibility of the school alone; Hoover-Dempsey et al., 2005; Walker et al., 2005). Parental self-efficacy refers to parents' beliefs about whether their actions and abilities have a positive influence on their child's educational outcomes. These variables have been associated with children's academic, social, and behavioral functioning (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Brody, Flor, & Gibson, 1999; Kim, Sheridan, Kwon, & Koziol, 2013) and parental behaviors. For example, among parents of seventh through ninth grade students, parental role construction and self-efficacy were significant predictors of home- and school-based engagement (Deslandes & Bertrand, 2005; Green et al., 2007; Hoover-Dempsey & Sandler, 1997; Park & Holloway, 2013).

Although multiple researchers have noted the importance of parental role construction and self-efficacy in predicting parents' engagement behaviors, these motivational factors do not always function the same way across studies. Green, Walker, Hoover-Dempsey, and Sandler (2007) found that role construction and self-efficacy both predicted home-based engagement, while

self-efficacy was a negative predictor of school engagement. In contrast, in a study of 203 parents of elementary students, Anderson and Minke (2007) found that role construction did not have a direct effect on parental behavior once the influence of specific invitations from the student was included in the model. Similarly, they found that self-efficacy predicted parent engagement behaviors at home but not at school. Some of the conflicting evidence may be a result of not including measures of academic socialization in these studies. That is, parents' academic self-efficacy may positively influence their academic aspirations for their child and their child's academic self-efficacy, which, in turn, influences their child's academic achievement (Bandura et al., 1996). Importantly, these variables may also function differently across race, ethnicity, and class. For example, self-efficacy predicted involvement behaviors most strongly for economically disadvantaged parents (Park & Holloway, 2013).

Importantly, parents are more likely to be engaged in their child's schooling when they perceive that their engagement is welcomed and desired (Green et al., 2007; Mapp, Johnson, Strickland, & Meza, 2010; Park & Holloway, 2013; Walker et al., 2005). Invitations to participate appear important in communicating this message, particularly when they come from the student (Deslandes & Bertrand, 2005; Green et al., 2007).

In examining motivators of engagement for parents of middle school students, Deslandes and Bertrand (2005) asked 770 parents to report on the frequency of specific invitations for involvement from both the teacher and adolescent. Results demonstrated that parents' perceptions of specific invitations from the adolescent were the strongest predictors of home-based parent engagement for seventh, eighth, and ninth grade parents. For school-based parent engagement, specific invitations from the adolescent were significant predictors for seventh and eighth grade parents but not ninth grade parents. Specific invitations from teachers were a significant predictor for school-based, but not home-based, engagement for seventh, eighth, and ninth grade parents.

The ways in which parents engage in education also are influenced by their perceived life contexts, that is, the time and energy parents have to devote to educational engagement and their beliefs about whether they have the skills to be engaged successfully (Green et al., 2007; Walker et al., 2005). Examined as a single construct, self-perceived time and energy was found to be a significant predictor of home- and school-based parent engagement among parents of first through sixth grade students (Green et al., 2007). In contrast, Anderson and Minke (2007) did not find parents' perceived time and energy to be a significant predictor of parent engagement. More recently, in a sample of Mexican American adolescents, financial difficulties and major life events in the family predicted less involvement at school and at home, respectively

(Camacho-Thompson, Gillen-O'Neel, Gonzales, & Fuligni, 2016). As with the investigations of efficacy and role construction, including a measure of academic socialization may provide greater clarity in how these variables predict engagement. For example, recent evidence suggests that academic socialization operates as a stronger predictor of success among students from more advantaged life contexts (Benner et al., 2016).

Parent–Adolescent Relationship Quality

Parent–adolescent relationship quality has been linked with adolescent outcomes, including academic achievement and social/emotional variables. Adolescents reporting better relationship quality with their parents tend to demonstrate higher academic achievement (Chan et al., 2013; Deslandes et al., 1999; Gordon & Cui, 2012), higher rates of high school completion (Englund et al., 2008), higher ratings of self-efficacy (Gecas, 1971), higher self-esteem (Chan et al., 2013; Deković, 1999; Doyle & Markiewicz, 2005; Gecas & Schwalbe, 1986), and lower rates of depression (Fanti, Henrich, Brookmeyer, & Kuperminc, 2008; Wang, Brinkworth, & Eccles, 2013) and other internalizing problems (Morin, Bradshaw, & Berg, 2015).

Changes in the amount and types of parent–adolescent communication through the adolescent developmental period have been demonstrated (Keijsers & Poulin, 2013). When examining parental knowledge, parental solicitation, parental control, adolescent disclosure, and adolescent secrecy, Keijsers and Poulin (2013) found a decrease during early adolescence in willingness to disclose information to parents as well as a decrease in parental solicitation. Further, they found that parental knowledge of the adolescent's whereabouts, friends, and activities gradually decreased throughout adolescence. These communication changes appear to be driven by the adolescents. In their pursuit of increased privacy and autonomy, they regulate the amount of information they provide their parents. Parents respond to this desire for increased privacy and autonomy by decreasing their solicitation of information.

In addition to changes in parent–adolescent communication, perceived parent–adolescent relationship quality changes as well (McGue, Elkins, Walden, & Iacono, 2005). Adolescents reported a decrease in perceived relationship quality with their parents over a three-year time period (i.e., from the age of 11 to 14). The amount of conflict increased, parent engagement decreased, adolescents had less positive regard for their parents, and adolescents perceived that their parents had less positive regard for them. Further, McGue et al. (2005) reported that for each of these four aspects of the parent–adolescent relationship, approximately 20–30% of adolescents' perceived marked deterioration over this three-year time period. These changes in communication and relationship

quality during adolescence may have an impact on the amount and types of invitations adolescents provide to parents, thus influencing the amount of parent engagement. That is, in the presence of a more positive relationship, the adolescent may be more likely to extend an invitation, whereas if the relationship is negative, the adolescent may not extend an invitation. However, no studies on the influence of relationship quality on invitations were found.

Differences in Parent Engagement Behaviors Across Years of Schooling

Although there is ample evidence that parental engagement serves as a positive influence on adolescents' developmental outcomes, parental engagement at home and school appears to decrease over the course of a student's education from elementary to middle to high school (Cheung & Pomerantz, 2011; Crosnoe, 2005; Green et al., 2007; Laird, Pettit, Bates, & Dodge, 2003; Shumow & Schmidt, 2014; Wang et al., 2014). This decline is commonly attributed to parents' perceptions that adolescents desire greater autonomy. Adolescents in western cultures are expected to begin establishing their own identity and take on greater responsibility. They typically begin to desire separation from their parents and greater autonomy in order to complete tasks on their own.

One area in which adolescents can begin to increase their autonomy is through their academic performance. Parental engagement behaviors that are typically performed during elementary school (e.g., volunteering in the classroom, checking/helping with homework, communicating with the teacher) do not align with adolescents' desire for increased autonomy. Parents may decrease these specific behaviors and engage in other, more developmentally appropriate behaviors, such as parent–adolescent discussions and communicating expectations, which may not decline during high school years (Hill & Tyson, 2009; Wang et al., 2014; Wang & Sheikh-Khalil, 2014).

Using the parent surveys from the base year (1988) and second follow-up (1992) of the National Education Longitudinal Study (1988), Catsambis and Garland (1997) examined the differences in parent engagement from eighth grade to senior year of high school. They found that some aspects of parent engagement were maintained across this timespan while others were not. Parents continued to maintain rules for students' keeping their grade point averages (GPAs) up, while rules regarding completing homework and discussing school activities declined. They also reported that some components increase, such as educational expectations for the child. Communication between schools and parents appeared to change over time with schools decreasing the amount of contact they initiated with parents regarding academic performance and behavior, while increasing the amount of communication regarding the child's academic programs and volunteer work.

Shumow and her colleagues also have shown differences in parent engagement across the high school years. Parents of freshmen appear more engaged at home and less engaged at school than parents of returning high school students (Shumow, Lyutykh, & Schmidt, 2011). Home engagement for ninth graders was associated with better grades, whereas the opposite pattern was seen in older students (i.e., greater home engagement was associated with lower grades; Shumow & Schmidt, 2014). It appears that both parents and students need a period of adjustment to the high school setting and that this affects engagement behaviors.

Other potential reasons for changes in parent engagement include the increased difficulty of school work and the structure of the secondary school environment (Harris & Goodall, 2008). As the level of academic difficulty increases, parents may no longer feel they can help their adolescent, leading to a decrease in self-efficacy and a decrease in engagement. Parents also may not feel as comfortable with the secondary school due to its different structure from elementary school (Adams & Christenson, 2000; Harris & Goodall, 2008). First, unlike elementary school where parents typically only have to interact with one teacher, in secondary school students have a different teacher for each subject. Parents may not be able to establish a relationship with each of the teachers, leading to a decrease in engagement (Harris & Goodall, 2008). Second, there are not as many opportunities for school-based engagement behaviors in secondary schools. Parents are typically not encouraged to volunteer in the classroom or on field trips as they are in elementary school.

Furthermore, relatively little is known about adolescents' preferences regarding their parents' engagement behaviors. As adolescents progress through secondary school, engagement behaviors at school (e.g., volunteering in the school, attending back to school night) may not be as acceptable to the adolescent as other behaviors, such as communicating beliefs and expectations that convey a vested interest in their achievement (Barge & Loges, 2003; Connors & Epstein, 1994; Halsey, 2005; Jeynes, 2007; Vyverman & Vettenburg, 2009). Middle school students report that they want their parents involved in their education, but they prefer indirect help (e.g., responding to requests for help, demonstrating that parents believe in them) over more overt helping that may be perceived as intrusive (Moroni et al., 2015; Xu, 2002).

In summary, there appear to be similarities and important differences in the manner and effects of parent engagement among secondary school students compared to elementary students. At the secondary level, home-based and school-based engagement behaviors continue to influence achievement and social/emotional outcomes, but academic socialization and expectations take on an increasingly important role. Cultural, socioeconomic, developmental,

and relationship variables interact in the context of changing school outreach practices, more advanced academic work, and larger, more complex school environments, making it challenging for schools to respond effectively. Still, some suggestions can be made on the basis of current evidence.

Implications for Practice

There appears to be considerable value in encouraging ongoing parent engagement with education throughout secondary school. The optimal pathways for accomplishing this are less clear. For example, there is evidence that larger schools are characterized by less safety and respect, which in turn limits communication and opportunities for families to engage (Goldkind & Farmer, 2013). Although advocating for smaller schools is a worthy goal (Kreider, Caspe, Kennedy, & Weiss, 2007), it is a long-term, arduous journey toward change that may be discouraging to teachers and administrators seeking ways to improve engagement within existing structures. Other, smaller scale efforts can be undertaken to ensure that educators are provided with appropriate training and supports to develop effective family–school engagement activities.

Communication and Outreach to Families

Most critically, schools should attend to their communication practices with both parents and adolescents (Hill, 2015). All parents and students need information on high school admission procedures, discipline and related policies, course selection, and other routine matters in order to engage effectively with schooling. This kind of explicit knowledge is relatively easy to identify and share. Far more difficult, and yet more important, is the identification and communication of implicit or tacit knowledge about how the school works, how to obtain opportunities, how to smooth the transition to college, and other topics that are typically better understood by more advantaged families (Hill, 2015).

Schools and teachers may improve parent engagement by increasing parents' knowledge on how to encourage high academic expectations and to provide help in developmentally appropriate ways. This could involve providing parent training in the skills necessary to engage their adolescent in conversations on their current education, future educational goals, and career goals, along with communicating their confidence in their adolescents as learners. It is important that events designed to communicate this information are accessible to all families and target those families most in need. As one example, the Miami–Dade County schools provide "Parent Academies" that seek to communicate how schools work and how parents can adjust their strategies to changing adolescent

needs (Hanover Research, 2014, as cited in Mac Iver, Epstein, Sheldon, & Fonseca, 2015). Similarly, the Futures and Families Project (see Kreider et al., 2007; Vega, Moore, & Miranda, 2015) provided support to Latino families through bimonthly meetings focused on developing a pathway to college for students; participating families reported less isolation and improved advocacy skills.

Teachers typically receive limited training in how to engage families effectively (see Bergman, 2013 for a review). Useful strategies include communication skills training (e.g., reflective listening, empathic responding, conflict management; see Symeou, Roussounidou, & Michaelides, 2012), regular and positive correspondence through multiple media, and interactive homework with explicit instructions for family participation. Further, schools should help teachers take a strength-based approach to their interactions with families that acknowledges the supports that parents are providing that are not visible to them as teachers (Vega et al., 2015). This could be done through in-service presentations to the staff on barriers that families face (e.g., transportation, inflexible jobs, language barriers) and the many ways in which parents engage at home that may be invisible at school but that yield substantial benefits for student outcomes. These efforts must also remain mindful of the developmental needs of adolescents in preparing for postsecondary education or the workforce.

Utilize Transitions Effectively

Particular attention should be given to transitions both into and out of high school. Schools that provide higher quality transition activities between middle and high school report fewer ninth graders struggling academically (Mac Iver et al., 2015). Similarly, Shumow and Schmidt (2014) highlighted the ninth grade transition as a potentially fruitful arena for engaging families. Many families are aware of the potential pitfalls in this transition and make efforts to help at home and at school. Programs that provide information on how best to support student success, delivered through multiple media and opportunities with a focus on behaviors that are within the capacity of the parents (e.g., encouragement, monitoring, seeking assistance for homework), may be most beneficial.

Just as parent behaviors transition between middle and secondary schools, we should consider how their behavior will be expected to be different when the child transitions to college and provide support for these new behaviors. Such supports may be particularly important for first generation and culturally diverse college students, whose parents may have limited experience with high school course selection, financial support pathways, and application processes (Schwartz, 2009; Vega et al., 2015). Programming that informs adolescents and their parents about preparation for college applications, finding financial support, and navigating the transition may be especially important for first

generation college students. The Advancement Via Individual Determination (AVID) program (AVID, 2012; Bernhardt, 2013) provides one example of effective ways to provide this support. Schools also should consider partnering with nearby two- and four-year institutions to educate parents on the expectations for students and the ways in which they can best support their children's success. As just one example, at the high school level, it is considered appropriate for a parent to contact a teacher or administrator directly to try to resolve issues; at the college level, similar behavior is considered problematic. School counselors could be utilized to organize and facilitate such partnerships, given that part of their role already includes college planning.

Employ Family–School Liaisons

Teachers and parents may need assistance to engage successfully. A parent engagement facilitator or family–school liaison, who works explicitly toward linking families with schools through problem solving around individual student needs, may be an important resource (Ferrara, 2015). Liaisons are particularly important at the secondary level because these schools are so much larger, more complex, and more difficult to navigate (Park & Holloway, 2013).

Liaisons typically share a language and cultural background with the families served. They communicate with families and provide diverse opportunities to participate (Vega et al., 2015). The Boston Arts Academy has been highly successful in engaging the majority of families by using a full-time family coordinator to link parents to resources and information (Ouimette, Feldman, & Tung, 2006). Parents in the school reported valuing communication with teachers that is open, friendly, and includes adolescents in a developmentally appropriate way. Liaisons have also reported that building relationships with families, particularly of at-risk students, is challenging and involves a high degree of persistence, empathy, and respectfulness; peer support among the liaisons can be helpful (Ferrara, 2015).

Support Developing Student Autonomy

There is no inherent conflict in a focus on parent engagement in secondary schools and a focus on fostering competence and self-reliance among adolescents. To the limited extent that their views have been sought, students express a preference for parental behaviors that support autonomy (Xu, 2002). However, parents likely need information regarding adolescent development and ways to balance autonomy and support.

Secondary schools generally are not structured in ways that promote the development of autonomy skills (Barghava & Witherspoon, 2015). Indeed, approaches to discipline that prize compliance/obedience over self-regulation

(see Bear, 2015 for a review) may exacerbate the "helicopter" phenomenon and limit student growth. We recently saw a Facebook post from a college freshman that highlighted this problem succinctly: "In college they want me to make life-altering decisions. Two months ago, I had to ask permission to go to the bathroom." Secondary school staff should consider the ways in which students are provided opportunities to face developmentally appropriate challenges and make consequential decisions, in the context of supportive family–school relationships. According to Hill and Wang (2015), students should practice decision-making in situations that are not emotionally charged and that do not require giving up an immediate powerful reward for a long-term goal, with affirmation from admired adults. Teachers and parents might work together to develop these kinds of decision-making activities in areas such as selecting electives, choosing among an array of afterschool activities, or deciding how to manage the balance of a summer job with preferred activities. There would have to be a shared understanding and agreement that the adults can live with the youth's choices and allow the youth to experience the consequences of those choices. Similarly, youth can be more actively involved in meetings focused on their academic success. When adolescents are specifically taught how to lead their own Individualized Education Plan (IEP) meetings, they develop increased knowledge of transition concepts and improved self-efficacy (Woods, Sylvester, & Martin, 2010).

Plan Interventions Collaboratively

Whatever methods or programs are considered to improve family engagement at the secondary level, they should be developed with a deep understanding of what families and youth report they need, not just what educators believe that they need. When schools develop interventions without this understanding, there can be miscommunication and a mismatch between program goals and family preferences that leave both sides frustrated (Lawson, 2003). Not surprisingly, similar problems can occur when parents attempt to develop interventions without fully understanding the needs and preferences of teachers. Wallace (2013) provides a case study of a group of dedicated parents who developed an ambitious, comprehensive program of engagement with a high school, including creating an enrichment center, volunteering in classrooms to help with student engagement, and providing speakers to enhance self-esteem among African American youth. However, teachers did not completely embrace the efforts, citing concerns about missed class time, wanting to continue their own afterschool efforts, and worrying that the parents would expect too much. Because teachers were not involved in the development of the program, parents inadvertently overlooked teachers' preferences and concerns. It appears

that a unidirectional approach is problematic no matter which side—family or school—initiates the activities. Careful, systematic needs assessment, with particular attention to student voice, may be an important initial step in understanding what supports are most needed.

Implications for Future Research

As noted earlier, far less research has been conducted at the secondary level compared to the elementary level. Indeed, all of the areas cited above as having implications for practice are important topics for ongoing research. Future research should attend particularly to the voice of students. For example, multiple studies have noted a decline in parent engagement from elementary to high school. However, adolescents typically have not been asked whether they would like their parents engaged and, if so, which engagement behaviors they would accept. This omission is significant because discrepancies are found on adolescent outcomes when comparing parents' ratings of their own engagement to adolescents' perceptions of parent engagement (Davidson & Cardemil, 2009; Ohannesian, Lerner, Lerner, & von Eye, 2000; Wang & Benner, 2014). Significantly, adolescents' perceptions of engagement are more influential on outcomes than parents' perceptions of their own engagement (Davidson & Cardemil, 2009). Research more thoroughly addressing youth preferences could lead to the development of more effective interventions.

Similarly, it appears that engagement behaviors vary as a function of contextual factors, such as overall academic success, school climate, and family resources and culture. (e.g., Bhargava & Witherspoon, 2015). Research must be explicit in examining the effects of race/ethnicity, mother's education, and household income, as these exert differing effects on engagement (Hill & Wang 2015; Park & Holloway, 2013).

Finally, our understanding of parent engagement at the secondary level may be enhanced by careful integration of constructs across the educational, developmental, and sociological literatures. As is seen in the studies reviewed here, parent, adolescent, and teacher characteristics interact with school and community variables differentially across the developmental period to produce academic and behavioral outcomes. Longitudinal studies are needed that systematically examine the transactions among substantive subsets of these individual level variables within specific community contexts.

Conclusions

Parent engagement is an important factor influencing academic achievement, social/emotional outcomes, and high school completion rates. While

there are negative outcomes for too little parent engagement, there also can be negative effects for parent engagement behaviors that do not support adolescents' developing autonomy. It is important for schools to reach out to parents and support them in ways that are developmentally appropriate for their students. This should be accomplished through multiple vehicles so that all parents can access the information, especially those who traditionally have had difficulty navigating school systems. Teachers should receive in-service training that promotes more positive attitudes about families and engagement efforts and teaches communication strategies that support the development of positive family–school connections. There are still many questions related to factors influencing parent engagement at the secondary level. As we develop our understanding of adolescents' perceptions of and preferences for parent engagement and the roles that variables such as parent–adolescent relationship quality, adolescents' invitations for engagement, and family resources play in predicting parent engagement, we will be better positioned to produce positive outcomes for all students.

References

Adams, K. S., & Christenson, S. L. (2000). Trust and the family–school relationship: Examination of parent–teacher differences in elementary and secondary grades. *Journal of School Psychology, 38,* 477–497. doi:10.1016/S0022-4405(00)00048-0

Advancement Via Individual Determination (AVID). (2012). *AVID overview*. Retrieved from http://www.avid.org/sta_overview.html

Altschul, I. (2011). Parental involvement and the academic achievement of Mexican American youths: What kinds of involvement in youths' education matter most? *Social Work Research, 35,* 159–170. doi:10.1093/swr/35.3.159

Anderson, K. J., & Minke, K. M. (2007). Parent involvement in education: Toward an understanding of parents' decision making. *The Journal of Educational Research, 100,* 311–323. doi:10.3200/JOER.100.5.311-323

Anguiano, R. P. V. (2004). Families and schools: The effect of parental involvement on high school completion. *Journal of Family Issues, 25,* 61–85. doi:10.1177/0192513X03256805

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development, 67,* 1206–1222. doi:10.1111/j.1467-8624.1996.tb01791.x

Barge, J. K., & Loges, W. E. (2003). Parent, student, and teacher perceptions of parental involvement. *Journal of Applied Communication Research, 31,* 140–163. doi:10.1080/00909880320000645 97

Barnard, W. M. (2004). Parent involvement in elementary school and educational attainment. *Children and Youth Services Review, 26,* 39–62. doi:10.1016/j.childyouth.2003.11.002

Bear, G. G. (2015). Preventive classroom management. In E. T. Emmer & E. J. Sabornie (Eds.), *Handbook of classroom management* (2nd ed., pp. 15–39). New York, NY: Routledge.

Benner, A. D., Boyle, A. E., & Sadler, S. (2016). Parental involvement and adolescents' educational success: The roles of prior achievement and socioeconomic status. *Journal of Youth and Adolescence, 45*(6), 1053–1064.

Bergman, D. J. (2013). Comparing the effects of suburban and urban field placements on teacher candidates' experiences and perceptions of family engagement in middle and high schools. *School Community Journal, 23*(2), 87–112. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Bernhardt, P. E. (2013). The Advancement Via Individual Determination (AVID) program: Providing cultural capital and college access to low-income students. *School Community Journal, 23,* 203–222. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Bhargava, S., & Witherspoon, D. P. (2015). Parental involvement across middle and high school: Exploring contributions of individual and neighborhood characteristics. *Journal of Youth and Adolescence, 44,* 1701–1719. doi:10.1007/s10964-015-0334-9

Bradley-Geist, J. C., & Olson-Buchanan, J. B. (2014). Helicopter parents: An examination of the correlates of over-parenting of college students. *Education and Training, 56,* 314–328. doi:10.1108/ET-10-2012-0096

Brody, G. H., Flor, D. L., & Gibson, N. M. (1999). Linking maternal efficacy beliefs, developmental goals, parenting practices, and child competence in rural single-parent African American families. *Child Development, 70,* 1197–1208. doi:10.1111/1467-8624.00087

Camacho-Thompson, D., Gillen-O'Neel, C., Gonzales, N. A., & Fuligni, A. J. (2016). Financial strain, major family life events, and parental academic involvement during adolescence. *Journal of Youth and Adolescence, 45*(6), 1065–1074.

Catsambis, S., & Garland, J. E. (1997). *Parental involvement in students' education during middle school and high school* (Report No. 18). Baltimore, MD: Johns Hopkins University, Center for Research on the Education of Students Placed at Risk.

Chan, C. S., Rhodes, J. E., Howard, W. J., Lowe, S. R., Schwartz, S. E. O., & Herrera, C. (2013). Pathways of influence in school-based mentoring: The mediating role of parent and teacher relationships. *Journal of School Psychology, 51,* 129–142. doi:10.1016/j.jsp.2012.10.001

Cheung, C. S.-S., & Pomerantz, E. M. (2011). Parents' involvement in children's learning in the United States and China: Implications for children's academic and emotional adjustment. *Child Development, 82,* 932–950. doi:10.1111/j.1467-8624.2011.01582.x

Connors, L. J., & Epstein, J. L. (1994). *Taking stock: Views of teachers, parents, and students on school, family, and community partnerships in high schools* (Report No. 25). Baltimore, MD: Johns Hopkins University.

Crosnoe, R. (2005). Academic orientation and parental involvement in education during high school. *Sociology of Education, 74,* 210–230. doi:10.2307/2673275

Davidson, T. M., & Cardemil, E. V. (2009). Parent–child communication and parental involvement in Latino adolescents. *The Journal of Early Adolescence, 29,* 99–121. doi:10.1177/0272431608324480

Dearing, E., Sibley, E., & Nguyen, H. N. (2015). Achievement mediators of family engagement in children's education: A family–school–community systems model. In S. M. Sheridan & E. M. Kim (Eds.), *Processes and pathways of family–school partnerships across development* (pp. 17–39). Cham, Switzerland: Springer International. doi:10.1007/978-3-319-16931-6_2

Deković, M. (1999). Parent–adolescent conflict: Possible determinants and consequences. *International Journal of Behavioral Development, 23,* 977–1000. doi:10.1080/01650259 9383630

Deslandes, R., & Bertrand, R. (2005). Motivation of parent involvement in secondary level schooling. *The Journal of Educational Research, 98,* 164–175.

Deslandes, R., Potvin, P., & Leclerc, D. (1999). Family characteristics as predictors of school achievement: Parental involvement as a mediator. *McGill Journal of Education, 34,* 135–153. Retrieved from http://mje.mcgill.ca/article/view/8474/6407

Deslandes, R., Royer, E., Turcotte, D., & Bertrand, R. (1997). School achievement at the secondary level: Influence of parenting style and parent involvement in schooling. *McGill Journal of Education, 32,* 191–208. Retrieved from http://mje.mcgill.ca/article/view/8377

Dietrich, J., Kracke, B., & Nurmi, J.-E. (2011). Parents' role in adolescents' decision on a college major: A weekly diary study. *Journal of Vocational Behavior, 79,* 134–144. doi:10.1016/j.jvb.2010.12.003

Dietrich, J., & Salmela-Aro, K. (2013). Parental involvement and adolescents' career goal pursuit during the post-school transition. *Journal of Adolescence, 36,* 121–128. doi:10.1016.j.adolescence.2012.10.009

Dodge, K. A., Greenberg, M. T., & Malone, P. S. (2008). Testing an idealized dynamic cascade model of the development of serious violence in adolescence. *Child Development, 79,* 1907–1927. doi:10.1111/j.1467-8624.2008.01233.x

Doren, B., Gau, J. M., & Lindstrom, L. E (2012). The relationship between parent expectations and postschool outcomes of adolescents with disabilities. *Exceptional Children, 79,* 7–23.

Doyle, A. B., & Markiewicz, D. (2005). Parenting, marital conflict, and adjustment from early- to mid-adolescence: Mediated by adolescent attachment style? *Journal of Youth and Adolescence, 34,* 97–110. doi:10.1007/s10964-005-3209-7

Duchesne, S., & Ratelle, C. (2010). Parental behaviors and adolescents' achievement goals at the beginning of middle school: Emotional problems as potential mediators. *Journal of Educational Psychology, 102,* 497–507. doi:10.1037/a0019320

Englund, M. M., Egeland, B., & Collins, W. A. (2008). Exceptions to high school dropout predictions in a low-income sample: Do adults make a difference? *Journal of Social Issues, 64,* 77–93. doi:10.1111/j.1540-4560.2008.00549.x

Epstein, J. L. (1991). Effects on student achievement of teachers' practices of parent involvement. In S. Silvern (Ed.), *Advances in reading/language research, Vol. 5: Literacy through family, community, and school interaction* (pp. 261–276). Greenwich, CT: JAI Press.

Falbo, T., Lein, L., & Amador, N. A. (2001). Parental involvement during the transition to high school. *Journal of Adolescent Research, 16,* 511–529. doi:10.1177/0743558401165006

Fan, X. (2001). Parental involvement and students' academic achievement: A growth modeling analysis. *The Journal of Experimental Education, 70,* 27–61. doi:10.1080/00220970109599497

Fanti, K. A., Henrich, C. C., Brookmeyer, K. A., & Kuperminc, G. P. (2008). Toward a transactional model of parent–adolescent relationship quality and adolescent psychological adjustment. *Journal of Early Adolescence, 28,* 252–276. doi:10.1177/0272431607312766

Ferrara, M. M. (2015). Parent involvement facilitators: Unlocking social capital wealth. *School Community Journal, 25,* 29–51. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Flouri, E., & Buchanan, A. (2003). The role of father involvement and mother involvement in adolescents' psychological well-being. *British Journal of Social Work, 35,* 399–406. doi:10.1093/bjsw/33.3.399

Froiland, J. M., & Davison, M. L. (2016). The longitudinal influences of peers, parents, motivation, and mathematics course-taking on high school math achievement. *Learning and Individual Differences, 50,* 252–259. doi:10.1016/j.lindif.2016.07.012

Gecas, V. (1971). Parental behavior and dimensions of adolescent self-evaluation. *Sociometry, 34,* 466–482. doi:10.2307/2786193

Gecas, V., & Schwalbe, M. L. (1986). Parental behavior and adolescent self-esteem. *Journal of Marriage and Family, 48,* 37–46. doi:10.2307/352226

Gibson, D. M., & Jefferson, R. N. (2006). The effect of perceived parental involvement and the use of growth-fostering relationships on self-concept in adolescents participating in GEAR UP. *Adolescence, 41*(1), 111–125.

Goldkind, L., & Farmer, G. L. (2013). The enduring influence of school size and school climate on parents' engagement in the school community. *School Community Journal, 23*(1), 233–244. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Gordon, M. S., & Cui, M. (2012). The effect of school-specific parenting processes on academic achievement in adolescence and young adulthood. *Family Relations, 61,* 728–741. doi:10.1111/j.1741-3729.2012.00733.x

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology, 99,* 532–544. doi:10.1037/0022-0663.99.3.532

Halsey, P. A. (2005). Parent involvement in junior high schools: A failure to communicate. *American Secondary Education, 34*(1), 57–69.

Hanover Research. (2014). *Effective family and community engagement strategies*. Retrieved from www.ctschoolchange.org/publications

Harris, A., & Goodall, J. (2008). Do parents know they matter? Engaging all parents in learning. *Educational Research, 50,* 277–289. doi:10.1080/00131880802309424

Hill, N. E. (2015). Family–school relationships during adolescence: Clarifying goals, broadening conceptualizations, and deepening impact. In S. M. Sheridan, & E. M. Kim (Eds.), *Processes and pathways of family–school partnerships across development.* (pp. 41–59). Cham, Switzerland: Springer International. doi:10.1007/978-3-319-16931-6_3

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45,* 740–763. doi:10.1037/a0015362

Hill, N. E., & Wang, M. (2015). From middle school to college: Developing aspirations, promoting engagement, and indirect pathways from parenting to post high school enrollment. *Developmental Psychology, 51*(2), 224–235.

Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education? *Review of Educational Research, 67,* 3–42. doi:10.3102/00346543067001003

Hoover-Dempsey, K. V., Walker, J. M. T., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, A. S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal, 106,* 105–130. doi:10.1086/499194

Jeynes, W. H. (2005). Effects of parental involvement and family structure on the academic achievement of adolescents. *Marriage and Family Review, 37,* 99–116. doi:10.1300/J002v37n03_06

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement. *Urban Education, 42,* 82–110. doi:10.1177/0042085906293818

Keijsers, L., & Poulin, F. (2013). Developmental changes in parent–child communication throughout adolescence. *Developmental Psychology, 49*, 1–8. doi:10.1037/a0032217

Keith, T. Z., Keith, P. B., Quirk, K. J., Sperduto, J., Santillo, S., & Killings, S. (1998). Longitudinal effects of parent involvement on high school grades: Similarities and differences across gender and ethnic groups. *Journal of School Psychology, 36,* 335–363. doi:10.1016/S0022-4405(98)00008-9

Kim, E. M., Sheridan, S. M., Kwon, K., & Koziol, N. (2013). Parent beliefs and children's social–behavioral functioning: The mediating role of parent–teacher relationships. *Journal of School Psychology, 51,* 175–185. doi:10.1016/j.jsp.2013.01.003

Kreider, H., Caspe, M., Kennedy, S., & Weiss, H. (2007). *Family involvement in middle and high school students' education*. Cambridge, MA: Harvard Family Research Project.

Laird, R. D., Pettit, G. S., Bates, J. E., & Dodge, K. A. (2003). Parents' monitoring relevant knowledge and adolescents' delinquent behavior: Evidence of correlated developmental changes and reciprocal influences. *Child Development, 74,* 752–768. doi:10.1111/1467-8624.00566

Lareau, A., & Muñoz, V.L. (2012). "You're not going to call the shots:" Structural conflicts between the principal and the PTO at a suburban elementary school. *Sociology of Education, 85*, 201–218. doi:10.1177/0038040711435855

Lawson, M. A. (2003). School–family relations in context: Parent and teacher perceptions of parent involvement. *Urban Education, 38,* 77–133. doi:10.1177/0042085902238687

LeMoyne, T., & Buchanan, T. (2011). Does "hovering" matter? Helicopter parenting and its effect on well-being. *Sociological Spectrum, 31,* 399–418. doi:10.1080/02732173.2011.547038

Mac Iver, M. A., Epstein, J. L., Sheldon, S. B., & Fonseca, E. (2015). Engaging families to support students' transition to high school: Evidence from the field. *The High School Journal, 99*(1), 27–45.

Mapp, K. L., Johnson, V. R., Strickland, C. S., & Meza, C. (2010). High school family centers: Transformative spaces linking schools and families in support of student learning. In W. Jeynes (Ed.), *Family factors and the educational success of children* (pp. 336–366). New York, NY: Routledge.

McGue, M., Elkins, I., Walden, B., & Iacono, W. G. (2005). Perceptions of the parent–adolescent relationship: A longitudinal investigation. *Developmental Psychology, 41,* 971–984. doi:10.1037/0012-1649.41.6.971

Morin, H. K., Bradshaw, C. P., & Berg, J. K. (2015). Examining the link between peer victimization and adjustment problems in adolescents: The role of connectedness and parent engagement. *Psychology of Violence, 5*(4), 422–432.

Moroni, S., Dumont, H., Trautwein, U., Niggli, A., & Baeriswyl, F. (2015). The need to distinguish between quantity and quality in research on parental involvement: The example of parental help with homework. *The Journal of Educational Research, 108*(5), 417–431.

Nelson, L. J., Padilla-Walker, L. M., & Nielson, M. G. (2015). Is hovering smothering or loving? An examination of parental warmth as a moderator of relations between helicopter parenting and emerging adults' indices of adjustment. *Emerging Adulthood, 3,* 1–4. doi:10.1177/2167696815576458

Ohannesian, C. M., Lerner, J. V., Lerner, R. M., & von Eye, A. (2000). Adolescent–parent discrepancies in perceptions of family functioning and early adolescent self-competence. *International Journal of Behavioral Development, 24,* 362–372. doi:10.1080/01650250050118358

Ouimette, M. Y., Feldman, J., & Tung, R. (2006). Collaborating for high school student success: A case study of parent engagement at Boston Arts Academy. *School Community Journal, 16*(2), 91–114. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Padilla-Walker, L. M., & Nelson, L. J. (2012). Black hawk down?: Establishing helicopter parenting as a distinct construct from other forms of parental control during emerging adulthood. *Journal of Adolescence, 35,* 1177–1190. doi:10.1016/j.adolescence.2012.03.007

Parent Teacher Association. (2010). *National standards for family–school partnerships*. Retrieved from http://www.pta.org/programs/content.cfm?ItemNumber=3126

Park, S., & Holloway, S. D. (2013). No parent left behind: Predicting parental involvement in adolescents' education within a sociodemographically diverse population. *The Journal of Educational Research, 106,* 105–119. doi:10.1080/00220671.2012.667012

Ramirez, A. Y. (2001). "Parent involvement is like apple pie": A look at parental involvement in two states. *The High School Journal*, *85*(1), 1–9.

Schiffrin, H. H., Liss, M., Miles-McLean, H., Geary, K. A., Erchull, M. J., & Tashner, T. (2014). Helping or hovering? The effects of helicopter parenting on college students' well-being. *Journal of Child and Family Studies, 23,* 548–557. doi:10.1007/s10826-013-9716-3

Schwartz, J. L. (2009). *Stories of university parental involvement from those not flying in helicopters: The lived experience of parents of first-generation Latina college students* (Doctoral dissertation). Available from ProQuest Dissertations & Theses A&I (Order No. 3374869).

Senechal, M., & Young, L. (2008). The effect of family literacy interventions on children's acquisition of reading from kindergarten to grade 3: A meta-analytic review. *Review of Educational Research*, *78*, 880–907. doi:10.3102/0034654308320319

Shadach, E., & Ganor-Miller, O. (2013). The role of perceived parental over-involvement in student test anxiety. *European Journal of Psychology of Education, 28,* 585–596. doi:10.1007/s10212-012-0131-8

Sheldon, S. B., & Epstein, J. L. (2005). Involvement counts: Family and community partnerships and mathematics achievement. *The Journal of Educational Research, 98*(4), 196–206.

Shumow, L., Lyutykh, E., & Schmidt, J. A. (2011). Predictors and outcomes of parental involvement with high school students in science. *School Community Journal, 21*(2), 81–98. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Shumow, L., & Miller, J. D. (2001). Parents' at-home and at-school academic involvement with young adolescents. *The Journal of Early Adolescence, 21,* 68–91. doi:10.1177/0272431601021001004

Shumow, L., & Schmidt, J. A. (2014). Parent engagement in science with ninth graders and with students in higher grades. *School Community Journal, 24,* 17–36. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Strayhorn, T. L. (2010). The role of schools, families, and psychological variables on math achievement of Black high school students. *The High School Journal, 93,* 177–194.

Symeou, L, Roussounidou, E., & Michaelides, M. (2012). "I feel much more confident now to talk with parents": An evaluation of in-service training on teacher–parent communication. *School Community Journal, 22*(1), 65–88. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Van Ingen, D. J., Freiheit, S. R., Steinfeldt, J. A., Moore, L. L., Wimer, D. J., Knutt, A. D.,… Roberts, A. (2015). Helicopter parenting: The effect of an overbearing caregiving style on peer attachment and self-efficacy. *Journal of College Counseling, 18,* 7–20. doi:10.1002/j.2161-1882.2015.00065.x

Vega, D., Moore, J. L., III, & Miranda, A. H. (2015). Who really cares? Urban youths' perceptions of parental and programmatic support. *School Community Journal, 25,* 53–72. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Vyverman, V., & Vettenburg, N. (2009). Parent participation at school: A research study on the perspectives of children. *Childhood, 16,* 105–123. doi:10.1177/0907568208101693

Walker, J. M. T., Wilkins, A. S., Dallaire, J. R., Sandler, H. M., & Hoover-Dempsey, K. V. (2005). Parental involvement: Model revision through scale development. *The Elementary School Journal, 106,* 85–104. doi:10.1086/499193

Wallace, M. (2013). High school teachers and African American parents: A (not so) collaborative effort to increase student success. *The High School Journal, 96*(3), 195–208.

Wang, Y. (2015). A trend study of the influences of parental expectation, parental involvement, and self-efficacy on the English academic achievement of Chinese eighth graders. *International Education, 44*(2), 45–68.

Wang, M.-T., Brinkworth, M., & Eccles, J. (2013). Moderating effects of teacher–student relationship in adolescent trajectories of emotional and behavioral adjustment. *Developmental Psychology, 49,* 690–705. doi:10.1037/a0027916

Wang, M.-T., Hill, N., & Hofkens, T. (2014). Parental involvement and African American and European American adolescents' academic, behavioral, and emotional development in secondary school. *Child Development, 85,* 1–18. doi:10.1111/cdev.12284

Wang, M.-T., & Sheikh-Khalil, S. (2014). Does parental involvement matter for student achievement and mental health in high school? *Child Development, 85,* 610–625. doi:10.1111/cdev.1215

Wang, Y., & Benner, A. D. (2014). Parent–child discrepancies in educational expectations: Differential effects of actual versus perceived discrepancies. *Child Development, 85,* 891–900. doi:10.1111/cdev.12171

Woods, L. L., Sylvester, L., & Martin, J. E. (2010). Student-directed transition planning: Increasing student knowledge and self-efficacy in the transition planning process. *Career Development for Exceptional Individuals, 33*(2), 106–114.

Xu, J. (2002). Do early adolescents want family involvement in their education? Hearing voices from those that matter most. *Elementary School Journal, 12*(1), 53–72.

Xu, J. (2005). Homework emotion management reported by high school students. *School Community Journal, 15*(2), 21–36. Retrieved from http://www.schoolcommunitynetwork.org/SCJ.aspx

Krista L. Jensen is a school psychology doctoral student at the University of Delaware. Her research interests include adolescents' perceptions of parent engagement and parent engagement at the secondary level. Correspondence concerning this article may be addressed to Krista L. Jensen, School of Education, University of Delaware, Newark, DE 19716, or email kjensen@udel.edu

Kathleen M. Minke is a professor and coordinator of the PhD in Education and School Psychology programs at the University of Delaware. She serves as a consultant to Delaware's Positive Behavior Supports initiative and is a past president of the National Association of School Psychologists. Her research interests include family–school collaboration, parent–teacher relationships, and positive behavior supports.

Copyright of School Community Journal is the property of Academic Development Institute and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Children and Youth Services Review 93 (2018) 291–300

Contents lists available at ScienceDirect

Children and Youth Services Review

journal homepage: www.elsevier.com/locate/childyouth

Early Head Start dosage: The role of parent-caregiver relationships and family involvement

Shinyoung Jeon[a,*], Ji Young Choi[b], Diane M. Horm[a], Sherri Castle[a]

[a] Early Childhood Education Institute, University of Oklahoma-Tulsa, Tulsa, OK, United States
[b] Human Development and Family Studies, Iowa State University, Ames, IA, United States

ARTICLE INFO

Keywords:
Early Head Start dosage
Parent-caregiver relationships
Family involvement
Baby FACES

ABSTRACT

The present study examined predictors and pathways relevant to children's dosage in Early Head Start (EHS) using the dataset from the Early Head Start Family and Child Experiences Study (Baby FACES; Vogel & Boller, 2009–2012). Dosage was defined in two ways: (a) leaving EHS early, before age eligibility ended, and (b) the total length of EHS enrollment. This study first examined factors predicting children's dosage of EHS with a particular focus on parent-caregiver relationships captured when children were age 1. Second, this study examined a potential mediational role of family involvement on the association between parent-caregiver relationships and EHS dosage, controlling for child and family characteristics. Findings showed that children from families with higher risks were more likely to leave EHS early and were enrolled in EHS for less time. Children were less likely to leave EHS early when their caregivers reported positive relationships with parents when children were age 1. However, the length of EHS enrollment was not predicted by parent-caregiver relationships as reported either by parents or caregivers. Findings from mediation models showed that caregiver-reported positive parent-caregiver relationships were associated with the higher level of family involvement during EHS which, in turn, predicted both lower rates of early leaving and longer length of EHS enrollment. These results indicate that promoting initial positive parent-caregiver relationships and encouraging family involvement in EHS may be important for maximizing children's EHS dosage, which has been shown to be beneficial for the development of children in EHS.

1. Introduction

It has been well documented that children growing up in poverty are at greater risk for early developmental concerns than their peers growing up in more affluent families (Duncan & Magnuson, 2013; Nelson & Sheridan, 2011). As a way to reduce early developmental gaps, early childhood educators, developmental psychologists, and economists have emphasized the importance of quality experiences in early care and education (ECE) for children from economically disadvantaged families (Duncan & Magnuson, 2013; Heckman, Pinto, & Savelyev, 2013; Lee, Zhai, Brooks-Gunn, Han, & Waldfogel, 2014). This body of research demonstrating the importance of quality ECE experiences (Duncan & Magnuson, 2013; Duncan & Sojourner, 2013; Love et al., 2005) serves as a justification for federally-funded early childhood intervention programs such as Early Head Start (EHS) and Head Start (HS) that aim to reduce developmental gaps predicted by family income.

EHS is a federally-funded child development and family support program for low-income families serving pregnant women, infants, and toddlers up to age 3. EHS aims to promote young children's development and strengthen families through encouraging their engagement in the program. Because the length of participation in ECE programs can influence the potential benefits that families and children attain (Berkel, Mauricio, Schoenfelder, & Sandler, 2011; Yazejian, Bryant, Freel, Burchinal, & the Educare Learning Network Investigative Team, 2015), EHS has emphasized a longer duration of program participation for children and families (Vogel et al., 2015). Despite the fact that families are eligible for 3 years of EHS services once they are deemed qualified, considerable numbers of EHS children and families leave EHS early (i.e., children exit before turning age 3), which is a phenomenon that is not yet fully understood. Although there are a limited number of studies on why families choose to leave EHS early, a recent study (Caronongan, Moiduddin, West, & Vogel, 2014) found that 35% of children left EHS early (i.e., dropout) and that early EHS leavers had more family risks than EHS graduates. Caronongan et al.'s study provided valuable information regarding differences in family and program

* Corresponding author.
E-mail address: syjeon@ou.edu (S. Jeon).

https://doi.org/10.1016/j.childyouth.2018.07.032
Received 27 March 2018; Received in revised form 28 July 2018; Accepted 30 July 2018
Available online 01 August 2018
0190-7409/ © 2018 Elsevier Ltd. All rights reserved.

characteristics between early leavers and EHS graduates; however, given the high rate of attrition in EHS, additional research is needed to further identify risk and protective factors associated with and predicting the likelihood of early leaving in EHS (Xue et al., 2015). Additionally, research on the total length of enrollment in EHS that considers family risk and protective factors can provide information to help programs maximize children's dosage in EHS.

1.1. Importance of dosage in early childhood programs

Considering that developmental gaps between children from disadvantaged and affluent families can emerge as early as 9 months of age (Halle et al., 2009), entering early and staying longer in high-quality ECE programs may be particularly important for children growing up in low-income families. Empirical studies have demonstrated that the length of enrollment in ECE programs is important for promoting early development for children experiencing poverty (Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2001; Hill, Brooks-Gunn, & Waldfogel, 2003; Wen, Leow, Hahs-Vaughn, Korfmacher, & Marcus, 2012; Yazejian et al., 2015; Zaslow et al., 2010). For example, prior research found that early entry into a high-quality ECE program and longer lengths of enrollment led to better receptive language skills of dual language learners from low-income families (Yazejian et al., 2015). Similarly, Wen and colleagues found that children who attended 2 years of HS showed higher scores in academic and social outcomes than children who attended 1 year. These studies suggest that the maximum dosage of EHS including the full eligible period, birth to age 3, may be important for fully realizing the benefits of EHS on child development (Caronongan et al., 2014; Zaslow et al., 2010). Although the existing research documents the importance of entering programs earlier and staying longer, we have limited understanding of the factors associated with children's dosage in EHS.

In addition, few studies have investigated children's dosage considering both program graduation status and the total length of enrollment from program entry to exit. Program graduation status is critical for children from low income families because these children have limited access to high quality ECE programs (Fuller, Holloway, & Liang, 1996; Loeb, Fuller, Kagan, & Carrol, 2004). Furthermore, EHS allows eligible children and families to enroll at any point between birth to age 3, thus the length of enrollment could vary among children who graduate from EHS. Due to differences in enrollment dates, it is possible that children who graduate from EHS have shorter lengths of EHS experience than children who left EHS early. Because a minimum dosage of exposure to high-quality ECE is needed to associate with child developmental outcomes (Zaslow et al., 2010), research on the length of enrollment in EHS can enhance understanding about children's actual dosage of EHS. Given that, the present study investigated both dosage indicators, (a) early leaving status, addressing an attrition/ dropout issue, and (b) the length of enrollment, capturing the actual length of staying in the EHS programs.

1.2. Parent-caregiver relationships in early childhood programs

The ecological framework (Bronfenbrenner & Morris, 1998) posits that features of the mesosystem—which consists of interactions among proximal environments, such as parent-caregiver relationships—influence individuals' functioning and development. In line with the ecological framework, studies have found that positive relationships between parents and home visitors were associated with lower rates of dropouts and longer duration of participation in ECE programs (Brand & Jungmann, 2014; Girvin, Depanfilis, & Daining, 2007; Korfmacher, Green, Spellmann, & Thornburg, 2007). Parent and caregiver relationships can be important predictors of adjustment and participation in ECE programs. For example, a report from the Harvard Family Research Project emphasized the importance of family-school relationships in ECE, because it affects children's adjustment and satisfaction in ECE programs (Weiss, Caspe, & Lopez, 2006).

Relationships between parents and caregivers in ECE include multiple dimensions such as establishing trust, frequent and open communication, and collaboration (Elicker, Noppe, Noppe, & Fortner-Wood, 1997; Elicker, Wen, Kwon, & Sprague, 2013; Shanti, 2017), which reflect an overall collaborative partnership between parents and a caregiver (Girvin et al., 2007; Korfmacher et al., 2007).

Lang and colleagues showed that parent-teacher relationships that reflect collaboration between home and child care were associated with higher levels of family involvement in center-based child care programs for infants and toddlers (Lang, Schoppe-Sullivan, & Jeon, 2017). Shanti (2017) also emphasized collaboration based on trust and communication as an important aspect of positive parent-caregiver relationships that can lead to parents to engage in EHS programs. It is plausible that well-established relationships between parents and caregivers can lead to better adjustment of children and families in EHS, which may prevent families and children from dropping out or leaving early and foster longer participation in EHS.

1.3. Characteristics of children who leave early childhood programs early

Prior empirical research has found that certain characteristics of children and families are associated with the likelihood of early leaving in ECE (Brand & Jungmann, 2014; Caronongan et al., 2014; Roggman, Cook, Peterson, & Raikes, 2008). For example, Caronongan and colleagues found that early EHS leavers, relative to EHS graduates, were more likely to have family risk characteristics, such as living in a household with lower income-to-need ratios, more housing instability (moving at least once during their first year of EHS), and more maternal demographic risk factors including being teen mothers. Roggman and colleagues' study on families who drop out of home-based EHS services also showed similar differences between early leavers and graduates. They found that children with disabilities and children raised by single mothers or by mothers who had poor English skills were more likely to drop out of EHS home-based programs. Their study also found that the families who left early received services that were less focused on child development and that the parents were less engaged and more distracted during home visits.

In addition to child and family characteristics, the existing literature highlights the potential role of program factors. For example, Brand and Jungmann's (2014) study of a German home visiting program found that while family characteristics, such as higher family social economic status (SES), maternal age, grandmother's participation during home visits, and lower numbers of maternal risk factors, predicted lower attrition rates, process quality features of the intervention, such as unsuccessful visit attempts, level of maternal involvement in home visits, and satisfaction with services, accounted for a larger amount of the variance explaining dropout. Thus, in addition to child and family characteristics, process quality features of the program including indices of the level of family involvement are important predictors of children's dosage in EHS.

1.4. Mediational role of family involvement

Family involvement in ECE programs refers to participation in a variety of activities and family leadership opportunities (U.S. Department of Health and Human Services [USDHHS], 2017). Family involvement in ECE often includes parental volunteering and participation in school events and activities, as well as active parent-caregiver communication about children's learning and development both at home and in the ECE program (Fantuzzo, Tighe, & Childs, 2000). Family involvement can be considered a type of partnership in ECE because parents and caregivers share responsibilities to support young children's development (Westmoreland, Bouffard, O'Carroll, & Rosenberg, 2009).

Although the focus of few studies, family involvement may explain

how parent-caregiver relationships predict children's dosage in ECE settings. Two lines of research support the notion that family involvement may act as a mechanism on the association between parent-caregiver relationships and children's dosage. First, empirical research has shown that secure and well-formed parent-teacher relationships were associated with increased family involvement in multiple settings including center-based infant and toddler care, HS, and kindergarten (Lang et al., 2017; Nzinga-Johnson, Baker, & Aupperlee, 2009; Shanti, 2017; Waanders, Mendez, & Downer, 2007). Indeed, the USDHHS (2018) has emphasized the need to strengthen parent and staff relationships because they are associated with family involvement in HS programs. Another line of research evidence has demonstrated that more active family involvement is associated with lower rates of program dropout and longer length of participation in home visiting programs (Brand & Jungmann, 2014; Damashek, Doughty, Ware, & Silovsky, 2011; Roggman et al., 2008). For example, Brand and Jungmann's study found that families who were reported by home visitors to be less involved in home visits were more likely to drop out of the program than families who were reported to be highly involved.

These two lines of research showing links among family-caregiver relationships, family involvement, and ECE participation provide the statistical prerequisite (MacKinnon, Fairchild, & Fritz, 2007) for a potential mediational role of family involvement between parent-caregiver relationships and children's dosage in ECE programs. However, given that a limited number of studies have simultaneously examined the associations among parent-caregiver relationships, family involvement, and children's ECE dosage, particularly for infants and toddlers, we have a limited understanding of whether family involvement acts as a mechanism explaining the association between parent-caregiver relationships and dosage. Longitudinal investigations of parent-caregiver relationships and family involvement in EHS with consideration of various child and family characteristics would contribute to the understanding of predictors and mechanisms of early leaving and the length of enrollment in EHS.

1.5. Current study

The present study strives to address this gap in the current literature. This study examined predictors and pathways relevant to children's dosage of EHS by using the dataset of the Early Head Start Family and Child Experiences Study (Baby FACES; Vogel & Boller, 2009–2012). Dosage was defined in two ways: (a) leaving EHS early before age eligibility ended and (b) the length of EHS enrollment. This study first explored the parent-caregiver relationships established early in EHS (i.e., when children were age 1) as a potential predictor of children's EHS dosage. This focus is based on empirical research demonstrating that positive parent-caregiver relationships predicted lower rates of early leaving (Brand & Jungmann, 2014; Girvin et al., 2007) and longer lengths of participation (Brand & Jungmann, 2014; Korfmacher et al., 2007) in ECE programs. Second, this study examined whether parent involvement in EHS acts as a mediator on the association between parent-caregiver relationships and children's EHS dosage. This examination is based on studies showing that parent-teacher relationships were associated with parent involvement in ECE programs (Korfmacher et al., 2007; Lang et al., 2017; Shanti, 2017; Waanders et al., 2007), which in turn associated with lower rates of attrition and longer length of participation in ECE programs (Brand & Jungmann, 2014; Damashek et al., 2011; Roggman et al., 2008). Specifically, the following research questions were examined.

RQ1. Are parent-caregiver relationships and child and family characteristics associated with children's EHS dosage?

RQ2: Does family involvement mediate the association between parent-caregiver relationships and children's EHS dosage, controlling for child and family characteristics?

2. Methods

2.1. Data source

This study used the Early Head Start Family and Child Experiences Study (Baby FACES; Vogel & Boller, 2009–2012) dataset, which is a large longitudinal secondary dataset providing comprehensive information on EHS children and families as well as characteristics of the EHS programs. In the Baby FACES study, a nationally representative sample of 89 programs and 976 children was selected based on the stratified clustered sampling approach. Given the use of this sampling approach, the EHS programs (level 2) were recruited first and families and children (level 1) were selected from these consented programs. Approximately 94% of recruited programs consented, and approximately 88.5% parents of selected children consented to participate in the Baby FACES study (Cannon, Murphy, Bloomenthal, & Vogel, 2014). Baby FACES includes two cohorts of children based on their age at the time of the spring site visit (i.e., data collection) in EHS: (a) a newborn cohort, which includes pregnant women and children who were no more than 8 weeks of age at the spring 2009 site visit, and (b) a 1-year-old cohort, which includes children who were between the ages of 10 and 15 months at the spring 2009 site visit. Starting spring 2009, data were collected each spring until the children turned age 3 (2011 for a 1-year-old cohort [ages 1 to 3] and 2012 for a newborn cohort [age 0 to 3]).

The child-level data provides comprehensive information regarding child and family characteristics obtained from interviews with parents and caregiver (i.e., home visitors or teachers). In addition, information about parent-caregiver relationships, from both parents and caregivers, was gathered via interviews when EHS children were ages 1, 2, and 3. Home visitors and teachers completed self-administrated questionnaires including questions about family involvement when children were at ages 1, 2 and 3. Field staff, with at least 40 h of data collection training, conducted interviews with parents, staff, and program directors. The Baby FACES technical report provides more detailed information on sampling, data collection procedures, and measures (Vogel et al., 2011a).

2.2. Sample

For the purposes of this study, children were excluded if their parents refused to answer whether their children exited the EHS programs before the end of their age eligibility for the program ($n = 2$). We further excluded children who left EHS between age 0 to 1 and thus, had no opportunity to provide data on our key independent variables (i.e., parent-caregiver relationships and family involvement in EHS; $n = 56$) given the data collection design used in Baby FACES. We did not impute the values due to the violation of basic assumption for imputation that is missing at random. In addition, we excluded children who did not have a valid value for a sampling weight (W0910CSNT) that represents a sample who were eligible at baseline and had parental consent in 2009 and 2010 ($n = 3$). This sample selection criteria resulted in the total sample size of 915 children in 88 programs.

The sample for the present study enrolled in EHS from July 2007 to June 2009. For cohort 0 ($n = 136$) approximately 40% of children (or pregnant mothers) enrolled in the EHS programs between November 2008 and January 2009. For cohort 1 ($n = 779$) approximately 40% of children enrolled in the EHS programs between July and September in 2008. The rest of the study sample varied in the date of enrollment because EHS allows families to enroll in the EHS programs at any point up until the child turns age 3 (Cannon et al., 2014). Based on the sampling strategy used in the Baby FACES, however, a possible maximum entry age for children should not exceed 15 months of age at the first data collection point in spring 2009. Exit dates of early leavers in this study varied as well. However, the majority of children graduated EHS at the end of school year in spring 2011 or 2012. Among graduates

who were in a newborn cohort, approximately 80% graduated after May in 2012. Among graduates who were in a 1-year-old cohort, approximately 70% graduated between June and August 2011.

2.3. Measures

2.3.1. EHS dosage

We used two indicators of dosage for the current study: (a) *leaving EHS early* and (b) *the length of enrollment in EHS*. Leaving early, which is a binary variable, indicates children left EHS before the end of their age eligibility (i.e., prior to the child's third birthday; 1 = early leavers, 0 = EHS graduates). The length of enrollment in EHS, a continuous variable, indicates the total months children stayed enrolled in EHS. This variable was generated by Baby FACES based on children's entry and exit dates. Such data was collected from multiple resources (e.g., weekly service reports from caregivers, annual roster checks in preparation for Baby FACES site visits, and parent reports; Caronongan et al., 2014).

2.3.2. Parent-caregiver relationships

The Parent-Caregiver Relationship Scale (PCRS; Elicker et al., 1997) was independently completed by parents and caregivers when children were age 1. The PCRS was used to measure the perceived quality of relationships between parents and caregivers. The PCRS captures multiple dimensions of parent-caregiver partnership and collaboration, including trust and confidence, communication, respect/acceptance, caring, competence/knowledge, and shared values (Cannon et al., 2014). In Baby FACES, a shortened version that included 13 of the original 35 items was used. The shorten version was generated by the Baby FACES research team to appropriately measure the important dimensions of parent-caregiver relationships with the least burden for respondents. The shorten versions demonstrated acceptable internal consistency and reliability (Cannon et al., 2014). Survey items for parents include "If there is a problem, my child's teacher or home visitor and I always talk about it soon", "I like to work closely with child's teacher or home visitor in order to gain a better understanding of child", and "I always trust child's teacher or home visitor to give him/her good consistent care." Teachers or home visitors responded to similar questions including "If there is a problem, this child's parent and I always talk about it soon", "I like to work closely with this child's parent in order to gain a better understanding of his/her child", "I feel this child's parent genuinely cares for him/her", "This child's parent has the knowledge and skills needed to be a good parent", "This child's parent gives me valuable suggestions about working with his/her child", and "I admire the way this parent works with his/her child". All items were rated from 1 = "strongly disagree" to 5 = "strongly agree", and the average score of 13 items was used in the current study. The internal consistency of the PCRS rated by parents and caregivers when the EHS children were age 1 were .93 and .94, respectively (Vogel et al., 2011b).

2.3.3. Family involvement

Home visitors or teachers reported the level of family involvement during the past 6 months each spring when the child was age 1, 2, and 3. Baby FACES provides the average score of family involvement for each child during their time in EHS; family involvement scores for each year are not provided. Reponses include 1 = "Family was not involved in the program at all", 2 = "Family's involvement in the program was consistently low throughout the past 6 months – the family keep some appointments but missed or canceled frequently, family did not actively engage in home visits and group activities, and child was often absent from the center", 3 = "Family's involvement in the program varied during the past 6 months – the family was sometimes highly involved in the program, and at other times the family's involvement was low"; and 4 = "Family was consistently highly involved in the program over the past 6 months- the family kept most appointments and actively engaged in home visits and group activities, and child attended center regularly".

2.3.4. Baseline child and family characteristics

Parent-reported child characteristics used in this study include child gender, race (European American, African American, Hispanic, or mixed or other race/ethnicity), dual language learning (DLL) status (yes vs. no), and disability status (yes vs. no). In addition, child age cohort (newborn cohort vs. 1-year-old cohort) and service types that the child received at age 1 (center-based, home-based, family child care, or combination service) were used. Parent-reported family characteristics used in this study include urbanity of location where family lives (urban vs. rural), mother pregnant with focus child at enrollment (yes vs. no), household income-to-needs ratio, mother's education (less than high school vs. high school or higher); teen or single mother status (yes vs. no); mother's employment status (yes vs. no); family welfare recipient status (yes vs. no); the number of maternal demographic risks (e.g., teen mother, single mother, maternal education level, maternal employment status, and family welfare status), parental depression as measured by Center for Epidemiologic Studies Depression Scale Short Form (Ross, Mirowsky, & Huber, 1983); drug use (yes vs. no); parenting stress measured by Parenting Stress Index-Short Form (Abidin, 1995); parental immigrant status (both, either, or none of parents are immigrants); moving at least once during a given year (yes vs. no); intergenerational family status (yes vs. no); parental physical health (fair vs. poor health), and social support which was the average score of 13 items (e.g., someone to help with food shopping, meals, cleaning house, bills, child care, and etc.). We used family characteristics data reported at the first data collection for the present study. Most data were first collected in spring 2009 except for maternal employment status and parenting stress, which were collected when children were age 1 (i.e., spring 2009 for a 1-year-old cohort and spring 2010 for a newborn cohort).

2.4. Data analyses

Preliminary analyses were conducted using Stata 14. First, mean difference and chi-square tests were employed to check whether EHS early leavers and graduates had differences in reported perceptions of parent-caregiver relationships and family involvement, and in their child and family characteristics (see Table 1). Second, distribution graphs were generated to visualize the length of enrollment in EHS for early leavers and EHS graduates (see Fig. 1). A sampling weight (W0910CSNT) was applied to all preliminary analyses.

For the main analyses, 20 imputed datasets were generated using multiple imputation (MI: Rubin, 1987) to handle item-level missing data. All variables used in this study and additional auxiliary variables were included in the MI model. To identify the proportion of variance explained by EHS programs (level 2) in each of two outcome variables (i.e., leaving EHS early and the length of enrollment in EHS), intra-class correlation coefficients (ICCs) were calculated. Results showed that 3% and 9% of the variances were explained by EHS programs for the status of early leaving and the length of enrollment in EHS, respectively.

Given the ICCs, this study employed a multilevel modeling (MLM) approach to the complex survey data using M*plus* to investigate RQs 1 and 2. We used program IDs as a cluster to correct standard errors and a chi-square test of model fit to account for issues regarding the non-independence of observations (i.e., clustering) and the unequal selection probability of the sample (Muthén & Muthén, 2012; Muthén & Satorra, 1995). For RQ1, we conducted direct models (model 1–1 and 1–2), and then for RQ2 we examined mediation models (model 2–1 and 2–2). Specifically, we employed a categorical complex analysis (i.e., multilevel logistic regression) for model 1–1 and 2–1 because the outcome variable was a binary variable (i.e., early leavers vs. graduates). Thus, results were presented in odd ratios for the two models (model 1–1 and 2–1). Fig. 2 depicts the mediation model that we examined for RQ 2. Associations between parent-caregiver relationships at age 1 and

Table 1
Parent-caregiver partnership and child and family characteristics between EHS early leavers and graduates.

	EHS early leavers		EHS graduates		*F*	Chi-Square
	(*n* = 304, 31%)		(*n* = 611, 69%)		(*df*)	(*df*)
	Missing %	*M (SE)*	*Missing %*	*M (SE)*		
Partnership between parents-caregivers (P—C)						
Caregiver-reported P—C relationships (age 1)	9.21	4.10 (.04)	5.73	4.24 (.02)	8.66** (1851)	
Parent-reported P—C relationships (age 1)	22.04	4.48 (.03)	12.11	4.53 (.02)	1.12 (1773)	
Family involvement	10.53	3.31 (.04)	0.33	3.47 (.02)	9.56** (1880)	
Child characteristics in spring 2009						
Cohort (1 = 1-year-old cohort)	0	81.87%	0	86.78%		3.77 (1)
Gender (1 = male)	0.33	53.91%	0	52.43%		0.17 (1)
Race	10.86	–	2.62	–		3.75 (3)
European American		37.78%		35.62%		–
African-American		14.30%		19.77%		–
Hispanic		36.27%		34.35%		–
Mixed/other		11.65%		10.26%		–
DLL status (1 = yes)	10.86	36.76%	2.13	41.41%		1.63 (1)
Disability (at age 1)	36.51	5.29%	24.88	8.41%		1.83 (1)
Service type	10.86		5.73			3.95 (3)
Center based		41.20%		43.94%		
Home based		51.63%		52.02%		
Family child care		0.76%		0.56%		
Combination		6.41%		3.48%		
Family characteristics in spring 2009						
Urbanity (1 = urban)	0	64.16%	0	65.18%		0.08 (1)
Mother pregnant with focus child at enrollment (1 = yes)	0	27.89%	0	33.92%		3.30 (1)
Family income to needs ratio	25.66	2.12 (.08)	17.35	2.51 (.07)	11.99***(1730)	
Mother education (1 = less than high school)	19.74	39.06%	11.13	36.77%	.	0.36 (1)
Teen mother (1 = yes)	18.75	58.20%	5.24	50.14%		4.39 (1)
Single mother (1 = yes)	17.43	47.66%	10.15	44.79%		0.55 (1)
Maternal employment (1 = unemployed; at age 1)	22.70	51.81%	12.77	51.07%		0.03 (1)
Welfare recipient status (1 = yes)	21.05	71.23%	13.75	68.60%		0.52 (1)
Mom risk factors	21.38	2.61 (.09)	4.91	2.34 (.05)	6.30* (1819)	
Parental depression	21.05	5.55 (.41)	13.26	5.30 (.25)	0.25 (1769)	
Parental drug use (1 = yes)	21.05	7.57%	13.26	7.17%		0.03 (1)
Parenting stress (at age 1)	24.67	11.06 (.39)	14.57	10.63 (.22)	0.92 (1750)	
Parental psychological risk	22.37	1.55 (.04)	8.18	1.43 (.03)	3.72 (1796)	
Parent immigrant status	21.38		13.75			1.31 (2)
Both of parents are immigrants		19.05%		19.08%		–
Either of parents is an immigrant		11.90%		9.21%		–
None of parents are immigrants		69.05%		71.71%		–
Move at least once last year (1 = yes)	21.05	40.30%	13.09	27.58%		12.11** (1)
Intergenerational family (1 = yes)	17.43	12.77%	9.98	18.99%		4.57* (1)
Parental physical health (1 = fair or poor health)	21.38	15.88%	13.75	9.49%		6.49* (1)
Social support	21.05	30.79 (.57)	13.09	30.82 (.34)	0.01 (1770)	

Notes. A sampling weight (W0910CSNT) was applied. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

the average score of family involvement during their time in EHS were defined as path A (i.e., from caregiver-perceived relationships to family involvement) and B (i.e., from parent-perceived relationships to family involvement). The association between family involvement and the dosage of EHS (i.e., leaving early or the length of enrollment) was defined as C in the model. Mediational effects (A*C or B*C) were calculated by multiplying A and C for model 2–1 and by multiplying B and C for model 2–2. Same as with the preliminary analyses, the sampling weight (W0910CSNT) was applied for all main analyses. Both indirect and direct models were just-identified models (i.e., $df = 0$), thus alternative fit indices were perfect (i.e., CFI = 1 and TLI = 1). To test fits for the path models, we generated over-identified models by fixing non-significant paths as 0 which allowed the degree of freedom in the models. We found that over-identified models also showed the almost perfect fit indices (e.g., CFI = 0.99 and TLI = 1) as the just-identified models. Due to the fact that the over-identified models were not a theory-based approach, we maintained the just-identified models.

3. Results

3.1. Preliminary findings

Our preliminary findings showed that 31% of the children in this study left EHS before their age eligibility expired. Table 1 presents the differences between EHS early leavers and graduates in parent-caregiver relationships reported by caregivers and parents when children were age 1, average family involvement during their time in EHS, and child and family characteristics at the beginning of the first data collection in spring 2009. Our findings showed that relative to EHS graduates, early leavers were more likely to be from households with lower income-to-need ratios, experience housing instability (indicated by moving once or more in the first year of attending EHS) and have mothers with more demographic risks. In addition, early EHS leavers had less positive parent-caregiver relationships at age 1 reported by caregivers and lower family involvement during their time in EHS than EHS graduates. On the other hand, EHS graduates, relative to early EHS leavers, were more likely from an intergenerational family and have parents who had good physical health.

As shown in Fig. 1, there were variations in the length of EHS

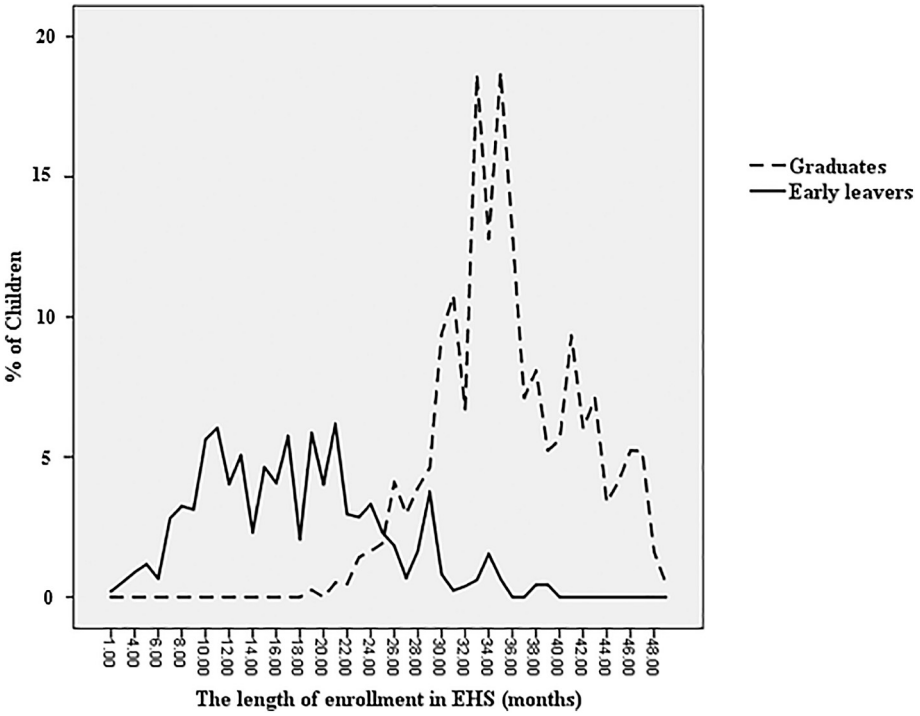


Fig. 1. The length of enrollment in EHS between early leavers and graduates.
Notes. A sampling weight (W0910CSNT) was applied.

enrollment by children's early leaving status. Early leavers were enrolled in EHS for an average of 17 months (SD = 7.81) with a range between .50 months to 39.60 months. EHS graduates experienced EHS for an average of 33 months (SD = 5.29) with a range between 19.50 months and 44 months. A few early leavers (3%) stayed in EHS longer than 36 months and all of them entered EHS when their mothers were pregnant. Some graduates (4%) were in EHS less than 24 months because they entered the EHS programs at or after age 1. Regardless of early leaving, the length of enrollment in EHS can vary for each child due to different entry time points. However, the early leaving and the length of enrollment in EHS were strongly correlated to each other in a negative direction ($r = -0.78$, $p < .001$).

3.2. Predictors for child dosage of Early Head Start

To investigate RQ1, two direct models were separately examined for each dosage outcome (see model 1–1 and 1–2 in Table 2). Model 1–1 showed that early leavers were 27% less likely to experience a positive parent-caregiver relationship as perceived by the caregiver than EHS graduates. In addition, early leavers were 18% and 64% more likely to experience maternal demographic risks and moving experience in the first year of EHS, respectively, compared to graduates. Early leavers were 13% less likely to have higher income to need ratio than graduates. Early leavers were 48% less likely to be African-American than graduates.

Findings from model 1–2 showed that parent-caregiver relationships reported by parents and caregivers did not predict the length of enrollment in EHS; however, a few family characteristics were found to be significant. In addition to family income-to-needs ratio and moving experiences, children who were from an intergenerational family, whose mothers were pregnant with the study child when they enrolled, and whose parents had good physical health tended to stay longer in EHS.

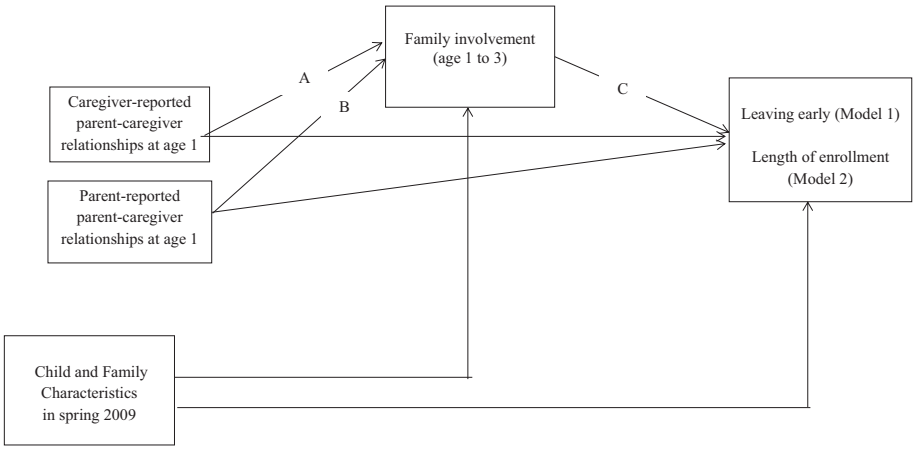


Fig. 2. Mediation model.

Table 2
Direct models.

	Model 1–1		Model 1–2
	Direct model		Direct model
	Leaving early		Length of enrollment
	b (SE)	*Odds ratio*	b (SE)
Partnership between parents-caregivers (P−C)			
Caregiver-reported P−C relationships (age 1)	−.32* (.14)	*.73**	.90 (.48)
Parent-reported P−C relationships (age 1)	−.07 (.18)	*.94*	.05 (.69)
Child Characteristics			
Gender (1 = male)	.00 (.17)	*1.00*	.15 (.59)
European American (ref) vs. African-American	−.65** (.24)	*.52***	1.81* (.84)
European American (ref) vs. Hispanic	−.27 (.21)	*.76*	1.08 (.76)
European American (ref) vs. Mixed/other	−.19 (21)	*.82*	−.15 (.91)
Family Characteristics			
Urbanity (1 = urban)	−.05 (.18)	*.95*	−.19 (.63)
Mother pregnant with focus child at enrollment (1 = yes)	−.30 (.17)	*.74*	10.43*** (.63)
The number of maternal risk factors	.17* (.08)	*1.18**	−.39 (.28)
Parental psychological risks	.23 (.14)	*1.26*	−.82 (.52)
Parental health (1 = fair or poor health)	.46 (.25)	*1.59*	−2.13* (.96)
Family income to needs ratio	−.14* (.07)	*.87**	.48* (.24)
Move at least once last year (1 = yes)	.48** (.18)	*1.64***	−1.47* (.67)
Intergenerational family (1 = yes)	−.44 (.25)	*.64*	1.68* (.78)

Notes. P-C: Parent-Caregiver. A sampling weight (W0910CSNT) was applied. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

3.3. Mediational role of family involvement

To answer RQ 2, two mediation models were separately investigated for each dosage outcome (see model 2–1 and 2–2 in Table 3). Results from the both mediation models showed that parent-caregiver relationships reported by caregivers when EHS children were age 1 were associated with family involvement in EHS controlling for child and family characteristics. Findings from model 2–1 showed that caregiver-perceived parent-caregiver relationships were positively associated with family involvement, which, in turn, was associated with a lower rate of EHS early leaving (i.e., mediational effect: b = −0.11, SE = 0.05, $p < .05$). Findings from model 2–2 showed that caregiver reported parent-caregiver relationships were positively associated with family involvement, which, in turn, was positively associated with the length of enrollment in EHS (i.e., mediational effect: b = 0.40, SE = 0.20, $p < .05$).

4. Discussion

EHS is a federally-funded child development and family support program for low-income children and their families offered at no cost to eligible families. Nonetheless, a considerable number of children and families leave the program before their eligibility ends (Caronongan et al., 2014). Given the importance of children's dosage in ECE programs, especially for children living in poverty, there is a need to understand this phenomenon. Using data from Baby FACES 2009, the present study examined whether parent-caregiver relationships and child and family characteristics predict children's EHS dosage measured in two ways–leaving EHS early and the length of enrollment in EHS. This study also adds to the sparse literature that has examined the mediational role of family involvement on the association between parent-caregiver relationships and EHS dosage, controlling for various child and family characteristics.

4.1. Early leaving and length of enrollment in Early Head Start

Our study showed that 31% of the study sample left EHS early before they turned age 3 and were no longer eligible. This is a slightly lower percentage than those found in other studies (e.g., 36% in Roggman et al., 2008; 38.5% in Brand & Jungmann, 2014). The difference may be because we excluded children who left EHS between birth to age 1 (i.e., approximately 6%) in this sample. These children did not have data on our main study variables (i.e., parent-caregiver relationships and family involvement) due to the data collection design used for Baby FACES. We did not impute the data as the missingness on these variables were not random.

The length of children's enrollment in EHS varied based on dates of children's entry and exit (see Fig. 1). All children who stayed in EHS more than 38 months were enrolled in EHS when their mothers were pregnant. Even among the EHS graduates, their length of EHS participation varied widely (from 19.50 to 44 months) due to difference in the timing of entry (i.e., enrollment date) to the EHS program. In addition, even though most of the graduates completed the EHS program after either spring 2011 (newborn cohort) or 2012 (1-year-old cohort), there were a few variations in graduation dates. More variance in the length of enrollment in EHS was found among early leavers. Some children (3%) who left early stayed in EHS fewer than 6 months, while some early leavers (2%) stayed longer than 36 months. The results showed that early leaving does not necessarily reflect shorter length of enrollment in EHS. These findings indicate that it is not only important to prevent early leaving but also to encourage early participation in EHS in order to maximize the total length of children's enrollment in EHS. Nevertheless, it should be also noted that early leaving and length of EHS experience were found to be strongly correlated ($r = -0.78$).

Although this study provides a descriptive picture of children's dosage in EHS, it is limited in providing in-depth information on what types of experience early leavers had after exiting EHS, and late starters experienced before joining EHS. Future studies examining family choices for early care options outside of EHS and their association quality and other characteristics would enhance our understanding about whether EHS families could indeed experience better quality in EHS and thus reap enhanced benefit from longer participation in EHS.

4.2. Factors predicting children's dosage in Early Head Start

This study examined factors predicting the dosage of children's EHS experiences including parent-caregiver relationships when children were age 1. Our findings from the direct models (model 1–1 and 1–2) showed that parent-caregiver relationships perceived by caregivers when children were age 1 directly predicted low rates of early leaving, but not the length of enrollment in EHS (b = 0.90, SE = 48, $p = .051$). In line with findings from previous studies, these results imply that better partnerships between parents and teachers could prevent children and families from dropping out of EHS programs before the services are scheduled to end (Brand & Jungmann, 2014; Girvin et al., 2007; Korfmacher et al., 2007).

It should be noted that parent-caregiver relationships were found to be a significant predictor for children's EHS dosage only when the relationship was reported by caregivers but not by parents. It is plausible that caregiver-reported relationships reflect their relative relationships with parents in comparison to other parents of children in their room. In other words, caregivers may have rated their relationships with parents in comparison to their relationships with other parents while parents may not have reference point to rate their relationships with

Table 3
Mediation Models.

	Model 2–1			Model 2–2	
	Mediation model			Mediation model	
	Family involvement	Leaving early		Family involvement	Length of enrollment
	b (SE)	b (SE)	*Odds ratio*	b (SE)	b (SE)
Partnership between parents-caregivers (P−C)					
Path A: Caregiver-reported P−C relationships (age 1)	.31*** (.04)	−.21 (.16)	*.81*	.33*** (.04)	.03 (.03)
Path B: Parent-reported P−C relationships (age 1)	−.02 (.05)	−.07 (.18)	*.93*	−.02 (.04)	.00 (.04)
Path C: Family involvement	–	−.35* (.15)	*.70**	–	.08* (.04)
Child Characteristics					
Gender (1 = male)	.04 (.04)	.01 (.17)	*1.01*	.04 (.03)	.01 (.03)
European American (ref) vs. African-American	.02 (.07)	−.66** (.23)	*.52***	.02 (.05)	.07* (.03)
European American (ref) vs. Hispanic	.14** (.05)	−.22 (.21)	*.80*	.12* (.04)	.04 (.04)
European American (ref) vs. Mixed/other	.07 (.08)	−.17 (22)	*.84*	.04 (.04)	−.01 (.03)
Family Characteristics					
Urbanity (1 = urban)	−.06 (.06)	−.08 (.18)	*.93*	−.05 (.05)	−.01(.03)
Mother pregnant with focus child at enrollment (1 = yes)	.05 (.05)	−.29 (.17)	*.75*	.04 (.04)	.51*** (.03)
The number of maternal risk factors	−.02 (.02)	.16 (.09)	*1.17*	−.05 (.05)	−.04 (.04)
Parental psychological risks	−.03 (.04)	.23 (.14)	*1.25*	−.03 (.04)	−.05 (.04)
Parental health (1 = fair or poor health)	.03 (.06)	.48 (.26)	*1.61*	.02 (.04)	−.07* (.03)
Family income to needs ratio	.00 (.02)	−.14* (.07)	*.87**	.01 (.04)	.07* (.04)
Move at least once last year (1 = yes)	−.04 (.05)	.49** (.18)	*1.63***	−.03 (.04)	−.07* (.03)
Intergenerational family (1 = yes)	−.05 (.06)	−.46 (.25)	*.63*	−.03 (.04)	.07* (.03)

Notes. P-C: Parent-Caregiver. A sampling weight (W0910CSNT) was applied. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

caregivers. In addition, parent-reported parent-caregiver relationships have been found to be biased toward positive ratings (Korfmacher et al., 2007). Descriptive results also showed that caregiver-reported parent-caregiver relationships (*SD* = .60) showed larger variation in the responses than parent-reported parent-caregiver relationships (SD = .51). The correlation between parent-reported parent-caregiver relationship and caregiver-reported parent-caregiver relationships was significant but relatively low in its magnitude ($r = .14$ $p < .01$). It is important to note that the items for measuring the relationship were slightly different for parents and caregivers. Specifically, in this study the parent-caregiver relationships reported by caregivers captured caregivers' evaluation of an initial collaboration with the parents as well as caregivers' respect and acceptance of parental attitudes and knowledge of child-rearing (e.g., “I feel this child's parent genuinely cares for him/her”, “This child's parent has the knowledge and skills needed to be a good parent”, “This child's parent gives me valuable suggestions about working with his/her child”, and “I admire the way this parent works with his/her child”). Our findings suggest that systematic supports may be needed for caregivers to provide additional attention to families who are less likely to have an initial collaborative relationship with them. In line with these findings, EHS programs could ensure EHS caregivers (i.e., home visitors and teachers) help parents know and understand the value of building collaborative partnerships with caregivers. Specifically, for caregivers, EHS could reinforce knowledge of why and how to build positive relationships with parents.

Our findings regarding associations between family characteristics and early leaving are in line with the results of the profile study conducted by Caronongan et al. (2014) using Baby FACES. Our findings further showed that family characteristics including family income-to-need ratios and moving were associated with both early leaving and the length of enrollment in EHS. These findings are consistent with previous research showing associations of parental SES, including household income and residential instability, with the retention rate of ECE programs (Brand & Jungmann, 2014; Roggman et al., 2008). Residential instability, identified by families' frequent moving, can jeopardize children's length of enrollment in the same educational setting (Astone & McLanahan, 1994; Roggman et al., 2008).

Compared to early leaving, the length of enrollment in EHS was found to be associated with a greater number of family characteristics. This study found that mothers who began the EHS programs when they were pregnant with the focus child were more likely to show longer enrollment in EHS than mothers who entered the program after their children were born, implying that early entry can promote the total length of enrollment in ECE programs. Findings also showed that children who were from an intergenerational family and had physically healthy parents were more likely to show longer enrollment in EHS. It is plausible that children from intergenerational families may have additional support to have a more stable care experience (Brand & Jungmann, 2014). Conversely, poor parental physical health could hamper parents' ability to keep a regular schedule and thus their children's participation in EHS. In sum, understanding family characteristics that are associated with early leaving or the length of enrollment in EHS are important to provide tailored services to maximize EHS participation for these at-risk groups. This findings highlight the importance of EHS programs monitoring the family risk factors identified in the present study and understanding that families at high risk likely require tailored services to keep the child participating in the program.

4.3. Mediational role of family involvement

This study further examined the mediational role of family involvement on the association between parent and caregiver relationships and children's EHS dosage. The mediation model showed that more positive parent-caregiver relationships as perceived by caregivers when children were age 1were associated with increased family involvement during their time in EHS, which in turn was associated with lower rates of leaving EHS early and a longer length of enrollment in EHS, controlling for varying child and family characteristics.

These findings are consistent with previous studies showing that trust and collaborative relationships between parents and caregivers can promote overall family involvement in ECE (Henrich & Blackman-Jones, 2006; Nzinga-Johnson et al., 2009; Waanders et al., 2007). Furthermore, this result is supported by a current research finding that collaborative work between parent and teacher predicted higher levels of family involvement in ECE programs for infants and toddlers (Lang et al., 2017). In addition, our findings demonstrating that active family

involvement in EHS was associated with the reduced likelihood of early leaving and longer enrollment in EHS were in line with previous findings (Brand & Jungmann, 2014; Roggman et al., 2008). These results imply that parent-caregiver relationships, which reflect a good partnership between parents and caregivers and a higher level of family involvement, are important factors to consider to maintain enrollment of children until their EHS eligibility ends, thereby maximizing the children's dosage. Specifically, the results suggest that parents who collaborated well with caregivers and had positive parental attitudes may be more likely to engage with EHS, which could help children and families remain in the programs. If that is the case, EHS programs could emphasize the importance of parent-caregiver relationships at the initial stage of the program, because the strength of this relationship may lead to active parental participation in the programs.

5. Limitations and future study

Several limitations are worth noting. First, the results of the present study cannot assume causal effects on EHS dosages. In addition, even though The Baby FACES included representative sample of EHS, possible unobserved selection bias, such as self-selection in attending the EHS programs, could not be eliminated in this study. We attempted to reduce this bias by including several control variables. Second, the measurement of family involvement included 1 item which indicated the level of family involvement at each time point (i.e., child age 1, 2 and 3). However, the average family involvement rating was reliable with other indices of program engagement including items such as participating as a member of parent council; volunteering in classrooms; doing maintenance, chores, or shopping for the program; helping at special events and activities; attending special events; and attending parent education/group activities. The internal consistency of average family involvement ratings across 3 years with the other 6 items measuring program involvement at age 1, 2, and 3 were 0.75, 0.74, and 79, respectively. Third, while we included a comprehensive list of child and family characteristics in the analytical models, there could be other non-addressable or unexamined family circumstances for leaving EHS early that are not available in Baby FACES, such as loss of child or fetus, changes in child custody, moving out of service area, lack of time due to employment, and enrolling in other services (Brand & Jungmann, 2014). Last, this study was based on a secondary analysis of the Baby FACES dataset and thus criticisms of the Baby FACES data identified by the Baby FACES research team (Xue et al., 2015) are relevant to consider. However, the identified challenges including reliability and validity issues of measures, few observation tools with established psychometric properties, and lack of in-depth information on program implementation and management, are somewhat tangential to this study based on the number and type of variable extracted from the dataset.

5.1. Implications of findings for practice and policy

*Despite these limitations, findings from the present study provide empirical evidence that caregiver-perceived parent-caregiver relationships and other family characteristics (*e.g.*, risk and protective factors) predict the likelihood of early leaving and the length of enrollment in EHS. Moreover, this study demonstrated that positive parent-caregiver relationships as perceived by caregivers were associated with increased levels of family involvement in EHS which, in turn, predicted* lower rates of early leaving and longer durations of EHS enrollment. *The results of this study suggest that positive parent-caregiver relationships and family involvement should be emphasized as important processes to promote children's dosage in EHS.*

EHS has been acknowledged as an important early intervention program for low-income pregnant women and families with infants and toddlers. Since EHS begun in 1995, it has shown positive influcences on both children and their parents' outcomes(Beeber et al., 2010; *Love* et al., 2005). *However, the effectiveness of EHS can be maximized when the programs are fully implemented for families and children they serve. This study suggests that understanding the important roles of parent-caregiver initial relationships and family involvement in EHS may be crucial for EHS programs to consider and adequately address in their programming to prevent EHS families and children from leaving early and to maximize the length of possible enrollment in EHS. In addition, early enrollment in EHS and family risk factors, such as residential instability and poor parental physical health, should receive focused attention to foster longer durations of EHS enrollment.*

Future studies can further identify mechanisms underlying early leaving and the length of enrollment in EHS. For example, future studies can examine when (i.e., exact time points) children are most likely to leave early in EHS and what time-varying factors can predict the timing of early leaving and the length of enrollment in EHS.

Acknowledgements

This research was supported by the Early Childhood Education Institute (ECEI) at the University of Oklahoma (OU) at Tulsa with funding from OU's University Strategic Organization initiative and the George Kaiser Family Foundation. A portion of findings were presented at the 2018 American Educational Research Association (AERA) conference held in New York City in April 2018.

References

Abidin, R. R. (1995). *Parenting stress index manual* (3rd ed). Odessa, FL: Psychological Assessment Resources.

Astone, N. M., & McLanahan, S. S. (1994). Family structure, residential mobility, and school dropout: A research note. *Demography, 31*(4), 575–584. https://doi.org/10.2307/2061791.

Beeber, L. S., Holditch-Davis, D., Perreira, K., Schwartz, T. A., Lewis, V., Blanchard, H. et al. Goldman, B. D. (2010). Short-term in-home intervention reduces depressive symptoms in Early Head Start Latina mothers of infants and toddlers. *Research in Nursing & Health, 33*(1), 60–76.

Berkel, C., Mauricio, A. M., Schoenfelder, E., & Sandler, I. N. (2011). Putting the pieces together: An integrated model of program implementation. *Prevention Science, 12*(1), 23–33. https://doi.org/10.1007/s11121-010-0186-1.

Brand, T., & Jungmann, T. (2014). Participant characteristics and process variables predict attrition from a home-based early intervention program. *Early Childhood Research Quarterly, 29*(2), 155–167. https://doi.org/10.1016/j.ecresq.2013.12.001.

Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon (Vol. Ed.), (5th ed). *Theoretical models of human development: vol. 1. Handbook of child psychology* (pp. 993–1028). New York, NY: Wiley.

Campbell, F. A., Pungello, E. P., Miller-Johnson, S., Burchinal, M., & Ramey, C. T. (2001). The development of cognitive and academic abilities: Growth curves from an early childhood educational experiment. *Developmental Psychology, 37*(2), 231. https://doi.org/10.1037/0012-1649.37.2.231.

Cannon, J., Murphy, L., Bloomenthal, A., & Vogel, C. A. (2014). *Baby FACES data users' guide* (Mathematica Reference No. 06432.136) Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Retrieved from http://www.icpsr.umich.edu/cgi-bin/file?comp=none&study=36074&ds=0&file_id=1195516&path=CCEERC.

Caronongan, P., Moiduddin, E., West, J., & Vogel, C. A. (2014). Children in Early Head Start and Head Start: A profile of early leavers. Baby FACES and FACES 2009 Research Brief. OPRE Report 2014-54. Washington, DC. Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Retrieved from https://www.acf.hhs.gov/sites/default/files/opre/bfaces_faces_stayers_leavers_brief_cleared_8_21_14_1.pdf.

Damashek, A., Doughty, D., Ware, L., & Silovsky, J. (2011). Predictors of client engagement and attrition in home-based child maltreatment prevention services. *Child Maltreatment, 16*(1), 9–20. https://doi.org/10.1177/1077559510388507.

Duncan, G. J., & Magnuson, K. (2013). Investing in preschool programs. *The Journal of Economic Perspectives, 27*(2), 109–132. https://doi.org/10.1257/jep.27.2.109.

Duncan, G. J., & Sojourner, A. J. (2013). Can intensive early childhood intervention programs eliminate income-based cognitive and achievement gaps? *Journal of Human Resources, 48*(4), 945–968. https://doi.org/10.3368/jhr.48.4.945.

Elicker, J., Noppe, I. C., Noppe, L. D., & Fortner-Wood, C. (1997). The parent–caregiver relationship scale: Rounding out the relationship system in infant child care. *Early Education and Development, 8*(1), 83–100. https://doi.org/10.1207/s15566935eed0801_7.

Elicker, J., Wen, X., Kwon, K. A., & Sprague, J. B. (2013). Early Head Start relationships: Association with program outcomes. *Early Education and Development, 24*(4), 491–516. https://doi.org/10.1080/10409289.2012.695519.

Fantuzzo, J., Tighe, E., & Childs, S. (2000). Family involvement questionnaire: A multivariate assessment of family participation in early childhood education. *Journal of Educational Psychology, 92*(2), 367–376. https://doi.org/10.1037/0022-0663.92.2.367.

Fuller, B., Holloway, S. D., & Liang, X. (1996). Family selection of child-care centers: The

influence of household support, ethnicity, and parental practices. *Child Development, 67*(6), 3320–3337. https://doi.org/10.1111/j.1467-8624.1996.tb01916.x.
Girvin, H., Depanfilis, D., & Daining, C. (2007). Predicting program completion among families enrolled in a child neglect preventive intervention. *Research on Social Work Practice, 17*(6), 674–685. https://doi.org/10.1177/1049731507300285.
Halle, T., Forry, N., Hair, E., Perper, K., Wandner, L., Wessel, J., & Vick, J. (2009). *Disparities in early learning and development: Lessons from the Early Childhood Longitudinal Study–Birth Cohort (ECLS-B).* Washington, DC: Child Trends1–7.
Heckman, J., Pinto, R., & Savelyev, P. (2013). Understanding the mechanisms through which an influential early childhood program boosted adult outcomes. *The American Economic Review, 103*(6), 2052–2086. https://doi.org/10.1257/aer.103.6.2052.
Henrich, C. C., & Blackman-Jones, R. (2006). Parent involvement in preschool. In E. Zigler, W. S. Gilliam, & S. M. Jones (Eds.). *A vision for universal preschool education* (pp. 149–168). New York, NY: Cambridge University Press.
Hill, J. L., Brooks-Gunn, J., & Waldfogel, J. (2003). Sustained effects of high participation in an early intervention for low-birth-weight premature infants. *Developmental Psychology, 39*(4), 730–744. https://doi.org/10.1037/0012-1649.39.4.730.
Korfmacher, J., Green, B., Spellmann, M., & Thornburg, K. R. (2007). The helping relationship and program participation in early childhood home visiting. *Infant Mental Health Journal, 28*(5), 459–480. https://doi.org/10.1002/imhj.20148.
Lang, S. N., Schoppe-Sullivan, S. J., & Jeon, L. (2017). Examining a self-report measure of parent–teacher cocaring relationships and associations with parental involvement. *Early Education and Development, 28*(1), 96–114. https://doi.org/10.1080/10409289.2016.1195672.
Lee, R., Zhai, F., Brooks-Gunn, J., Han, W. J., & Waldfogel, J. (2014). Head start participation and school readiness: Evidence from the early childhood longitudinal study–birth cohort. *Developmental Psychology, 50*(1), 202–215. https://doi.org/10.1037/a0032280.
Loeb, S., Fuller, B., Kagan, S. L., & Carrol, B. (2004). Child care in poor communities: Early learning effects of type, quality, and stability. *Child development, 75*(1), 47–65. https://doi.org/10.1111/j.1467-8624.2004.00653.x.
Love, J. M., Kisker, E. E., Ross, C., Raikes, H., Constantine, J., Boller, K. et al. Fuligni, A. S. (2005). The effectiveness of Early Head Start for 3-year-old children and their parents: Lessons for policy and programs. *Developmental Psychology, 41*(6), 885–901. https://doi.org/10.1037/0012-1649.41.6.885.
MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual review of Psychology, 58*, 593–614. https://doi.org/10.1146/annurev.psych.58.110405.085542.
Muthén, B., & Satorra, A. (1995). Complex sample data in structural equation modeling. *Sociological Methodology, 25*, 267–316. https://doi.org/10.2307/271070.
Muthén, L. K., & Muthén, B. O. (2012). *Mplus user's guide* (5th ed.). Los Angeles, CA: Muthén & Muthén.
Nelson, C. A., & Sheridan, M. (2011). Lessons from neuroscience research for understanding causal links between family and neighborhood characteristics and educational outcomes. In G. Duncan, & R. Murnane (Eds.). *Whither opportunity? Rising inequality and the uncertain life chances of low-income children* (pp. 27–46). New York, NY: Russell Sage Foundation Press.
Nzinga-Johnson, S., Baker, J. A., & Aupperlee, J. (2009). Teacher-parent relationships and school involvement among racially and educationally diverse parents of kindergartners. *The Elementary School Journal, 110*(1), 81–91. https://doi.org/10.1086/598844.
Roggman, L. A., Cook, G. A., Peterson, C. A., & Raikes, H. H. (2008). Who drops out of Early Head Start home visiting programs? *Early Education and Development, 19*(4), 574–599. https://doi.org/10.1080/10409280701681870.
Ross, C. E., Mirowsky, J., & Huber, J. (1983). Dividing work, sharing work, and in-between: Marriage patterns and depression. *American Sociological Review, 48*(6), 809–823. Retrieved from http://www.jstor.org/stable/2095327.
Rubin, D. B. (1987). *Multiple imputation for nonresponse in surveys.* New York, NY: Wiley.
Shanti, C. (2017). Engaging parents in Early Head Start home-based programs: How do home visitors do this? *Journal of evidence-informed social work, 14*(5), 311–328. https://doi.org/10.1080/23761407.2017.1302858.
U.S. Department of Health and Human Services (USDHHS), Administration for Children and Families. (2018). Understanding family engagement outcomes: Research to practice series. Retrieved from https://eclkc.ohs.acf.hhs.gov/family-engagement/article/understanding-family-engagement-outcomes-research-practice-series
U.S. Department of Health and Human Services (USDHHS), & Administration for Children and Families (2017). Family engagement as parent involvement 2.0: Understanding the difference in terms and concepts. Retrieved from https://eclkc.ohs.acf.hhs.gov/publication/family-engagement-parent-involvement-2-0-understanding-difference-terms-concepts.
Vogel, C. A., & Boller, K. (2009–2012). *Early Head Start Family and Child Experiences Survey (Baby FACES) Spring 2009-Spring 2012. ICPSR36074-v1.* Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor]. 2015-04-30 https://doi.org/10.3886/ICPSR36074.v1.
Vogel, C. A., Boller, K., Xue, Y., Blair, R., Aikens, N., Burwick, A. et al. Stein, J. (2011a). *Learning as we go: A first snapshot of Early Head Start programs, staff, families, and children.* (Report No. 2011-7) Washington, DC: Office of Planning, research, and evaluation (OPRE), Administration for Children and Families, U.S. Department of Health and Human Services. Retrieved from https://www.acf.hhs.gov/sites/default/files/opre/as_we_go.PDF.
Vogel, C. A., Boller, K., Xue, Y., Blair, R., Aikens, N., Burwick, A.,.. & Stein, J. (2011b). Learning as we go: A first snapshot of Early Head Start programs, staff, families, and children (vol. 2: Technical Appendices). Washington, DC: Office of Planning, Research, and Evaluation (OPRE), Administration for Children and Families, U.S. Department of Health and Human Services (USDHHS). Retrieved from https://www.acf.hhs.gov/sites/default/files/opre/as_we_go_tech.pdf.
Vogel, C. A., Caronongan, P., Xue, Y., Thomas, J., Bandel, E., Aikens, N., … & Murphy, L. (2015). Toddlers in Early Head Start: A portrait of 3-year-olds, their families, and the programs serving them (Report No. 28). Washington, DC: Office of Planning, Research, and Evaluation (OPRE), Administration for Children and Families, U.S. Department of Health and Human Services. Retrieved from https://www.acf.hhs.gov/sites/default/files/opre/bfaces_age_3_vol_i_5_15_15_final_revised_508.pdf.
Waanders, C., Mendez, J. L., & Downer, J. T. (2007). Parent characteristics, economic stress and neighborhood context as predictors of parent involvement in preschool children's education. *Journal of School Psychology, 45*(6), 619–636. https://doi.org/10.1016/-j.jsp.2007.07.003.
Weiss, H., Caspe, M., & Lopez, E. (2006). *Family involvement in early childhood education.* Cambridge, MA: Harvard Family Research Project. Retrieved from http://www.hfrp.org/publications-resources/browse-our-publications/family-involvement-in-early-childhood-education.
Wen, X., Leow, C., Hahs-Vaughn, D. L., Korfmacher, J., & Marcus, S. M. (2012). Are two years better than one year? A propensity score analysis of the impact of Head Start program duration on children's school performance in kindergarten. *Early Childhood Research Quarterly, 27*(4), 684–694. https://doi.org/10.1016/j.ecresq.2011.07.006.
Westmoreland, H., Bouffard, S., O'Carroll, K., & Rosenberg, H. (2009). *Data collection instruments for evaluating family involvement.* Cambridge, MA: Harvard Family Research Project.
Xue, Y., Boller, K., Vogel, C. A., Thomas, J., Caronongan, P., & Aikens, N. (2015). *Early Head Start Family and Child Experiences Survey (Baby FACES) design options report.* (Mathematica Policy Research).
Yazejian, N., Bryant, D., Freel, K., Burchinal, M., & the Educare Learning Network Investigative Team (2015). High-quality early education: Age of entry and time in care differences in student outcomes for English-only and dual language learners. *Early Childhood Research Quarterly, 32*(3), 23–39. https://doi.org/10.1016/j.ecresq.2015.02.002.
Zaslow, M., Anderson, R., Redd, Z., Wessel, J., Tarullo, L., & Burchinal, M. (2010). *Quality dosage thresholds and features in early childhood settings: A review of the literature.* (No. cdea2df43cdf4b10bb74af4189cbab8d). Mathematica Policy Research.

Check for updates

Article

Education and Urban Society
2017, Vol. 49(1) 4–28
© The Author(s) 2016
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/0013124516630596
eus.sagepub.com
SAGE

A Meta-Analysis: The Relationship Between Parental Involvement and Latino Student Outcomes

William H. Jeynes[1,2]

Abstract

This meta-analysis of 28 studies examines the relationship between parental involvement and the academic achievement and school behavior of Latino pre-kindergarten-college-age children. Analyses determined the effect sizes for parental involvement overall and specific categories of involvement. Results indicate a significant relationship between parental involvement and academic achievement and overall outcomes, but not for school behavior. This relationship between involvement and academics existed both for younger (grades K-5) and older (secondary school and college freshman) students, as well as for certain specific components of parental involvement. Parental involvement, as a whole, was associated with better school outcomes by .52 of a standard deviation unit. The significance of these results is discussed.

Keywords

urban education, students, schools, school improvement, school reform

Parent involvement has become one of the most debated facets of education today (Ferrara, 2009; Gibson & Jefferson, 2006; Mapp, Johnson, Strickland, & Meza, 2008). The discussion over parental support for children's studies

[1]California State University, Long Beach, CA, USA
[2]The Witherspoon Institute, Princeton, NJ, USA

Corresponding Author:
William H. Jeynes, 6572 Red Coach Drive, Huntington Beach, CA 92647, USA.
Email: whjharvard@post.harvard.edu

has not been limited to educators, but has also become a salient topic among parents, social scientists, and politicians (Cowan, Cowan, Pruett, Pruett, & Wong, 2009; Hoover-Dempsey, Walker & Jones, 2002; McKenzie, 2008). Although a myriad of educators have focused on the importance of parental involvement, if children are to excel in school, no meta-analysis that focuses totally on the influence of this involvement specifically on the academic achievement and behavior of the Latino student population has ever been published in an academic journal. This reality largely contributes to a limited body of knowledge that exists regarding which aspects of parental involvement help Latino student education and just what components of this involvement are most important (Davalos, Chavez, & Guardiola, 2005; Davis-Kean, 2005; Jeynes, 2005c; McKenzie, 2008).

A growing number of studies have been done that examine the impact of parental involvement on the general population (Epstein, 2001; Henderson & Mapp, 2002; Jeynes, 2005a). A large number of these studies, however, have certain shortcomings such as focusing only on the general student population, addressing only certain components of parental engagement, or having sample sizes that are too small from which people can generalize to specific population groups such as Latinos (Gniewosz & Noack, 2012; Jasis & Ordonez-Jasis, 2012; Root & Rubin, 2010; Skalotis, 2010).

As delineated by the United Code of Law (USCS 7801(32)), parental involvement is defined as "the participation of parents in regular, two-way, and meaningful communication, involving student learning and other school activities." Joyce Epstein (2001) has defined six different types of parental involvement that include parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community. Nevertheless, subsequent research has indicated that Epstein's rubric is probably too simplistic (Jeynes, 2007b, 2010; Mapp et al., 2008; McDonald & Robinson, 2009).

Beyond undertaking a meta-analysis that assesses the overall impact of parental engagement, it is also essential to address which aspects of that emotional and psychological support are most important (Borruel, 2002; Jeynes, 2011a; Rapp & Duncan, 2012; Stacer & Perrucci, 2013). Over the last 15 years, social scientists have more specifically sought to identify the various components of parental involvement (Green, Walker, Hoover-Dempsey, & Sandler, 2007; Kaplan-Toren, 2013; Jeynes, 2007a, 2011b). Enough studies have now been done examining the specific components of parental engagement, so that is now possible to examine this issue in a meta-analysis, with reference to Latinos specifically. A previous meta-analysis (Jeynes, 2003) conducted over a decade ago examined specific components of parental involvement for students of color, that is, minority students generally, but due

to the small number of studies, not much could be concluded regarding its effects on Latinos specifically. With this background in mind, the following questions emerge. First, to what degree is parental involvement associated with higher levels of academic achievement and better personal behavior among Latino students? Second, what aspects of parental involvement help those students the most? Third, do school-based programs of parental involvement help students? Fourth, are the effects of parental involvement greater for certain ages of students? Given the importance of education and the potential that parental involvement has to help scholastic outcomes, it is vital to ascertain the extent to which aspects of parental involvement can raise Latino student achievement and which expressions can help the most.

Four Research Questions Addressed in This Study

Four research questions, therefore, emerge. More specifically, four issues are especially pertinent to parents and educators. First, is parental involvement for Latino students associated with stronger academic and behavioral outcomes? Second, are there any differences in the effects of parental involvement for these students, by grade level. Third, are school-based parental involvement programs helpful for Latino students? Fourth, what types of parental involvement expressions appear to help those students the most? The types of parental involvement are defined on the basis of those used most frequently by Epstein (2001) and other researchers, to help obtain insight about whether particular kinds of parental engagement appear to work better than others. To answer these four key questions, it is imperative to know what the overall body of research indicates. A meta-analysis is the best method for addressing this question. A meta-analysis statistically combines all the relevant existing studies on a given subject to determine the aggregated results of said research. This study utilizes meta-analysis to examine the effects of parental involvement on kindergarten through college freshman young people, addressing each of the four research questions listed.

Methods

Analytical Approach

Research methods and data analysis plan for the meta-analysis on the relationship between parental involvement and academic outcomes for Latino students. This meta-analysis examined the relationship between parental involvement in Latino youth and kindergarten to college freshman school student achievement. This meta-analysis first (Research Question 1) addressed whether there

is a statistically significant relationship between parental involvement in Latino youth and kindergarten to college student achievement. A second question assessed whether the effects of parental involvement differed by the age of the student (Research Question 2). The third analysis (Research Question 3) determined if parental involvement programs help Latino students. The final analysis addressed the effects of specific expressions of parental involvement on Latino youth (Research Question 4).

The procedures employed to conduct the meta-analysis are outlined under the heading "Analytical Approach" and the following headings are listed below: Data Collection Method, Statistical Methods, Study Quality Rating, Effect Size Statistics, and Defining of Variables.

Each study included in this meta-analysis met the following criteria:

1. It needed to examine parental involvement in a way that could be conceptually and statistically distinguished from other primary variables under consideration. For example, if a Latino family practiced parental involvement and its influence could not be statistically isolated from the other features, the study was not included in the analysis.
2. It needed to include a sufficient amount of statistical information to determine effect sizes. That is, a study needed to contain enough information so that test statistics, such as those resulting from a *t* test, analysis of variance, and so forth, were either provided in the study or could be determined from the means and measures of variance listed in the study.
3. If the study used a control group, it had to qualify as a true control group and therefore be a fair and accurate means of comparison. Moreover, if the research utilized a control group at some times but not others, only the former comparisons were included in the meta-analysis.
4. The study could be a published or unpublished study. This was to reduce the likelihood of publication bias.

Due to the nature of the criteria listed above, qualitative studies were not included in the analysis. Although qualitative studies are definitely valuable, they are difficult to code for quantitative purposes and any attempt to do so might bias the results of the meta-analysis.

Data collection method (coding and rater reliability). To obtain the studies used in the meta-analysis, a search was performed using every major social science research database (e.g., Psych Info, ERIC, Dissertation Abstracts International, Wilson

Periodicals, Sociological Abstracts, and so forth), totaling 60 data bases, to find studies examining the relationship between parental involvement and the academic achievement of youth from grades kindergarten to college freshman. The search terms included parental involvement, parents, schools, family, education, parental support, partnership, programs, communication, expectations, reading, attendance, homework, household, rules, parental style, and several other terms. Reference sections from journal articles on parental involvement were also examined to find additional research articles. Emails were also sent to each of the Education department chairs of the over 100 Research 1 universities in the United States asking them if there were any faculty in their department who had either recently completed or was just about to complete a study examining the effects of parental involvement. Although this comprehensive search yielded hundreds of articles and papers on parental involvement, nearly all of these articles were not quantitative in nature. The research team obtained a total of 41 studies that addressed the relationship under study and found 28 studies that had a sufficient degree of quantitative data to include in this meta-analysis. Among the 28 studies that possessed a sufficient degree of quantitative data to include in this meta-analysis, the total number of subjects was approximately 25,417.

A number of different characteristics of each study were included for use in this study. These characteristics included (a) report characteristics, (b) sample characteristics, (c) intervention type, (d) the research design, (e) the grade level or age of the students, (f) the outcome and predictor variables, (g) the length (in weeks) of the parental involvement program, (h) the attrition rate, and (i) the estimate of the relationship between parental involvement and academic achievement. Two coders, who had been coding for at least 10 years, coded the studies on these characteristics and had 96% agreement on their coding of the following study characteristics.

Report characteristics. Each study entry began with the name of the author of the study. Then the year the study was recorded, followed by the type of research report. Research reports were defined either as a journal article; book; book chapter; dissertation; master's thesis; government, school, or private report; conference paper; or other type of report.

Sample characteristics. Sample characteristics included the number of students sampled, their locations, and how they were selected, for example, via random selection, stratified random selection, or via advertisement.

Intervention type. The experimental or procedural manipulation used, if any, was recorded to determine the effects of parental involvement with Latino youth on student achievement.

Research design. The studies in this meta-analysis were categorized into three basic types of designs. The first type employed some type of manipulations to assess the effects of parental involvement.

The second type of design included studies that took cross-sectional measures of the effect of a parental involvement without utilizing any type of manipulation. The third type of design involved the calculation of a correlation coefficient between parental involvement and student educational outcomes.

For studies that employed a manipulation to measure the effects of parental involvement, the following were recorded: (a) the length, frequency, duration, and total number of training sessions; (b) the method of training (workshop, individual meetings, phone calls, videotape, email communication, newsletter); (c) the type of behavioral or achievement-related outcome measure (e.g., standardized achievement test, non-standardized achievement test, or class grades); (d) the unit of analysis (individual student or classroom) at which the effect size was calculated; and (e) the magnitude of the relationship between parental involvement and student achievement.

For the cross-sectional studies and correlation studies, if it was available, the following were also recorded: (a) the socio-economic status of participants in the sample and (b) the types of behavioral and academic measures that were used.

The length (in weeks) of the parental involvement assessment. This was particularly important because secondary analyses were performed to determine if there was a relationship between the length of parental involvement and the effects that emerged in various studies.

The grade level or age of the students. This was coded including means and standard deviations when they were available.

The outcome and predictor variables. The outcome and predictor variables from each study were coded to include the different ways that achievement was measured.

Attrition rate. When available, the attrition rate of each study was coded.

The estimate of the relationship between parental involvement and student achievement. The process of the effect size estimation is described in the next section.

Statistical methods and the effect size statistic. Effect sizes were computed from data in such forms as *t* tests, *F* tests, *p* levels, frequencies, and *r* values via conversion formulas provided by Glass and his colleagues (Glass, McGaw, & Smith, 1981). When results were not significant, studies sometimes reported only a significance level. In the unusual case that the direction of these not significant results was not available, the effect size were calculated to be zero.

For studies with manipulations, we used the standardized mean difference to estimate the effect of parental involvement. The *d*-index (Cohen, 1988) is a scale-free measure of the separation between two group means. Calculating the *d*-index for any comparison involved dividing the difference between the two group means by either their average standard deviation or by the standard deviation of the control group. In the meta-analysis, we subtracted the experimental group mean from the control group mean and divided the difference by their average standard deviation. As a supplement to these analyses, the Hedges' "*g*" measure of effect size was used (Hedges, 1981). As it employed the pooled standard deviation in the denominator, it customarily provided a more conservative estimate of effect size. Hedges' *g* also provided a correction factor that helped to adjust for the impact of small samples.

For studies that involved cross-sectional measures of the relationship between parental involvement and achievement, the following procedures were undertaken. For those studies that attempted to statistically equate students on other variables, the preferred measure of relationship strength was the standardized beta weight, β. These parameters were determined from the output of multiple regression analyses. If beta weights could not be obtained from study reports, the most similar measures of effect (e.g., unstandardized regression weights) were retrieved.

For studies that involved cross-sectional measures but included no attempt to statistically equate students on third variables, the results from the *t* tests, *F* tests, and correlation studies provided by the researchers in the study were used. Probability values were used as a basis for computation only if the researchers did not supply any of information on the test statistics just mentioned.

Calculating average effect sizes. A weighting procedure was used to calculate average effect sizes across all the comparisons. First, each independent effect size was first multiplied by the inverse of its variance. The sum of these products was then divided by the sum of the inverses. Then, 95% confidence intervals (CIs) were calculated. As Hedges and Vevea (1998) recommend, all the analyses were conducted using fixed-error assumptions in one analysis and applied random-error assumptions in the other.

If there was more than one effect size presented in the results section, the effect size that was chosen was based on that which referred to (a) the overall sample and (b) the purest measure of parental involvement. In the case of results that included clear statistical outliers, the presence of these outliers was acknowledged and then supplemental analyses were run without such an outlier to estimate the degree to which the presence of an outlier might have affected the results.

Tests of homogeneity were completed on the parental involvement programs to gain a sense of the consistency of specific parental involvement measures across studies.

Study quality rating. Two researchers coded the studies independently for quality, the presence of randomization, and whether both the definitional criteria for parental involvement and specific aspects of parental involvement were met. Study quality and the use of random samples were graded on a 0 (*lowest*) to 3 (*highest*) scale. Quality was determined using the following: (a) Did it use randomization of assignment? (b) did it avoid mono-method bias? (c) did it avoid mono-operation bias? (d) did it avoid selection bias? (e) did it use a specific definition of parental involvement?

We calculated inter-rater reliability by computing percentage of agreement on the definition of parental involvement, the specific components examined in each study, issues of randomization, and quality of the study. Inter-rater reliability was 100% on whether a study examined parental involvement, 93% for the specific components of parental involvement examined in a given study, and 93% for the quality of the study. For the specific components of quality, inter-rater agreement percentages were 95% for randomization, 90% for avoiding mono-method bias, 93% for avoiding mono-operation bias, 93% for avoiding selection bias, and 97% for using a specific definition of parental involvement.

Two supplementary analyses were done to include first, only those studies with quality ratings of 3 and second, only those studies with quality ratings of 2 to 3. Another supplementary analysis was also undertaken to examine only those studies that were clearly non-segregated overall, that is, nationwide data sets. This was done because it was anticipated that some of the studies might be done in highly segregated environments, which based on past research could possibly exert downward pressure on the results.

Defining of variables. For the purposes of this study, parental involvement was defined as parental participation in the educational processes and experiences of their children.

Results

Summary of the Results

Overall, the results of the meta-analysis indicated that there is a relationship between parental involvement for kindergarten through college freshmen youth as expressed in academic and behavioral outcomes combined. The results presented here used analyses based on random-error assumptions. The rationale for presenting these results rather than those using fixed-error assumptions is to utilize analyses that yielded more conservative effect sizes. As one would expect, the analyses based on fixed-error assumptions yielded somewhat larger effect sizes.

The results of this study indicate the overall parental involvement variable yielded a statistically significant outcome of .52 ($p < .01$), 95% CI [.15, .89], of a standard deviation. Table 1 lists the effects sizes of the 28 studies in descending order. All but one of the effect sizes were in the positive direction, and that one had a small effect in the negative direction. The range of the effects sizes was from 1.90 to −0.12. There were a considerable number of studies undertaken at the Grades K-5 and 6-12 levels. The studies with the smallest samples produced the most extreme effect sizes on either end, consistent with the "funnel" pattern ideal in effect sizes (Greenhouse & Iyengar, 1994).

Table 2 summarizes the studies by average year of the study, sample size, quality of study, and the quality of the definition of parental involvement. The average year of the study was 2005.3. Exactly 75% (21 of 28) of the studies took place from 2000 and afterward. The average sample size was 907.8. Among the categories listed, the largest number of studies (12) had a sample size of 1,000 or higher, although an almost equal number of studies had sample sizes of between 100 and 499 (8). The average quality of the study and the definition of parental involvement in each of the studies were each a good deal higher than the middle of the mid-point of the range of ratings allowable, 0 to 3. The mean quality of the studies was 2.07, with most (75%) of the studies being rated either 2 or 3. The mean quality of definition for parental involvement for the studies was 2.71, with most (over 90%) of the studies being rated either 3 or 2. Table 3 lists the most important correlations between key variables included in the study. In the vast majority of cases, statistically significant differences did not emerge between the variables examined: date of study, effect size, quality of study, quality of study's definition of parental involvement, and whether or not the sample was randomly selected. The effect size of the study was not related to any of the other variables examined. The quality of the study was related to the correlation with quality of study's definition of parental involvement and whether a random sample was used.

Table 1. Studies Included in the Meta-Analysis Listed by Author, Year of Study, Type of Document, Sample Size, and a Variety of Other Characteristics.

Study and year (identified by lead authors)	Sample size	Distinctions of study	Grade or age of students	Effect size without sophisticated controls	Effect size with sophisticated controls
Henry, Plunket & Sands (2011)	594	Examined high school in Los Angeles	Grade 9	1.90	—
Marrero (2009)	124	Examined Puerto Ricans	College	1.56	0.80
Unkenholz (2008)	53	Used English language arts assessment	Grades 3-5	1.08	—
St. Clair, Jackson & Zwelback (2006)	42	Examined migrant families	Grades 1, 5-6	0.90	—
Ryce (2013)	40	Looked at both academic and behavioral outcomes	Grade 1	—	0.72
Niemeyer, Wong & Westerhaust (1994)	63	Examined GPA and teacher ratings	Grades 6-12	0.69	—
Keith and Lichtman (1992)	1,714	Used National Educational Longitudinal Study	Grade 8	0.65	—
Mireles-Rios and Romo (2010)	69	Examined math and reading grades	Grades 3-6	0.58	—
Zellman and Waters (1999)	68	Assessed students at two times during their childhood	Grades 2 and 5	—	0.43
Altschuh (2011)	1,609	Used National Educational Longitudinal Study	Grades 8 and 10	0.42	0.34
Pong, Hao & Garocher (2005)	3,437	Used Adolescent Health Survey	Grades 7-12	0.38	0.25
Bermudez and Padron (1990)	162	Measured language performance	Grades 1-6	0.37	—
Busco (1991)	124	Examined literacy	Grades 1-3	0.34	—
Pearson, Muller & Trisco (2006)	1,448	Used National Longitudinal Study of Adolescent Health	Grades 7-12	—	0.33
Keith and Lichtman (1992)	1,714	Used National Educational Longitudinal Study	Grade 8	0.25	—

(continued)

Table 1. (continued)

Study and year (identified by lead authors)	Sample size	Distinctions of study	Grade or age of students	Effect size without sophisticated controls	Effect size with sophisticated controls
Kugler (2010)	184	Examined both standardized tests and GPA	Grades 6-8	—	0.23
Cardenas-Rivera (1994)	217	Examined Mexican in Texas	Grades 9-12	—	0.22
Yan & Lin (2005)	1,476	Used National Educational Longitudinal Study	Grade 12	—	0.21
LeFevre and Shaw (2012)	1,476	Used National Educational Longitudinal Study	Grades 8-12	—	0.19
Zuniga (2005)	2,653	Used National Longitudinal Study of Adolescent Health	Grades 7-12	—	0.18
Mena (2008)	137	Used non-standardized assessments	Grade 9	—	0.18
Ruiz (2009)	173	Examined grades in class	Grades 7-8	—	0.17
Huang (2011)	1,135	Used National Longitudinal Survey of Youth	Grades 9	—	0.16
Durand (2011)	2,051	Used Early Childhood Longitudinal Study	Grade K	—	0.14
Gault-Sherman (2012)	1,482	Used National Longitudinal Study of Adolescence	Grades 7-12	—	0.12
Estrada-Martinez, Caldwell, Schulz, Diez-Roux, and Pedraza (2013)	2,658	Used National Longitudinal Study of Adolescent Health	Grades 6-12	—	0.09
Chun and Dickson (2011)	478	Examined grades in math, science, and reading	Grade 7	—	0.08
Powell-Smith, Stoner, and Shinn (2000)	36	5 week program	Grade 2	−0.12	—

Note. GPA = grade point average.

Table 2. Means for Measures Assessing the Quality of Study, Whether a Random Sample Was Used, Year of Study, and Sample Size for the 28 Studies Included in the Meta-Analysis.

	M	*SD* or % distribution	Range
Year of study	2005.3	2010-2013 = 11 2000-2009 = 10 1990-1999 = 7	1990-2013
Sample size	907.8	1,000+ = 12 500-999 = 1 100-499 = 8 1-99 = 7	36-3,437
Quality of study	2.07	3 = 11 2 = 10 1 = 5 0 = 2	0-3
Quality of study's definition of parental involvement	2.71	3 = 22 2 = 4 1 = 2 0 = 0	0-3
Random sample	1.36	3 = 9 2 = 4 1 = 3 0 = 12	0-3

Effect sizes for parental involvement overall (Research Question 1). Table 4 lists the effect sizes that emerged for parental involvement as a whole, addressed under Research Question 1. The outcomes examined included both academic and behavioral ones combined. Statistically significant effect sizes emerged for parental involvement. The effect size for the overall parental involvement variable was .52 ($p < .01$), 95% CI [.15, .89], of a standard deviation, which was statistically significant at the .01 level of probability, when no sophisticated controls were used. The effect size was also statistically significant when sophisticated controls were used (.22, $p < .05$), 95% CI [.01, .43].

Effects of parental involvement by student age (Research Question 2). When parental involvement at the K-5 grade levels was examined when sophisticated controls were not used, the effect size, .50 ($p < .01$), 95% *CI* [.08, .92], was statistically significant. Nevertheless, when these controls were used, the effect size was in the expected direction (.19), but was not statistically significant (.05, p = n.s.). For parental involvement at the secondary (and college

Table 3. Correlations Between Measures Assessing the Quality of Study, Whether a Random Sample Was Used, Year of Study, and Sample Size for the 42 Studies Included in the Meta-Analysis.

	Correlation with year of the study	Correlation with effect size of the study	Correlation with quality of the study	Correlation with quality of study's definition of parental involvement	Correlation with whether a random sample was used
Year of study	—	.16	.14	.05	.16
Effect size from study	.16	—	−.09	−.02	−.07
Quality of study	.14	−.09	—	.50***	.26**
Quality of study's definition of parental involvement	.05	−.02	.50***	—	.14
Random sample	.16	−.07	.26**	.14	—

*$p < .05$. **$p < .01$. ***$p < .001$.

freshmen) school level, when sophisticated controls were not used, the effect size, .53 ($p < .01$), 95% CI [.10, .96], was statistically significant. The effect size was also statistically significant when sophisticated controls were used, (.23, $p < .05$), 95% CI [.01, .45]. When parental involvement was examined only at the secondary school level (not including college freshmen), the effect size, .48 ($p < .05$), 95% CI [.06, .90], was statistically significant. When sophisticated controls were used, the results were also statistically significant (.23, $p < .05$), 95% CI [.01, .45].

Parental involvement programs (Research Question 3). When the relationship between parental involvement programs for Latinos and academic achievement was examined, the effect size, (.37) was in the expected direction, but did not yield statistically significant results (.05, p = n.s.). There were no such studies that utilized sophisticated controls.

Supplementary analyses on research question #1. An additional analysis was also undertaken to examine only those studies that were clearly non-segregated overall, that is, nationwide data sets (see Table 3). This was done because it was anticipated that some of the studies might be done in highly segregated environments, which based on past research could possibly exert downward pressure on the results. The effect size for the overall parental involvement variable was .42 ($p < .05$), 95% CI [.06, .78], of a standard deviation, which

Table 4. Effect Sizes for Parent Involvement With 95% Confidence Intervals in Parentheses.

Type of parent involvement and specific outcomes	Effect size without sophisticated controls	Effect size with sophisticated controls	Overall effect size
General parental involvement			
Overall	.52** [.15, .89]	.22* [.01, .43]	.45[a]
K-5 grade levels	.50* [.08, .92]	.19	.30[a]
6-12 grade levels	.48* [.06, .90]	23* [.01, .45]	.29[a]
6-12 grade levels and college	.53* [.10, .96]	23* [.01, .45]	.30[a]
Parental involvement programs	.37	NA	.37
Clearly non-segregated environments	42* [.06, .78]	.20* [.02, .38]	.24[a]
Specific outcomes			
Academic achievement	.52** [.15, .89]	.24* [.03, .45]	.35[a]
Standardized tests	.31* [.05, .57]	.21* [.02, .40]	.24[a]
Non-standardized assessments	1.28*** [.40, 2.16]	.33* [.04, .62]	.64[a]
School behavior	NA	.16	.16

Note. NA = not available.

[a]Confidence intervals tabulation not undertaken for combined effect size because of difference in sample distributions for the two sets of studies

*$p < .05$. **$p < .01$. ***$p < .001$.

was statistically significant at the .01 level of probability, when no sophisticated controls were used. The effect size was also statistically significant when sophisticated controls were used, (.20, $p < .05$), 95% CI [.02, .38].

Table 4 also lists the effect sizes that emerged for parental involvement's relationship with academic achievement. Statistically significant effect sizes emerged for parental involvement. The effect size for the overall parental involvement variable was .52 ($p < .01$), 95% CI [.15, .89], of a standard deviation, which was statistically significant at the .01 level of probability, when no sophisticated controls were used. The effect size was also statistically significant when sophisticated controls were used (.24, $p < .01$), 95% CI [.03, .45]. The different types of academic outcomes showed somewhat different patterns in effect sizes. The result for non-standardized results, such as GPA and teacher ratings, was (1.28, $p < .001$), 95% CI [.40, 2.16], when no

Table 5. Effect Sizes for Parent Involvement With 95% Confidence Intervals in Parentheses.

Type of parent involvement and specific outcomes	Effect size without sophisticated controls	Effect size with sophisticated controls	Overall effect size
General parental involvement			
Specifically identified as Mexican American	.42* [.04, .80]	.31	.38[a]
Overall from highest quality studies (3)	.42** [.12, .72]	.19	.26[a]
Overall from highest quality studies (2-3)	.42** [.12, .72]	.20* [.01, .39]	.27[a]
Specific outcomes			
Reading outcomes	.47* [.08 .86]	.40* [.06 .74]	.45[a]
Math outcomes	.47* [.08 .86]	.37* [.05 .59]	.43[a]
Science outcomes	.47* [.05, .89]	.26	.38[a]
Social studies outcomes	.47* [.05, .89]	.26	.38[a]

Note. NA = not available.

[a]Confidence intervals tabulation not undertaken for combined effect size because of difference in sample distributions for the two sets of studies.

*$p < .05$. **$p < .01$.

sophisticated controls were used. The effect size for non-standardized outcomes was also statistically significant when sophisticated controls were used (.33, $p < .05$), 95% CI [.04, .62]. The effect size for the overall parental involvement variable for standardized tests was .31 ($p < .01$), 95% CI [.05, .57], of a standard deviation, when no sophisticated controls were used. The effect size for standardized tests was also statistically significant when sophisticated controls were used, (.21, $p < .01$), 95% CI [.02, .40].

The effects for parental involvement with respect to school behavior showed somewhat of a different pattern in that the effect size when sophisticated controls were utilized was in the expected direction (.16), but did not yield statistically significant results. There were no studies that qualified for this meta-analyses that sought to examine the relationship between parental involvement and student behavior that did not use sophisticated controls.

Another set of analyses focused on (a) those analyses that specifically identified certain subjects as Mexican American and (b) studies rated high in quality (see Table 5). Regarding the first point, it is important to acknowledge that Latinos are not a monolithic group. It is also true that Mexican Americans are the largest population of people among Latinos in the United States.

Therefore, it is wise to see if the results of Mexican Americans are similar to the general Latino population. The effect sizes were similar to those found for the Latinos generally. The results were a little bit smaller than for Latinos when sophisticated controls were not in place, .42 ($p < .05$), 95% CI [.04, .80], and they were larger when these controls were in place, .31. However, the latter number was not statistically significant.

The effect sizes for the high-quality studies were nearly the same as when no quality adjustments were made. When only those studies rated 3 (on a 0-3 scale) were included, the effect size was .42 ($p < .01$), 95% CI [.12, .72], for those studies that did not use sophisticated controls. When sophisticated controls were used, the results fell just short of statistical significance at .19. When those studies rated 2 to 3 (on a 0-3 scale) were included, the effect size was .42 ($p < .01$), 95% CI [.12, .72], for those studies that did not use sophisticated controls and .20 ($p < .05$), 95% CI [.01, .39], when they did use sophisticated controls.

For the analyses that focused on particular subjects, the effect size for reading was .47 ($p < .05$), 95% CI [.08, .86], for those studies that did not use sophisticated controls and .40 ($p < .05$), 95% CI [.06, .74], when they used the sophisticated control model. Similarly, the effect size for math was .47 ($p < .05$), 95% CI [.08, .86], for those studies that did not use sophisticated controls and .32 ($p < .05$), 95% CI [.05, .59], when they used the sophisticated control model. For science, the effect size was .47 ($p < .05$), 95% CI [.05, .89], for those studies that did not utilize sophisticated controls. The results in were in the expected direction (.27) when sophisticated controls were used, but these findings did not reach the level of statistical significance. For social studies, the result in standard deviation units was .47 ($p < .05$), 95% CI [.05, .89], for those studies that did not utilize sophisticated controls. The effects were in the expected direction (.27) when sophisticated controls were used, but were not statistically significant.

Specific aspects of parental involvement (Research Question 4). Table 6 addresses Research Question 4 and lists the effect sizes for studies that examined the various components of parental involvement.

Two of the components of parental involvement yielded statistically significant results when sophisticated controls were not used. They included effect sizes for parental style, .31 ($p < .05$), 95% CI [.03, .59], and communication, .34 ($p < .05$), 95% CI [.03, .65]. When sophisticated controls were not utilized, three other components of parental involvement yielded effect sizes that were in the expected direction, but because of the small number of studies included, a meta-analysis for each of these specific components was not undertaken. These aspects of parental involvement included parental

Table 6. Effect Sizes for Parent Involvement With 95% Confidence Intervals in Parentheses.

Type of parent involvement and specific outcomes	Effect size without sophisticated controls	Effect size with sophisticated controls	Overall effect size
Specific types of parental involvement			
Parental expectations	.36[a] (1 study only)	.15[a] (1 study only)	.21[b]
Parental style	.31* [.03, .59]	.27[a] (2 studies only)	.30[b]
Communication	.34* [.03, .65]	.17	.23[b]
Participation	.56[a] (1 study only)	.05[a] (1 study only)	.18[b]
Homework/ monitoring	.62[a] (2 studies only)	NA	.62[a]

Note. NA = not available.
[a]Tabulation for statistical significance not undertaken due to small number of studies.
[b]Confidence intervals tabulation not undertaken for combined effect size because of difference in sample distributions for the two sets of studies
*$p < .05$. **$p < .01$. ***$p < .001$. ****$p < .0001$.

expectations (.36), participation (.56), and checking homework/monitoring (.62). For studies that utilized sophisticated controls for these measures, with the exception of the communication variable, which yielded a statistically insignificant effect size of .17, there were not enough studies that examined the other components of parental involvement to conduct a meta-analysis in these cases.

Tests of homogeneity for parental involvement indicated that the measures were relatively homogeneous when sophisticated controls were used ($\chi^2 = 3.15$, p = n.s.) and when sophisticated controls were not included ($\chi^2 = 3.62$, p = n.s.).

Discussion

Limitations of Study

The primary limitation of this meta-analysis, or any meta-analysis, is that it is restricted to analyzing the existing body of literature. Therefore, even if the researcher conducting the quantitative integrations sees ways the studies included could have been improved, there is no way to implement those changes. A second limitation of a meta-analysis is that the social scientist is limited to addressing the same research questions addressed in the aggregated studies. For example, it would be advisable to have parental

expectations measures from all the studies included, but one can only aggregate the existing results.

Effect sizes for parental involvement overall and by age groups (Research Questions 1 and 2). The results of meta-analysis suggest that parental involvement is related to positive outcomes among Latino youth. This is true generally and although analyses limiting the studies to high-quality ones yielded somewhat lower effect sizes, the results very similar. Those analyses that used sophisticated controls usually produced statistically significant results. The general results for Latino youth also held when studies that specifically identified Mexican American youth were analyzed separately.

It should be noted that the association between parental involvement and the outcomes under study were greater for academic outcomes than they were for behavioral outcomes. Moreover, the effects were greater for academic outcome measures that were non-standardized than those that were standardized. The effects for non-standardized tests, without the use of sophisticated controls, were especially high at slightly more than 1¼ standard deviation units.

The result that emerged for behavioral outcomes was .16 when sophisticated controls were used, which was not statistically significant. Therefore, the results suggest that parental involvement appears related to academic measures than they are behavioral ones. There is no question that when most social scientists examine the effects of parental involvement, they tend to focus most on its relationship with academic outcomes much more so than behavioral measures (Epstein, 2001; Henderson & Mapp, 2002; Jeynes, 2002, 2006). It is quite possible that this emphasis may also be one of the reasons why parental engagement is more strongly related to school achievement than it is to student behavior. The fact that this meta-analysis is concerned with academic outcomes, especially, reflects this emphasis in the body of literature.

One of the most interesting findings in this meta-analysis is that the effects for parental involvement at the elementary and secondary school level are almost identical. This result contrasts with previous meta-analyses covering a broad cross section of students that indicates that parental involvement had a greater impact at the elementary school level rather than the secondary school level. There are several possibilities why this may be the case and they are worthy of further investigation in future research. First, it may be that Latino parents, on average, are more persistent than others in their involvement through the life span of a child from youth until adulthood. A number of family scientists and educational researchers have hypothesized that parental engagement becomes more difficult as children age (Day & Padilla-Walker, 2009; Lee & Bowen, 2006; Palmer, 2004). A great deal of this phenomenon,

they argue, is due to increased resistance to parents that emerges during a youth's adolescent years (Day & Padilla-Walker, 2009; Dumka, Gonzales, Bonds, & Millsap, 2009; Wallerstein & Lewis, 1998). It may be that involved Latino parents are more determined to be engaged than those of other backgrounds, even as the child gets older.

Second, it could also be that Latino parents are less likely than other groups to be involved in a child's schooling when their offspring are young. When compared with other meta-analyses, the effects of parental involvement at the elementary school level are a bit lower than those that emerged in the broader population. It is conceivable that the strain to make ends meet, family dissolution, and time constraints may make it more difficult for Latino parents to be as involved as they would ideally like. Third, some research suggests that a lot of the parental involvement by Latino parents and others of color may be subtler than one typically finds in White and Asian American families (Jeynes, 2010, 2015b). Quantitative research indicates that this more subtle involvement is more effective as children become older (Jeynes, 2007b). To the extent that this is true, the fact that there is no real decline in the effectiveness of parental involvement among Latinos over the length of the child's upbringing could reflect the fact that real tangible benefits are emerging from this more subtle approach during a student's secondary school years.

Effect sizes for parental involvement programs (Research Question 3). The relationship between parental involvement programs and academic and behavioral outcome was less certain. Although the effect size was .37, the result fell slightly short of statistical significance. Although the effect size was a pretty good size, one cannot draw any real conclusions because the result was not statistically significant. This result, as one would expect based on previous studies, was not as large as those one typically finds in other studies that examine voluntary parental involvement (Jeynes, 2003, 2005b, 2012). This is because parents already enthusiastic about supporting the educational progress of their children will, on average, tend to help their children more than parents whose participation is fostered by the presence of a particular program.

It is very interesting to note that the effects of parental involvement programs for Latino students found in this study (.37) are similar to the effect size that emerged for a meta-analysis done on a broad cross section of students (.30) (Jeynes, 2012).

Effect sizes for specific components of parental involvement (research questions 4). The results of the study indicate that parental style and strong parental–child communication were associated with higher levels of

academic achievement. These two types of parental involvement are what are typically called subtle aspects of involvement. Research suggests that these components of engagement are generally some of the most prominent. Moreover, these results are consistent with the burgeoning view of many that Latino parents are strongest in the subtle aspects of parental involvement (Drummond & Stipek, 2004; Jeynes, 2010, 2015a). Further research is needed to confirm the notion that Latino parents may be especially adept at the more subtle aspects of parental engagement.

Recommendations for further research. Parental involvement among any specific population, including Latinos, is naturally going to be a less developed area of research than one finds for parental engagement generally. Therefore, the need for further research in this discipline is at least as great as for parental involvement as a whole. Three lines of Latino parental involvement research are particularly important. First, the vast majority of research that has been done on parental participation has focused on the influence of parental participation in its more easily measured forms. It is only in the last few years that social scientists have begun to embrace the possibility that the subtle aspects of parental involvement may be more puissant than the more tangible components. Given that various researchers believe that Latinos are especially strong in their practice of the subtle aspects of parental engagement, understanding the place of the subtle aspects of involvement appears especially important.

Second, additional longitudinal studies on Latino parental involvement are also necessary. Although some researchers have undertaken a longitudinal approach, American society would benefit by knowing more about what specific benefits of parenting accrue at specific points in children's lives. Third, as more studies on parental involvement become available over the years, it will be helpful for additional meta-analyses on parental involvement to be done that focus on other minority groups, especially African Americans.

Conclusion

The association between parental involvement and the academic achievement of Latinos is quite consistent and reasonably strong. These findings may provide both some guidance and hope for those desiring to see school outcomes improve for all American children. It is possible, therefore, that parental involvement could potentially play a role in reducing the achievement gap.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

References marked with an asterisk indicate studies included in the meta-analysis.

*Altschuh, I. (2011). Parental involvement and the academic achievement of Mexican American youths, What kinds of involvement in youth's education matter most? *Social Work Research*, *35*, 159-170.

*Bermudez, A. B., & Padron, Y. N. (1990). Teachers' perceptions of errors in second language learning and acquisition. *Journal of Education Issues of Language Minority Students*, *6*, 33-43.

Borruel, T. W. (2002). The ten p's of parent communication. A strategy for staff development. *Child Care Information Exchange*, *143*, 54-57.

*Busco, R. A. (1991). The impact of a Hispanic parental involvement literacy program on limited-English-proficient students in grades, 1, 2, and 3. *Dissertation Abstracts International*, *53*(11-A), 3743.

*Cardenas-Rivera, N. G. (1994). A study of acculturation, parenting style, and adolescents'' academic achievement in a group of low socioeconomic status Mexican American families. *Dissertation Abstracts International*, *56*(2-A), 0491.

*Chun, H., & Dickson, G. (2011). A psychoecological model of academic performance among Hispanic students. *Journal of Youth and Adolescence*, *40*, 581-594.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Cowan, P. A., Cowan, C. P., Pruett, M. K., Pruett, K., & Wong, J. J. (2009). Promoting fathers' engagement with children: Preventive interventions for low-income families. *Journal of Marriage and Family*, *71*, 663-679.

Davalos, D. B., Chavez, E. L., & Guardiola, R. J. (2005). Effects of perceived parental school support and family communication on delinquent behaviors in Latinos and white non-Latinos. *Cultural Diversity & Ethnic Minority Psychology*, *11*, 57-68.

Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parent expectations and the home environment. *Journal of Family Psychology*, *19*, 294-304.

Day, R. D., & Padilla-Walker, L. M. (2009). Mother and father connectedness and involvement during early adolescence. *Journal of Family Psychology*, *23*, 900-904.

Drummond, K. V., & Stipek, D. (2004). Low income parents' beliefs about their role In children's academic learning. *Elementary School Journal*, *104*, 197-213.

Dumka, L. E., Gonzales, N. A., Bonds, D. D., & Millsap, R. E. (2009). Academic success of Mexican origin adolescent boys and girls: The role of mothers' and fathers' parenting and cultural orientation. *Sex Roles*, *60*, 588-599.

*Durand, T. M. (2011). Latino parental involvement in kindergarten: Findings from the Early Childhood Longitudinal Study. *Hispanic Journal of Behavioral Sciences*, *33*, 469-489.

Epstein, J. (2001). *School, family, and community partnerships*. Boulder, CO: Westview Press.

*Estrada-Martinez, L. M., Caldwell, C. H., Schulz, A. J., Diez-Roux, A. V., & Pedraza, S. (2013). Families, neighborhood socio-demographic factors, and violent behaviors among Latino, white, and black adolescents. *Youth & Society*, *45*, 221-247.

Ferrara, M. M. (2009). Broadening the myopic vision of parental involvement. *School Community Journal*, *19*, 123-142.

*Gault-Sherman, M. (2012). It's a two-way street: The bidirectional relationship between parenting and delinquency. *Journal of Youth and Adolescence*, *41*, 121-145.

Gibson, D. M., & Jefferson, R. N. (2006). The effect of perceived parental involvement and the use of growth-fostering relationships on self-concept in adolescents participating in gear up. *Adolescence*, *41*, 111-125.

Glass, G. V., McGaw, B., & Smith, M. L. (1981). *Meta-analysis in social research*. Beverly Hills, CA: Sage.

Gniewosz, B., & Noack, P. (2012). What you see is what you get: The role of the early adolescent's perceptions in the intergenerational transmission of academic values. *Contemporary Educational Psychology*, *37*, 70-79.

Green, C. L., Walker, M. T., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology*, *99*, 532-544.

Greenhouse, J. B., & Iyengar, S. (1994). Sensitivity analysis and diagnosis. In H. Cooper & S. Iyengar (Eds.), *Handbook of research synthesis* (pp. 383-398). New York, NY: Russell Sage.

Hedges, L. V. (1981). Distribution theory for Glass's estimator of effect size and related estimators. *Journal of Educational Statistics*, *6*, 107-128.

Hedges, L. V., & Vevea, J. L. (1998). Fixed and random effects models in meta-analysis. *Psychological Methods*, *3*, 486-504.

Henderson, A. T., & Mapp, K. L. (2002). *A new wave of evidence: The impact of school, family and community connections on student achievement*. Austin, TX: Southwest Educational Development Laboratory.

*Henry, C. S., Plunkett, S. W., & Sands, T. (2011). Family structure, parental involvement, and academic motivation in Latino adolescents. *Journal of Divorce & Remarriage*, *52*, 370-390.

Hoover-Dempsey, K. V., Walker, J. M., & Jones, K. P. (2002). Teachers involving parents (TIP): Results from an in-service teacher education program for enhancing parental involvement. *Teacher and Teacher Education*, *18*, 843-867.

*Huang, D. Y. C. (2011). Parental monitoring during early adolescence deters adolescent sexual initiation: Discrete-time survival mixture analysis. *Journal of Child and Family Studies*, *20*, 511-520.

Jasis, P. M., & Ordonez-Jasis, R. (2012). Latino parental involvement: Examining commitment and empowerment in the schools. *Urban Education*, *47*, 65-89.

Jeynes, W. (2002). *Divorce, family structure, and the academic success of children*. Binghamton, NY: Haworth Press.

Jeynes, W. (2003). A meta-analysis: The effects of parental involvement on minority children's academic achievement. *Education & Urban Society, 35*, 202-218.

Jeynes, W. (2005a). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education, 40*, 237-269.

Jeynes, W. (2005b). Effects of parental involvement and family structure on the academic achievement of adolescents. *Marriage and Family Review, 37*, 99-117.

Jeynes, W. (2005c). The effects of parental involvement on the academic achievement of African American youth. *Journal of Negro Education, 74*, 260-274.

Jeynes, W. (2006). Standardized tests and Froebel's original kindergarten model. *Teachers College Record, 108*, 1937-1959.

Jeynes, W. (2007a). *American educational history: School, society & the common good*. Thousand Oaks, CA: Sage.

Jeynes, W. (2007b). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban Education, 42*, 82-110.

Jeynes, W. (2010). The salience of the subtle aspects of parental involvement and encouraging that involvement: Implications for school-based programs. *Teachers College Record, 112*, 747-774.

Jeynes, W. (2011a). Help families by fostering parental involvement. *Phi Delta Kappan, 93*, 38-39.

Jeynes, W. (2011b). *Parental involvement & academic success*. New York, NY: Taylor & Francis/Routledge.

Jeynes, W. (2012). A meta-analysis of the efficacy of different types of parental involvement programs for urban students. *Urban Education, 47*, 706-742.

Jeynes, W. (2015a). A meta-analysis on the factors that best reduce the achievement gap. *Education & Urban Society, 47*, 523-554.

Jeynes, W. (2015b). A meta-Analysis: The relationship between father involvement and student academic achievement. *Urban Education, 50*, 387-423.

Kaplan-Toren, N. (2013). Multiple dimensions of parental involvement and its links to young adolescent self-evaluation and academic achievement. *Psychology in the Schools*, *50*, 634-649.

*Keith, P. B., & Lichtman, M. (1992, April). *Testing the influences of parental involvement on Mexican-American eighth grade students' achievement: A structural equations analysis*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

*Keith, P. B., & Lichtman, M. (1994). Does parental involvement influence the academic achievement of Mexican American eighth graders? Results from the National Education Longitudinal Study. *School Psychology Quarterly*, *9*, 256-272.

*Kugler, T. (2010). The relationship of parental involvement in student academic achievement in Latino middle school students. *Dissertation Abstracts International*, *70*(70-A), 2305.

Lee, J., & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal*, *43*, 193-218.

*LeFevre, A. L., & Shaw, T. V. (2012). Latino parental involvement and school success: Longitudinal effects of formal and informal support. *Education and Urban Society*, *44*, 707-723.

Mapp, K. L., Johnson, V. R., Strickland, C. S., & Meza, C. (2008). High school family centers: Transformative spaces linking schools and families in support of student learning. *Marriage & Family Review*, *43*, 338-368.

*Marrero, C. (2009). Immigration status, parental involvement, and educational achievement among Puerto Ricans. *Dissertation Abstracts International*, *69*(12-A), 4631.

McDonald, L. G., & Robinson, P. (2009). *A colossal failure of common sense*. New York, NY: Crown.

McKenzie, B. (2008). Reconsidering the effects of bonding social capital: A closer look at black civil society institutions in America. *Political Behavior*, *30*, 25-45.

*Mena, J. A. (2008). Parental involvement as predictor of 9th grade Latino students' intention to complete high school mediated by student school beliefs after a one year follow-up. *Dissertation Abstracts International*, *69*(1-B), 660.

*Mireles-Rios, R., & Romo, L. F. (2010). Maternal and teacher interaction and student engagement in math and reading among Mexican American girls from a rural community. *Hispanic Journal of Behavioral Sciences*, *32*, 456-469.

*Niemeyer, A. E., Wong, M. M., & Westerhaust, J. (2009). Parental involvement, familismo, and academic performance in Hispanic and Caucasian students. *North American Journal of Psychology*, *11*, 613-632.

Palmer, D. L. (2004). The structural of maternal and paternal involvement and adolescent well-being. *Journal of Family Issues*, *17*, 614-620.

*Pearson, J., Muller, C., & Trisco, M. L. (2006). Parental involvement, family structure, and adolescent sexual decision making. *Sociological Perspectives*, *49*, 67-90.

*Pong, S., Hao, L., & Garocher, E. (2005). The roles of parenting styles and social capital in the school performance of immigrant Asian and Hispanic students. *Social Science Quarterly*, *86*, 928-950.

*Powell-Smith, K. A., Stoner, G., & Shinn, M. R. (2000). Parent tutoring in reading using curriculum and reading materials: Impact on student reading achievement. *School Psychology Review*, *29*, 5-27.

Rapp, N., & Duncan, H. (2012). Multi-dimensional parental involvement in schools: A principal's guide. *International Journal of Education Leadership Preparation*, *7*, 1-14.

Root, A. K., & Rubin, K. H. (2010). Gender and parents' reaction to children's reaction to children's emotion during the preschool years. In A. K. Root & S. A. Denham (Eds.), *Focus on gender: Parent and child contributions to the socialization of emotional competence* (pp. 51-64). San Francisco, CA: Jossey-Bass.

*Ruiz, Y. (2009). Predictors of academic achievement for Latino middle schoolers. *Journal of Human Behavior in the Social Environment*, *19*, 419-433.

*Ryce, P. (2013). The role of family involvement in predicting student-teacher relationships and academic and behavioral outcomes for children of immigrants. *Dissertation Abstracts International*, *74*(3-A)(E).

Skalotis, E. (2010). Changes in parental involvement in secondary education: An exploration study using the longitudinal study of young people in England. *British Educational Research Journal*, *36*, 975-994.

*St. Clair, L., Jackson, B., & Zwelback, R. (2012). Six years later: Effect of family involvement training on the language Skills of children from migrant families. *School Community Journal*, *22*, 9-20.

Stacer, M., & Perrucci, R. (2013). Parental involvement with children at school, home, and Community. *Journal of Family and Economic Issues*, *34*, 340-354.

United Code of Law (USCS 7801(32)).

*Unkenholz, C. L. (2008). Parent perceptions of parental involvement and its relationship to student achievement in minority and non-minority families living and not living in poverty. *Dissertation Abstracts International*, *68*(7/8), 2821.

Wallerstein, J. S., & Lewis, J. (1998). The long-term impact of divorce on children: A first report from a 25-year study. *Family Court Review*, *36*, 368-383.

*Yan, W., & Lin, Q. (2005). Parent involvement and mathematics achievement: Contrast across racial and ethnic groups. *Journal of Educational Research*, *99*, 116-127.

*Zellman, G. L., & Waters, J. M. (1998). Understanding the impact of parent school involvement on educational outcomes. *Journal of Educational Research*, *91*, 360-370.

*Zuniga, K. M. (2005). The influence of individual of individual characteristics and parenting behaviors on adolescent academic performance. *Dissertation Abstracts International*, *65*(9-A). 3591.

Author Biography

William H. Jeynes is a Senior Fellow at Princeton's Witherspoon Institute and a Professor of Education at California State University, Long Beach. He specializes in conducting meta-analyses on parental involvement. He has given speeches for the White House and several U.S. Government departments. He graduated first in his class from Harvard University and has advised a number of U.S. and foreign leaders.

J Child Fam Stud (2015) 24:2060–2069
DOI 10.1007/s10826-014-0007-4

ORIGINAL PAPER

Parent–Child Automaticity: Links to Child Coping and Behavior and Engagement in Parent Training

Lisa Jobe-Shields · Angela D. Moreland · Rochelle F. Hanson · Jean Dumas

Published online: 14 July 2014
© Springer Science+Business Media New York 2014

Abstract This research investigated parent–child automaticity (i.e., automatic ways of thinking, feeling, and interacting) as it relates to child coping and behavior and caregiver engagement in a preventive parenting program, as well as program-related changes in automaticity. 610 caregivers (93 % mothers) of children ages 3–6 years (52 % boys; 49 % African American) enrolled in the Parenting our Children to Excellence (PACE) program, and completed pre- and post-intervention assessments ($N = 544$ at post-intervention). Daycare providers also provided reports of school coping and behavior. Parent–child automaticity predicted parent and teacher-reported child social coping and aggressive behavior. Contrary to hypotheses, parents reporting elevated parent–child automaticity attended significantly more PACE sessions. A significant time × attendance interaction indicated decreased automaticity following the PACE program. Parent–child automaticity during the preschool years is an important correlate of child behavior and coping, and may be a motivating factor for parents to attend parent training programs.

Keywords Automaticity · Parent training · Child coping · Aggressive behavior

L. Jobe-Shields (✉) · A. D. Moreland · R. F. Hanson
National Crime Victims Research and Treatment Center, Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC 29425, USA
e-mail: lisajobeshields@gmail.com

J. Dumas
University of Geneva, Geneva, Switzerland

Introduction

It is widely accepted that a large amount of higher order social-cognitive processes unfold automatically, efficiently, and without the mindful awareness of the individual; a construct referred to as *automaticity* (Bargh and Ferguson 2000; Bargh et al. 2012). There is specific evidence for the presence of automaticity within families and interpersonal dyads, such that individuals in relationships acquire automatic and efficient ways of interacting with one another over time (Milner 1993; Patterson et al. 1992). At the interpersonal level, automaticity has been characterized as the interrelated ways of thinking, feeling, and interacting that are relationship-specific and reflect the history of the relationship (Dumas 2005). When harmony in dyadic interactions is achieved, family relationships benefit from the entrenchment of such patterns, and pleasant and mutually-beneficial interactions become more stable and effortless over time (Lunkenheimer et al. 2011). Yet, when a dyad repetitively engages in disharmonious or conflictual interactions, these automatic patterns similarly become entrenched, effortless, and resistant to change. These processes are perhaps best understood in the context of coercion theory applied to adolescent-parent conflict in the development of adolescent antisocial behavior (Patterson et al. 1992).

At early developmental stages, microsocial processes and transactions between caregivers and children have important implications for the development of self-regulatory capacities within the child (i.e., co-regulation of emotions; Olson and Lunkenheimer 2009). To navigate and cope with developmental challenges, children must acquire a broad range of skills to regulate behavior and emotion during infancy and early childhood, and these self-regulation skills have long-term implications for psychological

and interpersonal functioning (Calkins and Hill 2007; Spinrad et al. 2007). For toddlers and young children, cognitive/language development, independent mobility, and a developing identity separate from caregivers necessitate increasingly independent use of self-regulation skills in a range of contexts (e.g., at home, with peers). Caregiver awareness, responsiveness and modeling continue as primary influences on development of self-regulation. Yet, at the same time, as relationship histories strengthen, interaction patterns between caregivers and young children become more internalized and automatic for both the caregiver and the child.

Behaviorally-oriented parent training programs have been shown to be effective in improving child behavior and coping, improving parenting skills, and decreasing parenting stress, in general community samples, high-risk community samples, and clinical samples (e.g., Barkley 1997; Webster-Stratton 1998; Kaminski et al. 2008). Meta-analytic investigations have substantiated these results and indicated that group-format behavioral parent training programs are also cost-effective in the treatment and prevention of behavior problems in children (Furlong et al. 2012; Kaminski et al. 2008). Further, there is evidence that such programming can have a long-term, sustained impact on parenting (e.g., 4 years later; Heinrichs et al. 2014). The Parenting our Children to Excellence (PACE) program is one such program with a focus on prevention of childhood behavior problems in at-risk families (Dumas et al. 1999). Although a full randomized controlled trial has not been conducted to date, there is evidence that participation in the PACE program is associated with pre- to post-intervention improvements in child coping and behavior, as reported by parents and teachers, as well as decreases in parenting stress and child abuse potential for participating caregivers (Begle and Dumas 2011; Begle et al. 2012; Dumas et al. 2010). These positive benefits are well known correlates of harmonious parent–child interactions (Eisenberg et al. 2006; Moreland and Dumas 2007), yet, less is known specifically about the role of negative automatic transaction patterns in behavioral parent training, or the malleability of such patterns in response to parent-only interventions. Further, in spite of the demonstrated efficacy of these interventions, research indicates that drop-out rates vary widely across studies (e.g., up to 50 %; Prinz and Miller 1994), and these programs may not reach the most at-risk parents. Specifically, meta-analytic findings suggest that drop-out is affected by factors such as family income, single parent status, racial minority status, and young parental age (Reyno and McGrath 2006).

Automaticity was originally hypothesized as a barrier to engagement and effectiveness of such interventions (Dumas 2003), as processes outside of conscious awareness may not be well-targeted by education-based behavioral parent training. Also, there is evidence that parental attributions of child behavior problems play a role in engagement in parenting programs—when parents conceptualize child behavior problems as unrelated to parenting practices, they are less likely to attend and engage in parent training programs (Hoza et al. 2000). It remains unclear whether parents perceive automatic, negative, escalating interactions with their toddlers as child-centered, parent-centered, or relationship-centered, which likely has implications for the engagement of parents reporting high automaticity in behavioral parenting programs. The purpose of the present research was to investigate: (1) the relation between parent–child automaticity and child coping and behavior across home and school contexts, (2) automaticity in relation to attendance and participation in a preventive parenting program, (3) the malleability of automaticity in response to such programming, and (4) the relation between change in automaticity and child functioning.

Method

Participants

Participants were caregivers enrolled in the Parenting our Children to Excellence (PACE) preventive parenting program. Six hundred and ten caregivers enrolled in the program originally and completed pre-intervention measures, and 483 attended at least one session. Caregivers were primarily mothers (93 %); 49 % self-identified their ethnicity as African American, 46 % as European American, and 5 % as other (including Asian, Hispanic, Biracial, and Native American). Each parent represented a distinct family (i.e., no sibling data included) and reported on one target child between the ages of 3 and 6 at the time of recruitment (52 % boys, mean age 4.44 for boys and 4.35 for girls). Caregivers ranged in age from 17 to 62, with a mean age of 31.0 years ($SD = 7.1$). Fifty-three percent were single parents, and 47 % were married or lived with an adult partner. Mean yearly household income was $26,572, which was well below the median household income in Indianapolis ($40,421) at the time of study. Statistics provided by daycare center directors indicated that approximately 1 in 2 families qualified for subsidized childcare ($M = .51$, $SD = .35$).

Procedure

All procedures were approved by and carried out in accordance with the Institutional Review Boards of Purdue University and the Centers for Disease Control and Prevention. Fifty daycare centers were recruited through Child Care Answers, a childcare provider training and licensing

agency. To receive the PACE program, centers had to serve an ethnically diverse population and a minimum of 35 families with children between the ages of 3 and 6 at the time of recruitment. Recruitment strategies included posting advertisements in multiple locations throughout each center, sending registration forms to all eligible parents, and staffing a registration table at the daycare center twice a week for 4 weeks. Advertisements included overview of topics covered in the PACE program, as well as information about the program logistics (free of cost, free meal and childcare provided each session, and $3 cash to cover transportation costs each session). Parents were given opportunities to ask questions prior to deciding to participate and completing informed consent. Parents enrolled by completing an enrollment form or attending the first session.

Parents completed a Parent Survey at baseline (prior to first session), post (following eighth session), and 1 year follow-up. The Parent Survey is a structured interview that was individually administered by trained staff at the parent's home or at the daycare center, based on parental preference. The Parent Survey included measures in the present study (see below), as well as other assessments of parenting behaviors, parent characteristics, and child behavior. Parents provided informed consent before each interview and received $35 in cash at completion of pre and post surveys and $50 at completion of 1 year follow-up. Teacher Surveys were administered to teachers at the daycare center by trained staff. Steps were taken to track data collection for all parents who enrolled in the program, whether they attended any session or not. This included (in this order): up to five attempts at phone contact with a scripted message, phone call to alternate contact persons (if provided at baseline), letter mailed to most recent address on file, letter delivered to daycare center addressed to the family, and an in-person visit to last known address to attempt to schedule assessment session. Primary analyses of the PACE data indicated no significant differences between daycare sites on study outcomes, and for that reason, data were compiled across the recruitment sites (Begle and Dumas 2011).

PACE Program Fidelity

Each PACE parenting group was conducted by a trained leader and assistant. Sessions covered eight topics: (1) bringing out the best in our children, (2) setting clear limits for our children, (3) helping our children behave well at home and beyond, (4) making sure our children get enough sleep, (5) encouraging our children's early thinking skills, (6) developing our children's self-esteem, (7) helping our children do well at school, and (8) anticipating challenges and seeking support. Training, supervision, and fidelity assessments focused on program content and process (for detailed description, see Dumas et al. 2001). In the course of training, group leader and assistant competence were evaluated using formal quizzes and live observations. In addition, throughout the study, group leaders received weekly supervision that included feedback from weekly fidelity assessments. Group leader fidelity was assessed with procedures described in Dumas et al. (2001). Leaders wore a lapel microphone attached to a portable recorder to audiotape all sessions. Trained coders assessed fidelity to program content and process; results from these assessments were sent to group leaders' supervisors on a weekly basis for ongoing feedback and estimates of adherence. Following any week of diminished fidelity (content or process), group leaders were provided additional support and monitoring. On average, group leaders covered 79 % of all content items (range 20–100 %; inter-rater agreement, *kappa* = .79) and attained an average process score of 91 % (range 63–100 %; inter-rater agreement, *kappa* = .88).

Measures

Sociodemographic Characteristics

Sociodemographic information was assessed at pre-intervention and included parent gender, age, ethnicity, marital status, education, family income, and child gender and age.

Attendance and Participation

Attendance was assessed as (0) did not attend or (1) did attend at each session. Overall attendance scores therefore ranged from 0 to 8. Program completion was considered attendance at five or more sessions, based upon a median split in previous studies examining PACE outcomes (Begle and Dumas 2011; Dumas et al. 2007). Quality of participation was assessed via independent ratings by the group leader and assistant leader following each session. Group leader and assistant leader rated each parent by answering the question, "Overall, how well did the parent participate during the session?" Ratings ranged from "(1) Did not participate or obstructed group functioning and activities," to "(5) Participated enthusiastically; was obviously interested and attentive to other group participants." Each anchor point had specific definitions. Leaders and assistants were trained to use the measure through examples and observations of PACE sessions. As their answers were internally consistent (Cronbach's $\alpha = .92$ for leaders and .94 for assistants) and highly correlated ($r = .71$, $p < .001$), they were aggregated and averaged over all attended sessions to yield a single quality of participation score per parent.

Parent–Child Automaticity

Automaticity was assessed using the Automaticity Scale (developed for Begle and Dumas 2011). This scale was first used in the original PACE study to assess automatic parent–child communication patterns. The original scale contained 20 items across parental perceptions of their own mood stability and regulation when interacting with their child, frequency and speed of conflict escalation in discussion with their child, and their perception of their child's regulatory ability during discussion or conflict. An exploratory principal components factor analysis was conducted and results are presented in Table 1. Initial eigenvalues indicated that the first factor explained 26 % of the variance (eigenvalue 5.31), and subsequent factors "levelled off" and explained 9, 6, 5 and 5 %, with eigenvalues less than 2. The pattern of loadings and cross loadings observed indicated one unitary scale of 13 items, although the second factor that emerged was closely considered. Specifically, due to item content, we were expecting one factor to reflect primarily parent-initiated coercive behavior, and a second factor to reflect primarily perceived child-initiated coercive behavior. Interestingly, this was not the case. The 13 items that loaded on this factor (factor loadings >.50) were retained. Although the second factor explained 9 % of the variance, items that loaded highly on this factor were items that also loaded highly on the initial factor (i.e., did not differentially load onto a second factor). Consistent with a unitary conceptualization, the items that were not retained reflected more individual contributions to automatic transaction patterns and awareness/monitoring of the child (e.g., "I always know exactly how my child is feeling," and "I find it difficult to keep track of what my child is doing"). Internal consistency of the 13 item measure was high ($\alpha = .93$).

Table 1 Principal components factor analysis of Automaticity Scale (20 items)

Item	Factor 1 Eigenvalue: 5.31	Factor 2 Eigenvalue: 1.90
I find it difficult to keep track of what my child is doing	*.36*	*−.04*
When my child gets angry, he/she just blows up	.59	−.54
My child and I argue a lot	.57	−.27
When my child acts up, I am slow to lose my temper	*−.24*	*−.25*
My child gets upset easily	.52	−.47
When my child is upset, he/she is able to control his/her temper	*−.41*	*.52*
It takes me no time to lose my temper with my child	.65	.31
My mood often changes for no reason	.54	.29
Before my child loses his/her temper, there are warning signs that it is about to happen	*.06*	*.12*
When my child acts up, I just blow up	.65	.33
My child can be happy one moment and angry the next, often for no reason	.51	−.32
When my child and I disagree, we discuss it calmly	*−.40*	*.26*
When I ask my child to do something he/she doesn't want to do, he/she just loses it immediately	.58	−.38
When I am upset, I find it difficult to talk to my child calmly	.52	.15
I get upset easily	.72	.35
When I get mad with my child, I often say things that I will regret later	.55	.35
When my child gets angry, I get angry	.63	.23
Things get out of hand really quickly when my child and I are upset	.71	.14
It takes me time to lose my temper even when I am upset	*−.29*	*−.15*
I always know exactly how my child is feeling	*−.21*	*.08*

Italicized items were removed from final scale

Child Coping Competence

The Coping Competence Scale (CCS-R; Moreland and Dumas 2007) was used as a measure of child coping competence across social, achievement, and affective coping domains. This three-factor model of the CCS-R has been validated through confirmatory factor analysis (Moreland and Dumas 2007). Parent reports at baseline were included in the present study. The CCS-R consists of 26 items rating competence on a 5-point Likert scale, from (1) very good to (5) very poor. As in previous reports (Moreland and Dumas 2007), internal consistency was high in the present study (Cronbach's $\alpha = .93$ at pre-intervention in the current study).

Child Behavior

Child behavior across the domains of social competence, aggressive behavior, and anxiety/withdrawal was assessed with the Social Competence and Behavior Evaluation, Preschool Edition, Short Form (SCBE; LaFreneire and Dumas 1996). The SCBE is a measure of behavioral adjustment in the preschool years, validated for ages 2.5–6 years across multiple samples in the U.S. and Canada. The SCBE yields three summary scores reflecting

social competence, aggressive behavior, and internalizing symptoms, which have been shown to have high interrater and test–retest reliability, as well as internal consistency (LaFreneire and Dumas 1996). Parents and teachers both completed the measure at pre-intervention. Internal consistency in our sample ranged from Cronbach's $\alpha = .74$ to .85 across subscales and reporters at baseline.

Parenting Stress

Parents rated their own stress level at pre-intervention with the widely-used Parenting Stress Index Short Form (PSI-SF; Abidin 1997). The PSI-SF is a 36-item scale that asks respondents to rate items on a 5-point Likert scale from (1) strongly agree to (5) strongly disagree. For the present study, a total score (mean across items) was used and demonstrated internal consistency (Cronbach's $\alpha = .91$ at pre-intervention).

Parental Warmth/Respect

The warmth/respect subscale of the Parental Attitudes Towards Childrearing scale (PACR; Easterbrooks and Goldberg 1984, 1990) is comprised of 10 items that measure parents' attitudes about warmth and respect in the parent–child relationship. This measure is a subscale of the longer, widely-used PACR, which has shown internal consistency and test–retest reliability, as well as an association with observational measures of parent–child interactions (Easterbrooks and Goldberg 1984; McGuire and Earls 1993). Participants rated their agreement with each statement on a scale of (1) strongly disagree to (6) strongly agree. In the present study, this subscale demonstrated moderate internal consistency (Cronbach's $\alpha = .63$).

Results

Automaticity and Child Coping and Behavior at Baseline

To better characterize the link between automaticity and child functioning (coping and behavior), this study examined the relation between automaticity and child coping and behavior across home and school contexts at pre-intervention. A series of hierarchical multiple regression analyses were conducted to investigate the specific relation between automaticity and child functioning, after controlling for sociodemographic characteristics and other parenting factors. Separate regression analyses were conducted on parent and teacher reports for each domain of child coping (social, achievement, and affective) and each domain of child behavior (social competence, aggressive behavior, and anxiety/withdrawal). In Block 1, sociodemographic characteristics were entered into the equation, including parent sex, ethnicity (two dummy coded variables to represent African American, European American, and Other), child age, child sex, and family income. In Block 2, parenting characteristics were entered, including parental stress and parental warmth. Automaticity was entered in Block 3.

Child Coping Competence

Results for child coping competence are presented in Table 2. For parent report, overall models were significant across the three coping domains. For parent reported child social competence, child gender, child age, parenting stress, and parenting warmth emerged as significant predictors, and after accounting for variance associated with these predictors, higher automaticity was uniquely associated with lower social competence and added to the prediction of concurrent child social competence ($\Delta R^2 = .07$). For parent reported child affective and achievement competence, demographic and general parenting emerged as significant predictors of concurrent child coping (See Table 2), yet, automaticity did not significantly add to the models predicting affective and achievement competence.

Results were similar for teacher report. After controlling for sociodemographic variables, neither parenting variables nor automaticity added significantly to the prediction of concurrent affective or achievement competence. For teacher reported child social competence, after accounting for variance associated with sociodemographic variables, higher parent–child automaticity was uniquely associated with lower social competence and added to the prediction of concurrent child social competence ($\Delta R^2 = .013$).

Child Behavior

Results for child social competence, aggressive behavior, and anxiety/withdrawal are presented in Table 3. Sociodemographic variables, as well as parental stress and warmth, emerged as significant predictors of social competence, yet, automaticity did not add significantly to the model. For anxiety/withdrawal, only parental stress emerged as a significant predictor. For parent reported aggressive behavior, after accounting for variance associated with sociodemographics and parenting stress, higher automaticity was related to higher concurrent parent-reported aggressive behavior and added uniquely to the model ($\Delta R^2 = .06$).

Results were similar for teacher reported behavior across domains. Automaticity was not uniquely associated with concurrent teacher reported social competence or anxiety/withdrawal. Yet, after accounting for variance

Table 2 Hierarchical multiple regression analyses predicting child coping at baseline

Parent report	Social coping competence			Achievement coping competence			Affective coping competence		
	B	SE B	B	B	SE B	β	B	SE B	β
Step 1									
Parent age	−.00	.00	−.05	−.00	.00	−.05	−.01	.00	−.08
Parent gender	−.01	.07	−.00	−.05	.06	−.03	−.04	.07	−.02
Family income	−.00	.01	−.02	−.01	.01	−.07	.01	.01	.05
Child sex	−.09	.03	−.10**	−.11	.03	−.13***	−.11	.04	−.12**
Child age	.09	.02	.14***	.09	.02	.17***	.12	.02	.19***
Child ethnicity (D1)	−.02	.06	−.02	.09	.06	.11	.05	.07	.05
Child ethnicity (D2)	−.09	.06	−.09	−.05	.06	−.05	−.03	.07	−.03
Step 2									
Parenting stress	−.01	.00	−.31***	−.01	.00	−.27***	−.01	.00	−.25***
Parenting warmth	−.00	.00	−.13**	−.01	.00	−.16***	−.01	.00	−.19***
Step 3									
Automaticity	−.11	.05	−.11*	−.06	.04	−.07	−.04	.05	−.04
Teacher report	Social coping competence			Achievement coping competence			Affective coping competence		
	B	SE B	B	B	SE B	β	B	SE B	β
Step 1									
Parent age	.01	.04	.02	.05	.05	.06	.05	.04	.08
Parent gender	−.02	.92	−.00	−.39	1.11	−.02	.91	.91	.05
Family income	.17	.07	.13*	.14	.09	.09	.12	.07	.10
Child sex	−1.53	.47	−.15**	−2.65	.57	−.22***	−2.02	.46	−.20**
Child age	.70	.30	.11*	1.44	.36	.18***	1.16	.29	.18***
Child ethnicity (D1)	1.12	.88	.11	1.13	1.07	.09	1.61	.87	.16
Child ethnicity (D2)	1.84	.87	.18*	1.25	1.06	.10	2.22	.86	.22*
Step 2									
Parenting stress	.01	.01	.04	.00	.02	.00	.00	.01	−.00
Parenting warmth	−.03	.03	−.06	−.01	.04	−.01	−.02	.03	−.04
Step 3									
Automaticity	−1.49	.61	−.14*	−.46	.74	−.04	−.21	.60	−.02

D1 = African American coded as 1, D2 = European American coded as 1

* $p < .05$; ** $p < .01$; *** $p < .001$

associated with sociodemographics variables, automaticity added significantly to the model and higher parent–child automaticity was uniquely predictive of teacher-reported aggressive behavior ($\Delta R^2 = .012$).

Automaticity and Engagement in PACE Program

The second purpose of the present study was to investigate automaticity in relation to attendance and participation in the PACE program. As mentioned, treatment completers were considered those who attended more than half of the treatment sessions (five or more sessions). Treatment completers were compared to those who did not attend any sessions and those who completed four or fewer sessions in a three-way ANOVA. Results indicated significant differences in automaticity between groups; F (2,626) = 5.12, $p < .01$). Post hoc Tukey HSD test indicated that the source of significant difference was in the comparison of those who did not attend any sessions to those who completed treatment. Completers reported significantly higher automaticity at baseline ($M = 1.88$, $SD = .48$) as compared to those who did not attend ($M = 1.73$, $SD = .45$, $p < .01$). No other group differences emerged, and those who attended but did not complete reported mean automaticity of 1.81 ($SD = .48$). No significant correlation was found between participation ratings and automaticity ($r = -.02$, *n.s.*), so no additional analyses were conducted.

Table 3 Hierarchical multiple regression analyses predicting child functioning at baseline

Parent report	Social competence			Aggressive behavior			Anxiety/withdrawal		
	B	SE B	B	B	SE B	β	B	SE B	B
Step 1									
Parent age	−.01	.00	−.05	.01	.00	.06	.01	.00	.08
Parent gender	.04	.11	.01	−.05	.10	−.02	.03	.09	.01
Family income	.01	.01	.03	.00	.01	.01	.01	.01	.06
Child sex	−.13	.06	−.08*	.06	.05	.04	−.00	.05	−.00
Child age	.17	.04	.17***	−.04	.03	−.04	.04	.03	.05
Child ethnicity (D1)	.14	.10	.09	.06	.10	.04	−.25	.09	−.21**
Child ethnicity (D2)	.00	.10	.00	.09	.10	.06	−.10	.08	−.08
Step 2									
Parenting stress	−.01	.00	−.25***	.01	.00	.31***	.01	.00	.26***
Parenting warmth	−.02	.00	−.27***	−.01	.00	−.08	.00	.00	.01
Step 3									
Automaticity	−.09	.07	−.06	.42	.07	.27***	.06	.06	.0
Teacher report	Social competence			Aggressive behavior			Anxiety/withdrawal		
	B	SE B	B	B	SE B	β	B	SE B	β
Step 1									
Parent age	.01	.07	.01	−.01	.07	−.01	.03	.05	.03
Parent gender	−.09	1.66	−.00	.80	1.75	.02	.97	1.20	.04
Family income	.09	.13	.04	−.14	.14	−.06	−.11	.10	−.07
Child sex	−3.76	.84	−.21***	3.08	.89	.17**	1.26	.61	.10*
Child age	1.73	.54	.15**	−.71	.57	−.06	−.23	.39	−.03
Child ethnicity (D1)	.61	1.59	.03	−1.62	1.68	−.09	−1.56	1.15	−.12
Child ethnicity (D2)	2.97	1.57	.16	−2.81	1.67	−.15	−1.44	1.14	−.11
Step 2									
Parenting stress	−.02	.03	−.03	−.03	.03	−.06	.01	.02	.04
Parenting warmth	−.10	.06	−.10	−.03	.06	−.03	.02	.04	.02
Step 3									
Automaticity	−.54	1.10	−.03	2.80	1.16	.15*	.55	.80	.04

D1 = African American coded as 1, D2 = European American coded as 1

* $p < .05$; ** $p < .01$; *** $p < .001$

Impact of Intervention on Automaticity

The third purpose of the present study was to investigate change in automaticity related to attendance in the PACE program. To investigate change in automaticity from pre- to post-intervention, a repeated measures ANOVA was conducted, in which those who completed five or more sessions were compared to those who attended fewer sessions. Sociodemographic characteristics were also entered as covariates. Significant within-subjects effects for time (pre- to post-intervention) emerged, indicating change in automaticity over time across the sample, F (1, 510) = 3.89, $p < .05$. A significant between-subjects effect for child gender also emerged, F (1, 510) = 5.41, $p < .05$, with higher automaticity reported for boys. A significant interaction between time (pre- and post-intervention) and attendance status emerged, F (1, 510) = 4.57, $p < .05$. Results indicated that those who attended the program, in addition to reporting higher levels of baseline automaticity, also reported decreased automaticity at post-intervention. Those attending fewer than 5 sessions did not report decreases in automaticity, although as noted, they also reported lower automaticity at baseline (See Fig. 1). Finally, a significant interaction between automaticity and child sex emerged, F (1, 510) = 6.75; $p < .05$. Results indicated that the mothers of boys reported significant decreases in automaticity from pre- to post-intervention, whereas the mothers of girls, overall, did not report significant decreases (See Fig. 2).

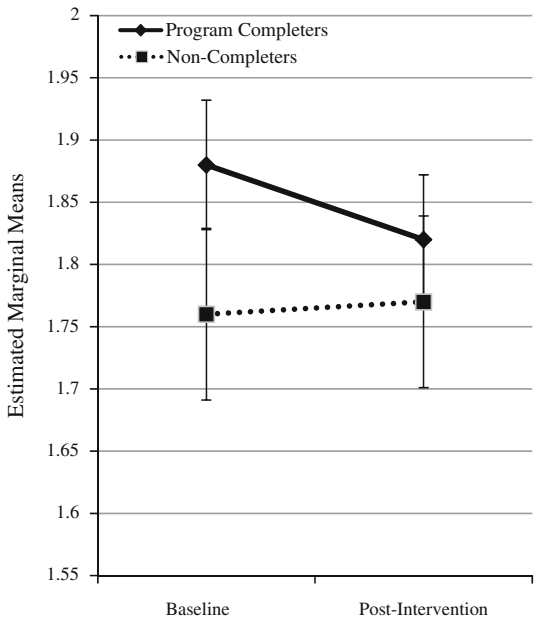


Fig. 1 Interaction between attendance and automaticity at baseline and post-intervention

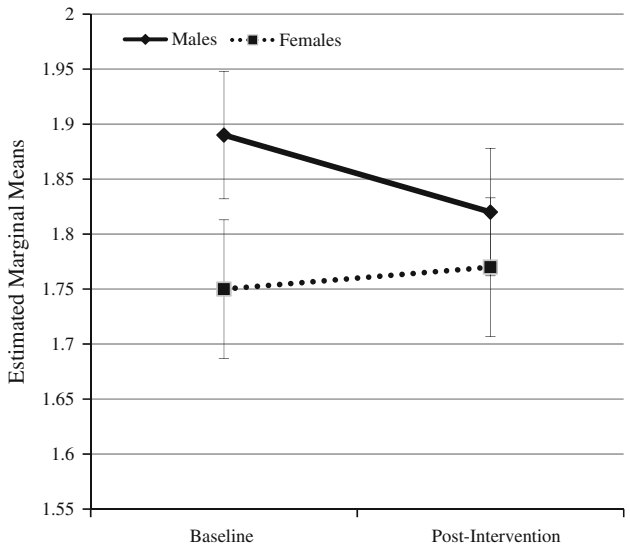


Fig. 2 Interaction between child sex and automaticity at baseline and post-intervention

Discussion

This study aimed to better characterize the link between automaticity in parent–child interactions and child coping and behavior at home and school, as well as the relation between automaticity and attendance in a preventive parenting programming. First, factor analytic results indicated that the measure of negative parent–child automaticity was capturing a unitary construct, as opposed to assessing distinct parent versus child behaviors. Next, results indicated that negative parent–child automaticity, after accounting for other sociodemographic and parenting factors, was not uniformly associated with child coping and behavior, but was specifically associated with social coping competence and aggressive behavior. This finding was replicated in both parent and teacher reports of coping and behavior. Regarding aggressive behavior, these findings may indicate risk for automatic negative and escalating parent–child interactions at later development stages, primarily adolescence, which have been identified as significant risk factors for adolescent antisocial behavior (Patterson et al. 1992). Automatic transaction patterns at stages of development later than toddlerhood, such as in parent–adolescent dyads, are conceptualized as relationship specific and polarizing primarily within the dyad. Interestingly, and consistent with the transition from parent–child co-regulation to increasing child self-regulation during the toddler years (Olson and Lunkenheimer 2009), automatic transaction patterns between parents and children not only impacted the level of child difficulties reported by the parent, but also at preschool with teachers and peers.

Behavioral parenting training programs represent a validated and evidence-based approach to address disruptive behavior and theoretically increase harmony in the parent–child relationship (Barkley 1997; Webster-Stratton 1998; Begle and Dumas 2011). Therefore, it is important to better understand how parent–child automaticity relates to such programming. While these approaches are well-validated, difficulties with attendance and engagement are problematic, and research has indicated that in addition to social and systemic barriers to engagement, there are social-cognitive barriers to parental engagement as well (Mah and Johnston 2008). Although automaticity was originally hypothesized as a barrier to behavioral change, the present study found that the highest reported levels of parent–child automaticity were associated with increased attendance in the PACE program. In other words, parents who perceived themselves as struggling most with automatic, negative, and escalating interactions attended at higher rates than counterparts with lower automaticity. Specific social-cognitive barriers that have been identified include parental attributions of the etiology of disruptive behavior, and there is evidence that when parents believe the cause of the behavior lies completely within the child, parents are less likely to accept parenting interventions as a valid means of change (Mah and Johnston 2008). The findings of the present study are promising, in that focusing on automaticity in the parent–child relationship may be more congruent with a child-centered attribution than a focus solely on parenting skills or deficits. It is possible that highlighting automaticity as a target of intervention in educational materials could enhance parent interest and motivation for attendance. Similarly, screening for

automaticity at time of enrollment could be investigated as a possible strategy for improving the efficacy of PACE. Such screening strategies could be coupled with brief, personalized feedback to provide to potential participants in building interest and/or motivation to attend the PACE program or similar parent training programs. It is also important to note that once in the session, parents with high rates of automaticity participated at the same level overall as other parents.

Also promising was evidence that parent–child automaticity may be positively impacted by behavioral parent training in a group format. Because the present study did not include an RCT, future research is needed to investigate whether the change in automaticity from pre- to post-assessment can be specifically attributed to the PACE programming. Automaticity, by definition, is mindless and resistant to change, making it a questionable target for an intervention at the preventive level. Additionally, as the target of parent–child interactions involves the child as well as the parent, it was unclear whether a parent-only intervention could effectively target these interaction patterns. Interestingly, results indicated that when automaticity was high at baseline, those who completed the program (i.e., attended five or more sessions) experienced significant decreases in automaticity at the end of 8 weeks. This shows that automaticity may indeed be altered early in the development of the parent–child relationship, which may positively impact subsequent parent–child interactions. It will be important for future research to investigate potential moderators of this change; for example, it could be hypothesized that other established benefits, such as decreased parental stress, allow parents the time and energy necessary to parent in a more mindful manner. In addition, there was evidence of a time x child sex interaction, which indicated that it was the parents of boys who reported significant decreases in automaticity. In light of a large body of evidence, as well as results of the present study indicating that disruptive behavior problems are more common in young boys, this finding again highlights that the parent intervention was most effective when parents presenting for the program reported high levels of difficulty with their children. As future research continues to investigate the role of automatic transaction patterns in child coping and behavior as well as engagement in parent training programs, the role of interventions aimed at improving mindfulness should be examined. Specifically, acceptance and commitment techniques, mindfulness training and meta-cognition training could all be considered candidate techniques to decrease negative parent–child automaticity and deserve future attention.

A number of limitations should be considered when interpreting the results of the present research. First, the present study represents only a first step in validating this measure of automaticity, and although results indicated internal consistency and predictive validity at home and school, the measure has not been used widely. Factor analytic results from this study should be replicated on novel samples. Of interest, a number of the items that did not load onto the unitary factor identified through factor analysis were those that were reverse coded. Although this could be a sign of reporter bias, it also suggests that a more comprehensive assessment of parent–child automaticity would take into account positive parent–child automaticity. As these items did not load onto a secondary factor together, it is likely that additional construct and item development is needed to better reflect positive parent–child automaticity (as opposed to the absence of negative parent–child automaticity). Additionally, assessment of automaticity relied on parent report; and therefore is best conceptualized as parent perceptions of automaticity.

Future research should include observational methods as well to further validate this measure. Similarly, although the present study established a significant relation between automaticity and child outcomes, the processes linking broadly defined parenting behavior, automaticity, and child outcomes are likely complex. For example, future research would do well to investigate automaticity as a mediating factor in the link between broader parenting (e.g., consistency, responsiveness, parenting information) and child outcomes. Also, the general assessment of parenting warmth used in the present study, although validated and used widely in the literature, had questionable internal consistency. This also provides a rationale for further investigating automaticity as it relates to a broader range of validated assessments of parenting behavior and characteristics. And finally, while change observed in automaticity immediately post-treatment is promising, additional research is needed to examine this malleability at longer intervals.

Overall, the results of the present study support parent–child automaticity as not only a correlate of child functioning at home, but also for how children function in the preschool environment with teachers and peers. Additionally, the results provide preliminary evidence that a time-limited, parent-only preventive program can decrease parent–child automaticity around negative interactions. It will be important for future research to investigate whether such programming increases automatic, efficient, and harmonious parent–child interaction patterns.

References

Abidin, R. R. (1997). Parenting Stress Index: A measure of the parent–child system. In C. P. Zalaquett & R. Wood (Eds.), *Evaluating stress: A book of resources* (pp. 277–291). Lanham, MD: Scarecrow Press.

Bargh, J. A., & Ferguson, M. J. (2000). Beyond behaviorism: On the automaticity of higher mental processes. *Psychological Bulletin, 126*, 925–945.

Bargh, J. A., Schwader, K. L., Hailey, S. E., Dyer, R. L., & Boothby, E. J. (2012). Automaticity in social-cognitive processes. *Trends in Cognitive Sciences, 16*, 593–605.

Barkley, R. A. (1997). *Defiant children: A clinician's manual for assessment and parent training* (2nd ed.). New York: Guilford.

Begle, A. M., & Dumas, J. E. (2011). Child and parental outcomes following engagement in the preventive parenting program: Efficacy of the PACE Program. *Journal of Primary Prevention, 32*, 67–81.

Begle, A. M., Lopez, C. M., Cappa, K., de Arellano, M. A., & Dumas, J. E. (2012). Ethnicity differences in child and parent outcomes following engagement in the PACE program. *Behaviour Research and Therapy, 50*(1), 56–64. doi:10.1016/j.brat.2011.09.009.

Calkins, S. D., & Hill, A. (2007). Caregiver influences on emerging emotion regulation: Biological and environmental transactions in early development. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 229–248). New York: Guilford Press.

Dumas, J. E. (2003). Parenting our Children to Excellence (PACE-M) program manual.

Dumas, J. E. (2005). Mindfulness-based parent training: Strategies to lessen the grip of automaticity in families with disruptive children. *Journal of Clinical Child and Adolescent Psychology, 34*, 779–791.

Dumas, J., Begle, A. M., French, B., & Pearl, A. (2010). Effects of monetary incentives on engagement in the PACE parenting program. *Journal of Clinical Child and Adolescent Psychology, 39*, 302–313. doi:10.1080/15374411003691792.

Dumas, J. E., Lynch, A. M., Laughlin, J. E., Smith, E. P., & Prinz, R. J. (2001). Promoting intervention fidelity: Conceptual issues, methods, and preliminary results from the EARLY ALLIANCE prevention trial. *American Journal of Preventive Medicine, 20*, 38–47.

Dumas, J. E., Nissley-Tsiopinis, J., & Moreland, A. (2007). From intent to enrollment, attendance, and participation in preventive parenting groups. *Journal of Child and Family Studies, 16*, 1–26. doi:10.1007/s10826-006-9042-0.

Dumas, J. E., Prinz, R. J., Smith, E. P., & Laughlin, J. (1999). The EARLY ALLIANCE prevention trial: An integrated set of interventions to promote competence and reduce risk for conduct disorder, substance abuse, and school failure. *Clinical Child and Family Psychology Review, 2*, 37–53.

Easterbrooks, M., & Goldberg, W. A. (1984). Toddler development in the family: Impact of father involvement and parenting characteristics. *Child Development, 55*, 740–752.

Easterbrooks, M. A., & Goldberg, W. A. (1990). Parental attitudes toward childrearing (PACR). In J. Touliatos, B. Perlmutter, & M. Strauss (Eds.), *Handbook of family measurement techniques* (pp. 341–342). Newberry Park, CA: Sage.

Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). Prosocial development. In W. Damon, R. M. Lerner, & N. Eisenberg (Eds.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (6th ed., pp. 646–718). New York: Wiley.

Furlong, M., McGilloway, S., Bywater, T., Hutchings, J., Smith, S. M., & Donnelly, M. (2012). Group parenting programmes for improving behavioral problems in children aged 3 to 12 years. *Cochrane Database of Systematic Reviews, 2*, CD008225. doi:10.1002/14651858.CD008225.pub2.

Heinrichs, N., Kliem, S., & Hahlweg, K. (2014). Four year follow-up of a randomized controlled trial of Triple P group for parent and child outcomes. *Prevention Science, 15*, 233–245.

Hoza, B., Owens, J. S., Pelham, W. E., Swanson, J. M., Conners, C. K., Hinshaw, S. P., et al. (2000). Parent cognitions as predictors of child treatment response in ADHD. *Journal of Abnormal Child Psychology, 28*, 569–583.

Kaminski, J. W., Valle, L. A., Filene, J. H., & Boyle, C. L. (2008). A meta-analytic review of components associated with parent training program effectiveness. *Journal of Abnormal Child Psychology, 36*, 567–589. doi:10.1007/s10802-007-9201-9.

LaFreneire, P. J., & Dumas, J. E. (1996). Social competence and behavior evaluation in children ages 3 to 6 years: The Short Form (SCBE 30). *Psychological Assessment, 8*, 369–377.

Lunkenheimer, E. S., Olson, S. L., Hollenstein, T., Sameroff, A. J., & Winter, C. (2011). Dyadic flexibility and positive affect in parent–child co-regulation and the development of child behavior problems. *Development and Psychopathology, 23*, 577–591.

Mah, J. W., & Johnston, C. (2008). Parental social cognitions: Considerations in the acceptability of and engagement in behavioral parent training. *Clinical Child and Family Psychology Review, 11*, 218–236.

McGuire, J., & Earls, F. (1993). Exploring the reliability of measures of family relations, parental attitudes, and parent–child relations in a disadvantaged minority population. *Journal of Marriage and the Family, 55*, 1042–1046.

Milner, J. S. (1993). Social information processing and physical child abuse. *Clinical Psychology Review, 13*, 275–294.

Moreland, A., & Dumas, J. E. (2007). Evaluating child coping competence: Theory and measurement. *Journal of Child and Family Studies, 17*, 437–454.

Olson, S. L., & Lunkenheimer, E. S. (2009). Expanding concepts of self-regulation to social relationships: Transactional processes in the development of early behavioral adjustment. In A. J. Sameroff (Ed.), *Transactional processes in development* (pp. 55–76). Washington, SC: APA Press.

Patterson, G. R., Reid, J. B., & Dishion, T. J. (1992). *A social interactional perspective: Vol 4. Antisocial boys.* Eugene, OR: Castlia.

Prinz, R. J., & Miller, G. E. (1994). Family-based treatment for childhood antisocial behavior: Experimental influences on dropout and engagement. *Journal of Consulting and Clinical Psychology, 62*, 645–650.

Reyno, S. M., & McGrath, P. J. (2006). Predictors of parent training efficacy for child externalizing behavior problems- a meta-analytic review. *Journal of Child Psychology and Psychiatry, 47*, 99–111.

Spinrad, T. L., Eisenberg, N., Gaertner, B., Popp, T., Smith, C. L., Kupfer, A., et al. (2007). Relations of maternal socialization and toddlers' effortful control to children's adjustment and social competence. *Developmental Psychology, 43*, 1170–1186.

Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: Strengthening parenting competencies. *Journal of Consulting and Clinical Psychology, 66*, 715–730.

Copyright of Journal of Child & Family Studies is the property of Springer Science & Business Media B.V. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

J Child Fam Stud (2015) 24:1932–1942
DOI 10.1007/s10826-014-9993-5

ORIGINAL PAPER

Autonomous and Controlled Motivation for Parenting: Associations with Parent and Child Outcomes

Tomas Jungert · Renée Landry · Mireille Joussemet · Geneviève Mageau · Isabelle Gingras · Richard Koestner

Published online: 14 June 2014
© Springer Science+Business Media New York 2014

Abstract The present investigation examined motivation for parenting and some of its correlates in parents and children. The data came from samples of 151 first-time mothers of infants, 153 mothers of middle school children, and 260 mothers and fathers of high school children. Parents provided self-report data about their motivation in their parenting role as well as reports of role satisfaction, parental competence, child temperament, and parenting styles. Using three samples, factor analyses confirmed the distinction between autonomous and controlled forms of parenting motivation. Autonomous motivation refers to investing in the parenting role because it is interesting and meaningful whereas controlled motivation refers to investment based on external or internal pressures. Results showed that autonomous motivation was associated concurrently with parenting satisfaction and competence as well as with authoritative and autonomy-supportive parenting styles. Child temperament was unrelated to parenting motivation, but mothers reported greater autonomous motivation for girls than boys and for younger children rather than older children. Autonomous parenting motivation was associated with children reporting autonomy supportive parenting and high levels of well-being. A prospective analysis showed that controlled parenting motivation in first time mothers was associated with reductions in parenting satisfaction as infants became toddlers. A similar analysis showed that autonomous parenting motivation was associated with children developing fewer behavior problems whereas controlled motivation was associated with children developing more behavioral problems. The present findings highlight the heuristic value of assessing why parents invest themselves in the parenting role.

Keywords Motivation for parenting · Role satisfaction · Parental competence · Child temperament · Parenting style

T. Jungert (✉)
Department of Behavioural Sciences and Learning, Linköping University, 581 83 Linköping, Sweden
e-mail: tomas.jungert@liu.se

R. Landry · I. Gingras · R. Koestner
McGill University, Montréal, QC, Canada

M. Joussemet · G. Mageau
Université de Montréal, Montréal, QC, Canada

Introduction

Why do people invest themselves in the parenting role? Parents are no doubt motivated by the important role they can play in fostering their children's learning, well-being, and psychosocial adjustment (Joussemet et al. 2008). Yet, parents may be motivated for other reasons, as well. They may be motivated by the interest, challenge, and meaningfulness of the parenting role (termed "autonomous motivation"), but it is also possible others' expectations about how they should act as parents (termed "controlled motivation") are the driving force behind their parenting.

Self-determination theory (SDT; Deci and Ryan 2000, 2008) uses the concept of innate, universal, psychological needs to understand human motivation. The theory posits that humans have fundamental needs to feel related, competent, and autonomous in order to develop and function optimally (Deci and Ryan 2000). Relatedness refers to feeling connected and cared for by others whereas competence refers to feeling effective and efficacious (Deci and Ryan 2000). The core feature of SDT, however, is the emphasis it places on the need for autonomy which refers

to the experience of volition in initiating or endorsing behaviors. Stated differently, autonomy means to authentically concur with the internal or external forces that influence behaviors. Autonomy should not be confused with independence or selfishness, rather, autonomy is about volitional, harmonious, and integrated functioning, in contrast to more pressured, conflicted, or alienated experience (Deci and Ryan 2000).

Self-determination theory suggests that humans have an innate propensity toward pursuing their intrinsic needs by expressing their interests, seeking to master their environment, and by integrating the values, behaviors, and attitudes of their social surroundings (Ryan 1995). SDT's organismic assumption of innate integrative tendencies underlying social development (Ryan 1995) is in line with attachment theories that posit a biologically driven propensity to comply with society's norms (e.g., Stayton et al. 1971). Importantly, SDT also highlights the role of the social context, which can either facilitate or undermine intrinsic and integrative processes. Both intrinsic motivation and internalization are likely to function optimally when children's need for autonomy is supported by parents, teachers, and other socialization agents (Ryan and Deci 2000).

Parenting research in the SDT tradition has focused on parents' use of autonomy support to help their children internalize important values and guidelines (Grolnick et al. 1991; Pomerantz et al. 2005). Autonomy support is defined as encouraging volitional functioning in others by affording opportunities for making choices and initiating actions. For example, studies suggest that parental autonomy support is associated with internalization (Joussemet et al. 2004), adjustment at school (Grolnick and Ryan 1989; Joussemet et al. 2005) and psychosocial functioning (Soenens et al. 2007). In addition, research has found that autonomy supportive interventions are effective for children (Su and Reeve 2011) and that parental autonomy support in their children's education predicts positive outcomes (e.g., Froiland 2011). In a qualitative study, Froiland (2013) found that parents experienced that parental autonomy support was associated with children gaining an intrinsic focus and greater enjoyment in many areas.

However, another important question is how the parents themselves internalize expectations, values, and guidelines about how to behave as parents. There are diverse norms about what it means to be a good parent and it seems likely that parents vary greatly in the extent to which they have autonomous versus controlled reasons for pursuing various aspects of the parenting role. Furthermore, the type of motivation toward the parenting role may be importantly related to parenting behavior, parenting adjustment, and child outcomes.

The value of examining parenting motivation can be inferred from a parallel set of studies that have examined teachers' motivation, teacher autonomy support, and student outcomes. Pelletier et al. (2002) conducted a questionnaire study with 254 teachers, from grades 1–12. Four types of teachers' motivation were assessed, including intrinsic motivation, identified regulation, introjected regulation and external regulations. A summary index of self-determination was constructed by combining the intrinsic and identified items and subtracting the extrinsic and introjected items. As expected, teachers' autonomous motivation was associated with autonomy-supportive behavior toward their students.

Another study assessed both teachers and their students to examine the impact of teacher motivation (Roth et al. 2007). It was found that autonomous motivation for teaching was associated with autonomy-supportive behavior (as reported by students), which in turn was associated with students' autonomous motivation for learning. Also, autonomous motivation for teaching was positively associated with teachers' sense of personal accomplishment, while it was negatively associated with emotional exhaustion. Together, these studies suggest that, for teachers, autonomous motivation fosters an autonomy-supportive socialization style, which in turn promotes positive outcomes for children. We hypothesize that the same pattern of relations would hold true for parents. That is, parents who possess autonomous motivation for their parenting activities should be more likely to behave in an autonomy supportive manner toward their children. Such an autonomy-supportive parenting style should, in turn, result in positive child outcomes as well as positive outcomes for parents.

The present investigation sought to examine the link between motivation for parenting and parents' behavior and adjustment, as well as the experiences of their children. We developed a scale to assess motivation toward parenting based on methods used to develop scales for motivation in other domains (Ryan and Connel 1989). Specifically, items were constructed to assess various reasons for investing in parenting: intrinsic ("I invest myself in parenting because of the pleasure and satisfaction that I experience in taking care of my child"), identified ("because taking good care of my child is important to me and part of my values"), extrinsic ("because I want those around me to see me as a good parent") and introjected ("because I really want to be a good parent and I would be ashamed if I wasn't"). We planned to combine the intrinsic and identified items to form a six-item scale of autonomous motivation and to combine the extrinsic and introjected items to form a six-item scale of controlled motivation. After confirming the psychometric adequacy of our 12-item scale of parenting motivation, we planned to test

the relation of autonomous and controlled parenting motivation to a diverse set of parent and child outcomes.

The parenting motivation scale was administered to over 500 parents who were assessed in the context of three different data collection efforts. The first data collection involved first time mothers whose child was between the ages of one and two (Landry et al. 2008). The second data collection involved mothers who had middle school children between the ages of 8 and 14 years old. The final data collection involved mothers and fathers who had high school children between the ages of 12 and 17 (Milyavskaya et al. 2009). All parents completed the parenting motivation scale as well as measures of parenting satisfaction and competence. Demographic information was also collected. A variety of other scales were completed by subsamples of mothers, including reports of parenting practices and children's temperament.

There were three distinct data sets collected in this investigation: (1) 151 first-time mothers of young infants who were followed up 1 year later; (2) 153 mothers of middle school children; (3) 260 parents of high school students, whose children also completed scales. We chose not to report the three data collection efforts as Study 1, 2, and 3 because the results are easier to comprehend when organized in terms of the specific research questions.

Study 1 reports a series of analyses of the entire sample of over 500 parents to establish the reliability and basic construct validity of the parenting motivation scales. Specifically, after exploring the factor structure of the autonomy and controlled motivation scales, correlational analyses explored their relation to demographic factors and reports of maternal role satisfaction and perceived competence. Autonomous parenting motivation was expected to be positively associated with parental satisfaction and competence whereas the opposite was expected for controlled motivation. We did not offer any specific hypotheses regarding the relation of parenting motivation to demographic factors. For the subsample of mothers of infants, the relations of the motivation scales to parenting styles and child temperament measures were explored. We expected that autonomous motivation would be positively associated with authoritative and autonomy supportive parenting styles. We expected controlled parenting motivation to be negatively related to an authoritative parenting style and autonomy-supportive parenting practices. Finally, we hypothesized that children with a difficult temperament might elicit in their mothers controlling parenting motivation rather than autonomous parenting motivation.

Study 2 used data from parents of high school children to explore the relations of parenting motivation to children's well-being and to their perceptions of parental autonomy support. We expected that autonomous parenting motivation would be positively associated with children's reporting that their parents used autonomy supportive parenting methods. We also expected that children of parents who were higher in autonomous parenting motivation would report better mood and higher self esteem.

Study 3 used a prospective longitudinal design to explore the relation of first-time mothers' parenting motivation to their own adjustment and their child's adjustment over the course of 1 year as their children moved from infancy to toddlerhood. Our guiding hypothesis was that autonomous parenting motivation would be associated with adaptive outcomes for both mothers' and children whereas controlled parenting motivation would not.

Study 1

We combined the data across our three major data collection efforts in order to explore the factor structure and the basic construct validity of the parenting motivation measure.

Method

Participants

Sample 1

One hundred and fifty-three Canadian first time mothers with children under the age of two participated on a voluntary basis. Thirty-five percent of participants were native English-speakers, 52 % were French-speakers, and 13 % reported another native language. Mean yearly family income was between 50,000$ and 75,000$ CDN, and 63 % of participants reported earning this amount or more. Most of the mothers were university educated (e.g., 49 % completed an undergraduate degree, 18 % completed graduate school). The average age of children was 11.4 months. The data collection of this sample is fully described by Landry et al. (2008).

Of the 162 questionnaires that were sent out, 153 (94.4 %) were completed and returned.

Sample 2

The research involved 151 mothers from Montreal (Quebec) with children between the ages of 8 and 16 with a mean of 10.9 years old. The survey asked mothers to report on their motivation for parenting as well as to describe their feelings about being a mother. 67 % of mothers reported English as their native language, 4 % reported French as their native language and 29 % had another native language. Mean yearly family income was between $30,000

and $50,000 a year and 72.5 % of the participants reported earning this amount or more. Many of the mothers were university educated (e.g., 38.2 % completed an undergraduate degree only, and 19.6 % completed both an undergraduate degree and graduate degree). Of the 163 questionnaires sent out, 151 mothers (92.6 %) completed and returned them.

Sample 3

We used data collected as part of a cross-cultural study on over-scheduling and school outcomes (Gingras 2007). Participants were 280 parents (75 % mothers) of students aged 12–18 (mean age 14.5 years old) from Canada, the US, and France. Students were recruited from two high schools in California, USA, two high schools in Quebec, Canada and two high schools in France. We only include the data from cases where both the parent and the child completed the scales. Parental reports were obtained for 97 of 155 French students (63 %), 116 of 248 Canadian students (47 %), and 61 of 161 (38 %) American students.

Procedure

Participants in sample 1 were recruited from the community via newspaper advertisements, flyers, and through social networking among new mothers in Quebec, Canada. Interested mothers who met criteria for the study were sent a questionnaire by mail, along with a 20.00$ gift certificate and were asked to return the questionnaire in the provided stamped and addressed envelope. The questionnaires were originally constructed and written in English, and translated into French by bilingual French-Canadian researchers. Translated versions of the questionnaire were also back-translated to ensure that meaning of each item was conveyed accurately, and discrepancies were resolved through discussion.

Participants in sample 2 were recruited through an ad in the "Montreal Family Magazine". The ad was meant to target both mothers and fathers but almost all of the respondents were mothers. Interested parents were sent a questionnaire by mail. If the parents had more than one child between the ages 8 and 16, they were told to report on the child closest to age 12. Once the questionnaire was completed and returned (along with the consent form) in the stamped and addressed envelope provided, participants were sent a 20.00$ gift certificate of a popular book store. The instruments included in the questionnaire were constructed and written in English.

In sample 3, students completed questionnaires during an allotted time during the school day in each school, with permission from the principals. Parents were also asked to complete a short questionnaire; no compensation was offered in this study.

Measure Completed by Mothers in All Studies

Parenting Motivation

An adapted version of the Self-Regulation Questionnaire (Ryan and Connel 1989) was used to assess motivation toward parenting. Parents were asked why they invested time and energy in the task of child rearing. The stem used was "I am motivated to take care of my child because…" Twelve items, three for each type of motivational style, were rated on a seven-point scale, from "strongly disagree" to "strongly agree." Items included "because of the pleasure and satisfaction that I experience in taking care of my child" (intrinsic motivation); "because taking good care of my child is important to me" (identified motivation); "because if I wasn't a good parent, I would feel guilty" (introjected regulation); "because I want those around me to see me as a good parent" (extrinsic regulation). Subscales for autonomous motivation (intrinsic and identified motivation) and controlled motivation (introjected and external regulation) were created by calculating the mean of six items. Table 2 provides all of the items. The scale does not assess the extent to which parents actually invest time and energy, rather, it examines why parents believe they are investing time and energy into their role as parents.

Perceived Parental Competence and Parental Satisfaction

Perceived parental competence and parental satisfaction were assessed with a modified version of the self-perceptions of the parental role instrument (SPPR; MacPhee et al. 1986). The original SPPR is a 22-item measure consisting of four scales that assess different aspects of the parental role: Competence, Satisfaction, Investment, and Role Balance. Each item is made up of a pair of statements that describe contrasting endpoints of a parenting dimension. Twelve items from the competence and satisfaction subscales were used, six items from each scale. Items were modified for the purpose of clarity, such that instead of choosing one side or the other (e.g., "being a parent is a satisfying experience for me" versus "being a parent is not at all satisfying for me") participants were asked to rate the extent to which they agreed with only one side of the statement. In addition, the items were personalized (e.g., instead of "some parents feel," the modified version used "I feel"). An example of a competence item is "I feel that I am doing a good job of providing for my child's needs." The questions were answered on a seven-point scale

ranging from disagree to agree. The reliabilities for the competence and satisfaction scales were adequate, $\alpha > .75$.

Demographic Information

Participants were asked to indicate their child's gender and their own age, ethnicity, level of education completed, and approximate yearly family income.

Measures Completed by Subsamples of Mothers

Temperament of Child

This construct was assessed in the data collection of mothers of infants. A shortened version of the Infant Characteristic Questionnaire (ICQ; Bates et al. 1979) was used to assess parents' perceptions of their child's "difficult temperament." Seven items assessing fussiness that were applicable to different-aged children were used in the current study. Sample items included: "how much does your baby cry and fuss in general?" and "what kind of mood is your baby generally in?" Ratings were made on a seven-point scale ranging from "not at all" to "a great deal." Internal consistency for the Fussy-Difficult subscale was .79 in the original study (Bates et al. 1979) and it was .78 in this study.

Maternal Permissiveness and Authoritativeness

A modified version of the Parenting Practices Questionnaire (Robinson et al. 2001), which is based on Baumrind's (1971) authoritative, authoritarian, and permissive typology was used to assess parental permissiveness and authoritativeness. The PPQ is a 62-item parent self-report measure that was originally developed to assess parenting styles among parents of preadolescent children. However, only items that seemed appropriate for very young children were used in the current study. Eight items from the permissive subscale were used. Each item was rated on a scale from 1 (never) to 5 (always). Sample items include: "I spoil my child", and "I find it difficult to set limits with my child". Eight items were also used from the authoritative parenting scale. Sample items include "I give praise when my child is good," and "I convey my expectations regarding behavior to my child before s/he engages in an activity." The two scales had only modest reliability, $\alpha = .61$ and .60, and they were uncorrelated, $r = -.10$.

Satisfaction with Life Scale (SWLS)

The SWLS is a five-item scale that assesses global life satisfaction (Diener et al. 1985). Participants rated items such as "the conditions of my life are excellent" on a seven-point scale of agreement. Reliability and validity of the SWLS are described by Diener et al. (1985). The internal reliability in this study was $\alpha = .87$.

Mood Valence

A nine-item affect scale was used (Emmons 1992). Participants were asked to rate each item, based on how they felt that during the past week, using a scale of 1–5, with one representing very slightly and five representing extremely. The items were: joyful, unhappy, worried/anxious, enjoyment/fun, depressed, pleased, happy, angry/hostile, and frustrated. Negative affect items were reversed and combined with the positive items. These scales have excellent temporal reliability and internal consistency (Diener et al. 1985). In the present study the reliability was $\alpha = .83$.

Results

Preliminary Analyses

The 12 parenting motivation items were subjected to a principal components analysis with Varimax rotation. Two factors accounted for 51.72 % of the variance. The first factor had an Eigen value of 3.96 and the second had a value of 2.25. Table 1 shows the factor loadings for all items. It can be seen that the extrinsic and introjected items loaded on the first factor which appears to reflect controlled motivation, whereas the intrinsic and identified items loaded on the second factor which appears to reflect autonomous motivation. The six autonomous motivation items yielded an internal reliability of .78 whereas the six controlled motivation items yielded a reliability of .82. Autonomous and controlled parenting motivation scores were calculated as the mean of the six items loading on their respective factor. The two scales were moderately positively correlated, $r = .27$, $p < .01$. The second data collection included fathers as well as mothers. *t* tests were used to examine differences in parenting motivation between mothers and fathers. No significant differences were obtained: $t(266) = 1.49$ for autonomous motivation and $t(266) = -1.16$ for controlled motivation. The means were as follows: autonomous motivation, Mothers' $M = 6.17$, Fathers' $M = 6.04$; controlled motivation, Mothers' $M = 4.25$, Fathers' $M = 4.46$. The second data collection also included parents from three countries. A one-way analysis of variance revealed significant differences in reports of parenting motivation across the three countries: Autonomous motivation, $F(2,265) = 7.66$, $p < .001$; Controlled motivation, $F(2,265) = 4.25$, $p < .05$. French parents reported lower levels of

Table 1 Factor loadings of the parenting motivation scale

"I am motivated to take care of my child because…" Item	Factor 1 Controlled motivation	Factor 2 Autonomous motivation
I want those around me to see me as a good parent (extrinsic)	.786	.067
I want to prove to the people around me that I am a good parent (extrinsic)	.784	−.015
Others expect me to or the situation demands it (extrinsic)	.701	−.130
If I wasn't a good parent, I would feel guilty (introjected)	.707	.229
I really want to be a good parent and I would be ashamed if I wasn't (introjected)	.665	.237
I feel that I really ought to be a good parent and I would be disappointed in myself if I wasn't (introjected)	.626	.387
Taking care of my child is important to me and part of my values (identified)	.057	.748
It is very important to me to do all that I can do to promote the well-being of my child (identified)	.126	.684
It is important to me that my child has all that he/she needs (identified)	.240	.525
Of the enjoyment of learning new things about my child and myself (intrinsic)	.003	.696
Of the pleasure and satisfaction that I experience in taking care of my child (intrinsic)	−.038	.734
I feel a sense of personal accomplishment in taking care of my teenager in my own way (intrinsic)	.168	.659

autonomous motivation (M = 5.96) than Americans (M = 6.33) and Canadians (M = 6.20). They also reported higher levels of controlled motivation (M = 4.59) than Americans (M = 4.26) and Canadians (M = 4.07).

Central Analyses

Table 2 presents the partial correlations of autonomous parenting motivation and controlled parenting motivation with all of the other measures collected from mothers, except those in the prospective study. Partial correlations were used because of the significant positive relation between autonomous and controlled parenting motivation. It can be seen that autonomous parenting motivation was significantly positively associated with parent role satisfaction and parental competence, as well as with general life satisfaction and positive mood. Autonomous motivation was also significantly positively associated with authoritative and autonomy supportive parenting styles. Unexpectedly, autonomous motivation was higher for parents of girls than boys, and for parents with younger children. Autonomous parenting motivation was unassociated with education, income, child temperament, permissive parenting practices, and social desirability.

Table 2 Partial correlations of outcomes with parenting motivation

	Autonomous motivation	Controlled motivation
Family education, n = 563	.09	−.09
Family income, n = 563	.12	−.02
Child's sex (1 = boy, 2 = girl), n = 563	.16**	−.06
Child's age, n = 563	−.19**	−.05
Parent's age, n = 563	.07	−.04
Parent competence, n = 563	.28**	−.20***
Parent satisfaction, n = 563	.37**	−.17**
Infant temperament, n = 151	−.02	−.06
Permissive style, n = 67	−.09	.16
Authoritative style, n = 67	.46**	.09
Parent autonomy support, n = 77	24*	−.01
Parent life satisfaction, n = 260	.24*	−.19*
Parent mood, n = 260	.16*	−.26*

* $p < .05$; ** $p < .01$

Controlled parenting motivation was significantly negatively associated with parental competence, parental role satisfaction, general life satisfaction, and positive mood. No other correlations were significant for controlled motivation.

Discussion

This study explored the factor structure of the parenting motivation scale and its relation to different parent and child variables. The factor solution revealed two distinct factors reflecting controlled parenting motivation and autonomous parenting motivation. Surprisingly, these two dimensions of parenting motivation were moderately positively related to each other, necessitating the use of partial correlation analyses to explore their correlates. While autonomous motivation was associated with higher self-ratings of parental competence, role satisfaction, higher positive mood and life satisfaction, controlled motivation was negatively related to these well-being indicators. Autonomous motivation was also positively related to an optimal parenting style (authoritative; autonomy-supportive). This pattern of correlations conformed to our hypotheses.

Study 2

The results reported in Study 1 provide initial support for the reliability and validity of the parenting motivation

scales. Our next study aimed to strengthen the construct validity of the parenting motivation measure by examining the relation of autonomous and controlled parenting motivation to their parenting, as perceived by their adolescents, as well as to youth' well-being. Specifically, we were able to examine the relations of parenting motivation to child reports of self-esteem, positive mood, and their perceptions of the extent to which their parents adopt an autonomy supportive parenting style toward them.

Child Measures

Child Demographic Characteristics

The sample of youth participants who completed the scales had the following demographic characteristics: 43 % were Canadian, 35 % French, and 22 % American. The respondents were predominantly female (57 %) and their mean age was 14.5.

Perceptions of Autonomy-Support

The Perception of Autonomy Support Scale (Robbins 1995), a nine-item scale, was used to measure the degree to which adolescents report that their autonomy is supported by their parents. Participant rate on a scale of 1 (not at all true) to 5 (very much true) the extent to which each statement applies to them. For example, "my parents listen to my opinion or perspective when I've got a problem," and "my parents aren't very sensitive to my needs (reverse item)". To obtain the overall score, a mean of the nine-items is calculated, and a higher score indicates a greater perception that the child's autonomy is supported by the parent. The internal reliability was quite high, $\alpha = .85$.

Child Well-Being

Well-being was measured through positive and negative affect as well as self-concept. On the Positive and Negative Affect Scale (Emmons 1992), respondents indicated the extent to which they felt a series of emotions over the past 4 days: four positive feelings (joyful, enjoyment/fun, pleased, happy) and six negative feelings (unhappy, worried/anxious, depressed, angry/hostile, frustrated, stressed) from 1 (slightly or not at all) to 5 (extremely). Positive affect and negative affect were highly negatively related, $r = -.36$. An index of affect used in the analyses was calculated by reversing negative affect and combining it with positive affect.

Using Anderman's (2002) self-esteem scale, respondents rated the extent to which they agreed or disagreed with six statements about themselves (e.g., "I have a lot to be proud of"). Statements were rated on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). To obtain a global score, the mean of the six items was calculated. An acceptable internal reliabilities of $\alpha = .75$ was obtained.

A global index of child well-being was calculated as the mean of the standardized score for positive and negative affect valence and self-esteem. The creation of a global index was used because of the high positive correlation between affect and self-esteem ($r = .47$), and because our predictions were framed in terms of general well-being. The reliability for the global index (using all mood and self-esteem items) was $\alpha = .83$.

Results

To examine the relation of parenting motivation to child reports, two hierarchical linear regression analyses was conducted with perceived autonomy support and child adjustment as the dependent variables. The first set of predictors included parent's gender, child's gender, parent's age, education level, and country. The latter two variables were entered as two dummy codes. Autonomous and controlled parenting motivations were entered next. Finally, all of the two-way interactions between the demographic variables and the two parenting motivations were entered as a third set of variables.

The regression of children's perceived autonomy support yielded a significant multiple R of .39, $F(16,249) = 2.71$, $p < .001$. The only demographic variable found to relate to autonomy support was children's age ($ß = .14$, $p < .05$). Older children reported higher levels of parental autonomy support. Both parenting motivation variables were significantly associated with perceived autonomy support. Autonomous motivation was significantly positively related to autonomy support, $\beta = .23, t(257) = 3.60, p < .001$ whereas controlled motivation was significantly negatively related to perceived autonomy support, $\beta = -.14$, $t(257) = 2.24$, $p < .05$. Two interaction terms were also significant. An interaction between parent's gender and autonomous motivation ($\beta = .17$, $t(249) = 2.72$, $p < .01$) reflected the fact that fathers' autonomous motivation was especially strongly related to children's perceived autonomy support. In addition, an interaction between one of the dummy codes for country and controlled motivation ($\beta = .17$, $t(249) = 2.17$, $p < .01$) reflected the fact that controlled motivation was negatively related to perceived autonomy support among Canadian and French families ($\beta = -.21$ and $-.26$, respectively) but it was positively related to perceived autonomy support among American families ($\beta = .21$). No other interactions approached significance.

The regression of children's well being yielded a non-significant multiple R of .28, $F(16,249) = 1.32$, n.s. The

only significant predictor to emerge in this regression was parent's level of autonomous motivation: $\beta = .14$, $t(257) = 2.09$, $p < .05$. Children whose parents were higher in autonomous motivation reported greater well being. None of the interactions approached significance (p's $> .20$).

Discussion

The results of study 2 provided further support for the usefulness of the measure of autonomous parenting motivation. Study 2 overcame the problem of shared method variance by assessing child variables from a separate source than parenting motivation. Importantly, we were able to confirm significant relations between parenting motivation and perceived autonomy support from children. The results also indicated that autonomous motivation was associated with better child well-being. Despite this methodological improvement, it is still impossible to certify the direction of causality in the relation of parents' autonomous parenting motivation to their parenting and adolescents' well-being.

Study 3

Study 3 used a 1-year prospective design to examine the association between parenting motivation in first-time mothers and maternal and child adaptation over time, controlling for initial levels of adaptation and child temperament.

Method

Participants

First-time mothers who had participated in the first data collection were followed approximately 1 year later, when their child was a toddler. Of the 153 mothers who were sent questionnaires, 116 returned them, for a response rate of 76 %. Eleven of the envelopes were returned by the postal service because of a change of address. Of these 116 participants, 48 % were French-speakers, 37 % were native English-speakers, and 15 % reported another native language. Mean age of mothers at Time 2 was 31.5 years, and mean age of their toddler was 23 months.

Sixty percent of the toddlers were boys, and 40 % were girls. Ninety-four percent of the mothers reported that they were living with their child's father. Mean yearly family income was between $50,000 and $75,000 CAD, and 70 % of participants reported that their family income was in this range or higher. Most of the mothers were university educated (e.g., 48 % completed an undergraduate degree, 20 % completed graduate school).

Procedure

Mothers who had participated in Study 1 were sent a questionnaire by mail when their child had reached (at least) 18 months. Participants were asked to return the questionnaire in the stamped and addressed envelope provided. Participants were sent a $15.00 CAD gift certificate at a popular bookstore after retuning their completed questionnaire.

Measures

Perceived Parental Competence and Parental Satisfaction

The same scales that were administered in study 1 were used, with six items assessing competence and six items assessing satisfaction. The reliabilities, were adequate, $\alpha > .76$.

Child Behavior Problems

The Child Behavior Checklist for ages 1–5 (Achenbach 2000; Achenbach and Rescorla 2000) measures diverse aspects of a child's behavioral, emotional, and social functioning. The CBCL/1–5 was designed to be completed by parents or parent surrogates.

The respondent is asked to rate 99 problem items as zero for not true of the child, one for somewhat or sometimes true, and two for very true or often true, based on the preceding 2 months. A child's behavior problem score was obtained by averaging the scores on each of the 99 items, with high scores reflecting more problems related to the child's behavioral, emotional, and social functioning.

Results

To examine the relation between parenting motivation and adjustment outcomes over time, a series of hierarchical linear regression analyses were conducted with maternal perceived competence and role satisfaction as the dependent variables. Participants' level of education and income were entered together with child's temperament and participants' Time 1 score on either competence or satisfaction as a first set of predictors. Time 1 parenting motivation (autonomous and controlled) was entered second.

The regression of role satisfaction yielded a significant multiple R of .48, $F(6,109) = 5.46$, $p < .001$. Initial maternal role satisfaction was significantly positively

related to later maternal satisfaction ($\beta = .40$, $t(111) = 4.42$, $p < .001$. Controlled parenting motivation at Time 1 was significantly negatively associated with maternal role satisfaction adjustment at Time 2 ($\beta = -.26$, $t(109) = -2.83$, $p < .01$). Autonomous motivation was unrelated to later role satisfaction ($\beta = .12$, $t(109) = 1.21$, $p = .23$). No other effects approached significance in this regression (p's > 10).

The regression on perceived competence revealed no effects for either autonomous ($\beta = .05$) or controlled parenting motivation ($-.09$).

To examine the relation between parenting motivation and later child behavior problems, a hierarchical linear regression analysis was conducted with child behavior problems at Time 2 as the dependent variable. The first set of predictors was level of education, family income, and child's temperament. Autonomous motivation and controlled motivation were entered second. The regression yielded a significant multiple R of .47, $F(8,110) = 6.10$, $p < .001$. Difficult temperament at Time 1 was significantly positively associated with behavioral problems at Time 2 ($\beta = .30$, $t(112) = 3.26$, $p < .001$). Autonomous parenting motivation at Time 1 was significantly positively related to fewer behavior problems at time 2 ($\beta = -.19$, $t(110) = -2.02$, $p < .05$). By contrast, controlled parenting motivation was significantly positively related to later child behavior problems ($\beta = .32$, $t(110) = 3.53$, $p < .001$). No other effects approached significance in this regression, p's $> .10$).

Discussion

The results of Study 3 demonstrated that controlled motivation for parenting placed first-time mothers at risk for adjustment difficulties during the transition from infancy into toddlerhood. Surprisingly, autonomous motivation was unrelated to later parent role satisfaction. Autonomous and controlled parenting motivations were both significantly related to child adjustment over time, in opposite directions. As expected, autonomous motivation was associated with a positive adjustment for young children whereas controlled motivation was associated with behavioral and emotional problems.

General Discussion

The present investigation was designed to explore the idea that autonomous motivation for parenting is associated with successful adaptation in parents and their children. Autonomous motivation has been measured in many different domains and it has consistently been linked with positive adjustment (Deci and Ryan 2008). Although SDT researchers have explored issues related to autonomy in parenting, this work has almost exclusively focused on whether parents behave toward their children in autonomy-supportive ways. No previous research, to the best of our knowledge, has explored whether parents differ in their level of autonomous motivation to participate in various parenting activities, and whether such motivational differences will be associated with different qualitative outcomes for parents and children. In the present investigations, we developed a motivation for parenting scale that was modeled after previous scales in other domains (cf., Ryan and Connel 1989).

The present studies examined the relations of levels of autonomous and controlled motivation for parenting to different parent and child factors. Study 1 looked at the link between motivation for parenting and a variety of parental and demographic variables. Study 2 examined the relations between mothers' and fathers' motivation for parenting and their high school children's self-reports of self-esteem, positive mood and the perceived autonomy-support from their parents. Study 3 used a 1-year prospective design to examine whether motivation for parenting would be associated with better maternal and child outcomes over time, measured by mothers' competence and satisfaction, and low child behavioural problems. Our general prediction was that autonomous motivation for parenting would be significantly positively associated with better adjustment for both the parents and the children, whereas controlled motivation would be either negatively related or unrelated.

The present investigation included three separate attempts to examine the links between parenting motivation and parenting style. In a sample of first-time mothers, it was shown that autonomous motivation was significantly positively associated with authoritative parenting but unrelated to permissive parenting. In a sample of mothers of middle school children, autonomous motivation was significantly associated with mother's reports of behaving toward their children in an autonomy supportive manner. The measure used in this study was taken directly from the SDT literature. Most impressively, in a study of 260 parents and high school students from three countries, it was shown that autonomous parenting motivation was significantly positively associated with children's perceptions that their parents behaved in autonomy supportive ways, whereas there was a significant negative association for controlled motivation with such perception. Together, these findings seem to point to a reliable association between motivation and parenting style among parents.

Overall the results support our hypothesis that parents who are more autonomously motivated in their parenting roles are also those who report positive outcomes. Study 1 showed that autonomous motivation was associated with higher self-ratings of parental competence and satisfaction,

as well as reports of more positive mood and higher life satisfaction. Controlled motivation was negatively related to concurrent reports of satisfaction and competence. However, study 3 showed that among first-time mothers it was controlled motivation, not autonomous motivation, which was significantly predictive of decreases in mothers' feelings of role satisfaction as their children progressed from infants to toddlers. Controlled motivation was also predictive of these children displaying significantly higher levels of behavioural problems over time whereas autonomous motivation was associated with fewer problems over time. Together, these results provide initial support for the hypothesis that motivation for parenting will be associated with higher levels of adjustment in both parents and children.

The results contribute to SDT in that we found similar associations between a parent's autonomous motivation and outcomes and between parent and child as have previously been found in the autonomous motivation of teachers and other outcomes and between teacher and student. Just as students feel more autonomous when their teacher is autonomously motivated, parents' autonomous motivation was associated with their children's perceptions of them as autonomy-supportive towards them.

The results showed no relationship between parenting motivation and levels of family income or education. Parenting motivation also did not seem to differ between mothers and fathers, but our investigation included only a small sample of fathers. Parent's age was unrelated to motivation. There was a significant relationship between autonomous motivation for parenting and the age of the child; mothers of younger children reported more autonomous motivation for parenting than parents of older children. The difficulty many parents experience when their children move from childhood to adolescence may explain part of the difference that we see in their autonomous motivation. One can imagine parents becoming less intrinsically motivated and identified with their role as their teenagers strive for separation and orient toward their peers. There was also an unexpected association between child gender and parenting motivation. Parents reported significantly greater autonomous motivation for investing themselves in parenting a girl than for a boy. Because we did not include many fathers in our studies we cannot sort out whether this result reflects a motivational advantage for parenting a same-gendered child. We would speculate that this result may relate to the fact that boys typically show higher levels of externalizing problems than girls, and thus they may, on average, pose a challenge to maintaining intrinsic and identified reasons for investing in one's parent role.

Although this study is an interesting first step towards examining motivation for parenting, it has many limitations. First, the majority of participants were mothers and although mothers are still the main caretakers in society, fathers are becoming more and more involved in their children's upbringing. It is important to include equal numbers of fathers in subsequent studies on motivation for parenting. Indeed, examining the match between mothers and father's motivational orientation would be very interesting, as would the examination of non-traditional forms of parenting unions.

Second, although the present investigation tried to get beyond the problems of shared method variance by including child reports in study 2, it is important for future research on parenting motivation to gather more diverse and compelling evidence of predictive validity. For example, peer reports could be used to confirm the adjustment advantages that seem to be associated with autonomous parenting motivation, and systematic behavioral observations could be used to determine whether parenting motivation is directly associated with observed behavior toward children.

A final problem with our research is that we did not fully demonstrate linkages between parenting motivation, parental autonomy support, and children behaving in autonomous ways. Children whose autonomy is supported by their parents internalize guidelines more fully, are better adjusted, and perceive themselves as more competent (Deci and Ryan 1985; Grolnick and Ryan 1989). Roth et al. (2007) showed that teachers' autonomous motivation was directly tied to their use of autonomy support and, in turn, their students' reports of autonomous motivation at school. Our research should have also assessed these three different standpoints on autonomy.

Although our research included participants from Canada, the United States, and France, it was not designed to systematically examine the relation of cultural factors to parenting motivation. Such an investigation would have required consistent sampling from more diverse cultures (e.g., include South Asian and South American families) across all of our studies while also including measures of culture-related values and standards. It would be interesting to determine whether cultural variations in collectivistic versus individualistic values, or in hierarchical versus egalitarian values would be associated with parenting motivation.

In support of research in other domains, our studies showed that the distinction between autonomous and controlled parenting motivations is important. Our results suggest that autonomous and controlled motivation are significantly associated with a distinct set of parent and child outcomes. But what factors influence whether parents develop primarily autonomous or controlled reasons for their parenting? We would hypothesize that parents' childhood experiences with their own parents may influence the kind of motivations they adopt toward parenting. Also, we expect

that the availability of interpersonal supports for parenting (e.g., living near to one's extended family, a flexible work environment, and a network of helpful friends) would conduce toward parents being able to focus on the ways in which parenting can be interesting and meaningful rather than on the pressures of the role.

References

Achenbach, T. M. (2000). Child behavior checklist. In A. E. Kazdin (Ed.), *Encyclopedia of psychology* (Vol. 2, pp. 69–70). Washington, DC: Oxford University Press.

Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA preschool forms & profiles*. Burlington, VT: University of Vermont.

Anderman, E. M. (2002). School effects on psychological outcomes during adolescence. *Journal of Educational Psychology, 94*(4), 795–809.

Bates, J. E., Freeland, C. A., & Lounsbury, M. L. (1979). Measurement of infant difficultness. *Child Development, 50*, 794–803.

Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology, 4*, 1–103.

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality, 19*, 109–134.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macro theory of human motivation, development, and health. *Canadian Psychology, 49*, 182–185.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The life with satisfaction scale. *Journal of Personality Assessment, 49*, 71–76.

Emmons, R. A. (1992). Abstract versus concrete goals: Personal striving level, physical illness, and psychological well-being. *Journal of Personality and Social Psychology, 62*(2), 292–300.

Froiland, J. M. (2011). Parental autonomy support and student learning goals: A preliminary examination of an intrinsic motivation intervention. *Child & Youth Care Forum, 40*, 135–149.

Froiland, J. M. (2013). Parents' weekly descriptions of autonomy supportive communication: Promoting children's motivation to learn and positive emotions. *Journal of Child and Family Studies*. doi:10.1007/s10826-013-9819-x.

Gingras, I. (2007). S'impliquer dans l'éducation des enfants, mais pas trop non plus: la balance clé pour le bien-être des enfants. Final research report presented to the Fonds québécois de la recherche sur la société et la culture (FQRSC).

Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology, 81*, 143–154.

Grolnick, W. S., Ryan, R. M., & Deci, E. L. (1991). Inner resources for school achievement: Motivational mediators of children's perceptions of their parents. *Journal of Educational Psychology, 83*, 508–517.

Joussemet, M., Koestner, R., Lekes, N., & Houlfort, N. (2004). Introducing uninteresting tasks to children: A comparison of the effects of rewards and autonomy support. *Journal of Personality, 72*, 141–169.

Joussemet, M., Koestner, R., Lekes, N., & Landry, R. (2005). A longitudinal study of the relations maternal support to children's adjustment and achievement in school. *Journal of Personality, 73*, 1215–1235.

Joussemet, M., Landry, R., & Koestner, R. (2008). A self-determination theory perspective on parenting. *Canadian Psychology, 49*, 194–200.

Landry, R., Whipple, N., Mageau, G., Joussemet, M., Koestner, R., DiDio, L., et al. (2008). Trust in organismic development, autonomy support, and adaptation among mothers and their children. *Motivation and Emotion, 32*, 173–188.

MacPhee, D., Benson, J. B., & Bullock, D. (1986). Influences on maternal self-perceptions. In Paper presented at the Fifth Biennial International Conference on Infant Studies.

Milyavskaya, M., Gingras, I., Mageau, G., Koestner, R., Gagnon, H., Fang, J., et al. (2009). Balance across contexts: The importance of balanced need satisfaction across life domains in adolescence. *Personality and Social Psychology Bulletin, 35*, 1031–1045.

Pelletier, L. G., Séguin-Lévesque, C., & Legault, L. (2002). Pressure from above and pressure from below as determinants of teachers' motivation and teaching behaviors. *Journal of Educational Psychology, 94*, 186–196.

Pomerantz, E. M., Grolnick, W. S., & Price, C. E. (2005). The role of parents in how children approach achievement: A dynamic process perspective. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 229–278). New York: Guilford Press Publications.

Robbins, R. J. (1995). An assessment of perceived parental autonomy-support and control: Child and parent correlates (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Accession Order No. AAM9523161).

Robinson, C. C., Mandleco, B., Olsen, S. F., & Hart, C. H. (2001). The parenting styles and dimensions questionnaire. In J. Touliatos & B. Perlmutter (Eds.), *Handbook of family measurement techniques* (2nd ed., pp. 319–321). Thousand Oaks: Sage.

Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology, 99*(4), 761–774.

Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality, 63*, 397–427.

Ryan, R. M., & Connel, J. P. (1989). Perceive d locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology, 57*(5), 749–761.

Ryan, R. M., & Deci, E. L. (2000). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological Inquiry, 11*, 319–338.

Soenens, B., Vansteenkiste, M., Lens, W., Luyckx, K., Goossens, L., Beyers, W., et al. (2007). Conceptualizing parental autonomy support: Adolescent perceptions of promotion of independence versus promotion of volitional functioning. *Developmental Psychology, 43*, 633–646.

Stayton, D. J., Hogan, R., & Ainsworth, M. D. (1971). Infant obedience and maternal behavior: The origins of socialization reconsidered. *Child Development*, *42*, 1057–1069.

Su, Y. L., & Reeve, J. (2011). A meta-analysis of the effectiveness of intervention programs designed to support autonomy. *Educational Psychology Review, 23*, 159–188.

Copyright of Journal of Child & Family Studies is the property of Springer Science & Business Media B.V. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

EDUCATIONAL REVIEW, 2017
https://doi.org/10.1080/00131911.2017.1311304

Routledge
Taylor & Francis Group

How and why fathers are involved in their children's education: gendered model of parent involvement

Sung won Kim

Department of Education, Yonsei University, Seoul, South Korea

ABSTRACT

Accumulating evidence points to the unique contributions fathers make to their children's academic outcomes. However, the large body of multi-disciplinary literature on fatherhood does not address how fathers engage in specific practices relevant to education, while the educational research in the United States focused on parent involvement often excludes fathers. There is no theoretical framework up to date explaining the gendered nature of parental educational involvement. *How* and *why* might fathers' involvement differentially influence children's achievement from mothers'? In this article, based on a review of existing research locating school involvement as a major area of difference between fathers and mothers, I propose a revised model describing the sources of father involvement drawing on Hoover-Dempsey and Lamb's models of parent involvement and fathering explaining why fathers and mothers might differ over school involvement.

ARTICLE HISTORY
Received 10 December 2016
Accepted 17 March 2017

KEYWORDS
Parent involvement; father's role; fathers; mothers; achievement

Introduction

Uninvolved fatherhood has been identified as the root of many contemporary social problems, and efforts have been made in the 1990s to foster research on fathers, such as the Clinton memorandum in 1995, which requested fathers to be included in parenting programs, policies, and research agendas. A large body of literature focused on father involvement has been growing rapidly in the last few decades against a backdrop of rapidly changing family life and family structure, increasing women participating in the workforce, and discourses around gender equality and division of labor (Cabrera et al. 2000; Day and Lamb 2004; Downer et al. 2010; Lamb 2010; Marsiglio et al. 2000; Tamis-LeMonda and Cabrera 2002). Since the late 1980s and 1990s, there has largely been a shift from the impact of fathers' financial provision to fathers' actual involvement on children's socio-emotional and cognitive outcomes worldwide (Roopnarine 2015), and from an emphasis on quantity to quality of father involvement.

Widely cited frameworks attempting to distinguish between what fathers do *with* and *for* their children (Lamb et al. 1985, 1987; Pleck 2012) propose a construct of father involvement that highlights certain aspects of parenting unique to fathers. Such frameworks have

CONTACT Sung won Kim sungwkim@yonsei.ac.kr

© 2017 Educational Review

advanced our understanding of fathering. Unfortunately, they are insufficient for explaining the ways in which fathers contribute to their children's academic outcomes because these father involvement measures attempt to capture *everything* fathers do without much specialization as to the specific types of involvement relevant to children's education. They thus fail to answer the more important question of which types of father involvement are most predictive of student achievement outcomes. This review seeks to fill this gap in the literature by examining mother–father differences in educational involvement, and presents a model explaining those differences.

Research conducted in the field of education has provided better frameworks, tools, and measures to understand the sources and consequences of different types of involvement specific to children's academic outcomes. Hoover-Dempsey and Sandler (1997) explain why parents become involved in their children's education, while other scholars have explored the mechanisms by which parent involvement operates on children's achievement (Pomerantz, Moorman, and Litwack 2007). In the educational literature, parent involvement is specifically defined as parent's commitment of resources to the academic arena of children's lives (Grolnick and Slowiaczek 1994) and mostly focuses on parents' interactions with schools and with their children to promote academic success. Parent involvement is much more specific than more general parenting styles that do not purposefully target education but can be associated with a host of child socio-emotional outcomes including cognitive ones. Parenting styles tap into dimensions such as control, warmth, and autonomy and can constitute a context in which parent involvement occurs: "parenting style as constellation of attitudes toward the child that are communicated to the child and that, taken together, create an emotional climate in which the parent's behaviors are expressed" (Darling and Steinberg 1993, 488). However, they are not specific behaviors and practices purposefully targeting achievement, which is how we define father/mother involvement.

Previous research has distinguished between involvement in home and school settings for parents (Comer 1995; Epstein and Sanders 2002; Pomerantz, Moorman, and Litwack 2007). Hill and Tyson (2009) further defined three types of involvement: *academic socialization*, reflecting parents' communication to their children about parental expectations for education and its value and utility (e.g. talking about future plans, educational expectations), *home-based involvement* (e.g. educational activities conducted at home, such as help with homework), and *school-based involvement* (e.g. parental participation in school-based activities, such as attending parent–teacher meetings). In their meta-analytic study, Hill and Tyson (2009) found that academic socialization was the most predictive of academic performance for adolescents while the findings were weaker for school-based involvement and mixed for home-based involvement.

Homework assistance, a subtype of home-based involvement, has generated a large body of literature because it is often negatively associated with school performance, and because the processes involved for this type of involvement are not yet fully understood (Cooper, Lindsay, and Nye 2000; Patall, Cooper, and Robinson 2008). The negative relationship between homework help and children's achievement was explained by the pressure and negative affect parents communicated to their children during homework sessions as well as the fact that those children whose parents were involved with homework tasks were already struggling at school (e.g. Hill and Tyson 2009; Leung, Yeung, and Wong 2010; Pomerantz, Grolnick, and Price 2005). However, another type of home-based involvement, *intellectual enrichment* referring to home activities that are not directly related to school but

can help develop children's cognitive and metacognitive processes (e.g. taking children to the museum) was consistently found to be positive for children's cognitive and academic outcomes (Pomerantz, Moorman, and Litwack 2007).

There currently is a lack of understanding about how fathers' involvement across these different types (school, home, academic socialization) influences child achievement, and how this compares to mothers' involvement. Mother–father comparisons are useful to understand the extent of the impact of fathers' involvement and which types of involvement are more strongly associated with outcomes when employed by fathers (versus mothers), and whether there is any gender difference across the different types of involvement. Unfortunately, studies of parent involvement exclude fathers and often use an aggregate measure of "parent involvement" representing fathers and mothers together, but reported by mothers only in practice (Barnard 2004; Greif and Greif 2004; Hill and Tyson 2009). The lack of attention given to fathers in the educational literature stems from the belief that mothers are responsible for their children's care and education, while fathers are responsible for being the breadwinner in the family (Griffith and Smith 2005; Lareau 1989; Parke 2002; Reay 2000). Hoover-Dempsey and Sandler (1997) raise this exact point and clarify in their model that "parents" refer to both fathers and mothers although they often simply refer to mothers. They further suggest that the model might function similarly for fathers and mothers. Another recent review focused on more general parenting behaviors suggests that the dimensions of parenting for fathers and mothers might not be all that different and that fathers' parenting behaviors might affect children's outcomes in ways that are similar to mothers' (Fagan et al. 2014). The mechanisms by which various types of involvement influence outcomes are indeed likely to operate similarly across mothers and fathers, but gender can shape whether parents decide to engage or refrain from certain practices and how they carry out the practice, resulting in differential achievement outcomes.

In this review, I address the gap in the literature regarding how fathers' involvement might influence child achievement differentially across different types of involvement compared with mothers'. Up to date, the only study that separates the effects of mothers' and fathers' involvement and looks at the different types of educational involvement found that the differences were not as large as expected, and that fathers' involvement was just as predictive of child achievement outcomes as mothers' involvement (Kim and Hill 2015). Furthermore, the main difference found between fathers and mothers was in their school involvement, where the relation between father school involvement and achievement was significantly weaker than the relation for mothers. The current study provides an updated synthetic review of the question including additional studies that were excluded from Kim and Hill's (2015) meta-analysis because they only reported regression coefficients without providing correlations. I further conducted follow-up analyses to explain the mother–father differences observed, and propose a framework for explaining these mother–father differences found across different types of involvement.

Mother–father differences across different types of involvement: results of a systematic review

I reviewed all published and unpublished articles since 1980 that looked at the relation between parent involvement (mothers or fathers) and achievement. I searched for keywords related to family–school relations, parent involvement, mothers, fathers, and achievement

through online databases ERIC, PsychINFO, Family and Society Studies Worldwide, Sociological Abstracts, and Dissertation Abstracts International. Additionally, I conducted an ancestry search of all articles reviewed on the topic and hand-searched journals such as *Fathering: A Journal of Theory, Research, and Practice About Men and Fathers*, *Journal of Family Issues*, *Journal of Men's Studies*, *Marriage and Family Review*, *Journal of Family Psychology*, *Journal of Marriage and Family*, *Developmental Psychology*, *Child Development*, *Journal of Educational Psychology*, and *American Educational Research Journal*. All studies that reported an aggregate effect size combining father and mother involvement measures were discarded because the purpose of this review is to understand the trends and patterns of studies that capture fathers' educational involvement and compare it to mothers'.

I limited the search to school-age children Grades K (kindergarten) to 12 and excluded populations of children with severe cognitive and/or physical disabilities, gifted children, and terminally ill children. Younger children were not included in this study because our construct of educational involvement is more suitable for older children – for instance, very young children not yet of school-going age are likely not to have any homework their parents can help them with, and their parents are also less likely to communicate their educational expectations until they are old enough to go to school. Most studies looking at younger children such as McWayne et al. (2013) (ages three to eight years) tend to use more general measures of parenting and activities rather than school-focused forms of parent involvement. For example, McWayne et al.'s (2013) study looks at positive engagement activities and positive/negative parenting.

Of the total 66 articles retrieved, 13 studies included fathers only while 18 studies included mothers and 35 included an effect size for both fathers and mothers separately. Sample sizes ranged from 60 to 19,386, with 20% of studies working with samples smaller than 100. Fourteen studies were based on large national datasets including those from Panel Study of Income Dynamics (PSID); Add Health 95–96; Educational Longitudinal Study (ELS) 2000; National Educational Longitudinal Study (NELS) 88, National Household Education Survey (NHES) 96, 2003; National Survey of Families and Households NSFH 87–88, 92–95; National Institute for Child Health and Human Development (NICHD) Study on Early Child Care and Youth Development (SECCYD); New Hope Program Child and Family Study; BCS70 (1970 British Cohort Study); and Taiwan Education Panel Survey (TEPS). The number of studies linking father/mother involvement and achievement has been growing rapidly in the last few decades, increasing from four published between 1980 and 1989 to 33 published between 2000 and 2009 (see Tables 1 and 2).

It is interesting to note that of the studies published in peer-reviewed journals ($n = 44$), 33% were published in developmental psychology journals (e.g. *Child Development*, *Journal of Cross-cultural Psychology*), 21% were published in family/gender journals (e.g. *Journal of Marriage and Family, Sex Roles*), 19% were in adolescence and youth journals (e.g. *Journal of Early Adolescence*), and another 19% in education journals (e.g. *The Journal of Educational Research*). Thus, the majority of studies on parent involvement–achievement were not published in education journals, but 72% of the studies still recruited their sample from schools rather than households, hospitals, or other types of community centers, and focused on children's school lives (Table 1).

Furthermore, 80% of the studies did not provide a separate effect size by gender of the child. The majority of articles did not test how involvement by parent gender interacts with child gender, and downplayed the gendered dimension of parent involvement. Studies that

Table 1. Study characteristics ($N = 66$).

	n (%)
Studies published by year (n = 56)[a]	
1980–1989	4 (7%)
1990–1999	19 (34%)
2000–2009	33 (59%)
Field of journals (n = 44)[b]	
Developmental Psychology	15 (34%)
Family/gender	9 (20%)
Youth	8 (18%)
Education	8 (18%)
Other	4 (10%)
Sampling	
Schools	48 (72%)
Households	7 (11%)
Hospitals	2 (3%)
Other types of community centers	9 (14%)
Grade level	
Elementary	30 (45%)
Middle school	14 (21%)
High school	7 (11%)
Mixed	15 (23%)
Country studied	
United States	50 (76%)
Canada	2 (3%)
Israel	3 (5%)
United Kingdom	1 (1%)
South Africa	1 (1%)
Singapore	1 (1%)
China	3 (5%)
Hong Kong	2 (3%)
Taiwan	3 (5%)
Ethnic minority studies (total n = 50 US studies)	
African Americans	9 (18%)
Latino	5 (10%)
Asian Americans	3 (6%)
No indication/mixed	33 (66%)

[a]Studies published after 2010 are not included because they do not cover the whole decade 2010–2020 so the numbers are not comparable to the previous decades.
[b]These studies only include those that were published in peer-reviewed journals.

Table 2. Study characteristics.

	Total	Fathers only	Mothers only	Both
N	66	13	18	35
Type of involvement reported[a]				
Home-based	28	6	7	15
School-based	23	6	6	10
Academic socialization	24	4	9	12

[a]These numbers do not add up because some studies report more than one type of involvement while other studies report only an aggregate measure of multiple types of involvement (coded as general involvement).

reported separate effect sizes for both fathers and mothers used the same measures of parent involvement and did not explicitly discuss whether the measures for fathers and mothers should conceptually be similar. However, they highlighted their inclusion of father involvement measures as a strength compared to other studies that omitted fathers altogether. For instance, McBride, Schoppe-Sullivan, and Ho (2005) explain: "One major strength of the PSID-CDS [Child Development Supplement] data-set is that information on

involvement in children's education was gathered directly from fathers. In collecting data directly from fathers, the PSID-CDS overcomes the problems associated with the more commonly used strategy of asking mothers to report on father involvement in both home and school settings" (214). Thus, I argue based on these observations that most of the studies looking at fathers' educational involvement and student achievement are still generally focused on finding how parents largely influence education with less of a focus on mother–father differences in educational involvement.

The demographics of the samples of the studies included in this review are shown in Table 1. In terms of demographics, the majority of studies were focused on elementary grade students (45%), followed by middle school (21%) and high school (11%) students. The remaining studies aggregated grades so that it was hard to classify them into one single category. Most studies were from the United States (76%), and a sizable group of studies focused on ethnic minorities in the United States (31%). However, nine studies out of the 66 total studies explicitly stated that they dealt with a majority (over 90%) White population. Most of the studies were about two-parent families (83%) rather than other family types such as single parents ($n = 7$). We conclude that most studies published in English focus on the United States and on majority rather than disadvantaged groups such as ethnic minorities or single families.

Overall relation between parent involvement and achievement for fathers and mothers

For 52 of the studies that provided a correlation, there was an overall positive and equally strong relation between father involvement and mother involvement and achievement; the weighted average correlation between father involvement and child achievement was 0.14 (95% confidence interval [CI] [0.10, 0.18]) while it was 0.15 (95% CI [0.11, 0.18]) for mothers. These numbers are reported in a previous meta-analytic study by Kim and Hill (2015). A close examination of 14 additional studies that were excluded from the meta-analysis because they did not provide a correlation (11 studies reported regression coefficients or partial correlations controlling for other variables and three studies performed structural equation modeling) provides support for these meta-analytic results. These 14 studies represent 58 beta coefficients controlling for other variables, 33 for fathers and 25 for mothers. Table 3 shows additional information about the coefficients included in these 14 studies. Although it is difficult to compare these coefficients directly because they were not all standardized

Table 3. Coefficients of studies that do not report a correlation ($N = 14$).

	Fathers	Mothers
School involvement		
Coefficients range	−.42 ~ .27	−.01 ~ .26
Positive coefficients	4	5
Negative coefficients	6	1
Null	0	1
Home involvement		
Coefficients range	−.36 ~ .63	−.16 ~ .31
Positive coefficients	3	2
Negative coefficients	4	2
Academic socialization		
Coefficients range	−.43 ~ .52	−.43 ~ .56
Positive coefficients	9	11
Negative coefficients	4	2

and controlled for different predictors, the counts indicate that these studies present inconsistent findings, with both negative and positive coefficients although the majority of samples across both fathers and mothers report more positive than negative coefficients. The results are more inconsistent for the relationship between fathers' involvement and achievement than for mothers' involvement and child achievement and we note more negative coefficients for fathers. In order to better understand these mixed results, I next examined these associations across the different types of involvement.

Parent involvement and achievement by type

Around half of the studies (28 of the 66 studies) reported on more than one single type of involvement. As shown in Table 2, an approximately similar number of studies report each type of involvement. Furthermore, we found an approximately equal number of studies reporting on the different types of involvement for studies including fathers only ($n = 13$) or mothers only ($n = 18$). Therefore overall, studies are not overly focused on one type of involvement.

Beta coefficients for each type of involvement are examined descriptively (see Table 3). For school involvement, betas ranged from −0.42 to 0.27 for fathers while it ranged from −0.01 to 0.26 for mothers. For fathers, there were more negative than positive coefficients. For mothers, it was the contrary, with more positive coefficients than negative or null coefficients. This suggests that for fathers, the association between involvement at school and achievement was more often negative compared with mothers. This corroborates the findings from the quantitative synthesis ($n = 52$), where the relationship between parent involvement and achievement was found to be weaker for fathers (versus mothers) for school involvement (Kim and Hill 2015).

For home involvement, betas ranged from −0.36 to 0.63 (three of seven were positive) for fathers and −0.16 to 0.31 for mothers (two of four were positive). Although the range was wider for fathers, there were both positive and negative relations for both fathers and mothers. Lastly, for academic socialization, betas ranged from −0.43 to 0.52 (with nine of 13 positive) for fathers and −0.43 to 0.56 for mothers (11 out of 13 positive), suggesting a large majority of the coefficients to be positive. The beta weights on home involvement and academic socialization thus also corroborate the correlational findings ($n = 52$), where academic socialization was found to provide the strongest weighted correlation across the studies for both fathers and mothers while home involvement was relatively weak (Kim 2015). The descriptive multivariate studies also support the lack of stark difference between mothers and fathers in terms of their home involvement and academic socialization, where no quantitative difference was found. We thus conclude, similarly to Kim and Hill (2015) that school involvement might be a major difference between mothers and fathers, with fathers' school involvement being less positively associated with achievement compared to mothers.

Explaining school involvement: follow-up analyses

Two related hypotheses explaining the weaker relationship between school involvement and achievement for fathers were posed:

- Hypothesis 1: Mothers are more frequently involved in schools. Mothers might be more likely to serve as a monitor of students' academic progress and visit the school regularly while fathers might be more likely to serve as a disciplinarian, visiting occasionally when called upon *because* their children are struggling or in trouble. As a result, fathers' school involvement might be negatively associated with children's achievement while mothers' involvement is mixed.
- Hypothesis 2: It is rare for both parents to be equally involved in their children's school because they might find it unnecessary and duplicative – generally, a single parent visits the child's school rather than both simultaneously. This is different from home involvement or academic socialization where spouses might influence each other's behavior. According to this logic, mothers might be more involved in schools while fathers are less involved, rendering this type of involvement a less useful measure for capturing the relation between father involvement and child achievement in families where mothers are also present.

These hypotheses were tested by exploring father–mother patterns in involvement across these three different types of involvement, as measured by: (1) the difference in overall levels of involvement between mothers and fathers, and (2) the correlations between mother and father involvement in families where both parents provided effect sizes across the different types of involvement. According to Hypothesis 1, mothers should be scoring higher than fathers on school involvement; according the Hypothesis 2, the correlation between mother and father school involvement in two-parent families should be relatively low compared to other forms of involvement.

To conduct these follow-up analyses, all studies were coded and analyzed using the Comprehensive Meta-analysis (CMA) software (CMA version 2.0). For Hypothesis 1, I calculated a *g*-statistic of mother–father mean differences in involvement. For Hypothesis 2, the weighted *r*-index was used because it is the most commonly used index for correlational studies. I report random-effects models because most studies were naturalistic and there was a large variation in the design and context of the studies, therefore the studies are unlikely to be functionally equivalent. By fitting a random-effects model, I am able to extrapolate from this population and generalize to a range of other possible studies. Effect sizes were weighted by the inverse variance of each effect size multiplied by the inverse of the number of effect sizes within each subgroup (Borenstein et al. 2009; Lipsey and Wilson 2001).

I examined the Q_{within} statistic (Hedges and Olkin 1985) to determine the heterogeneity of the distributions of the effect sizes. Next, I tested whether the mean effect size for fathers was significantly different from that of mothers using the $Q_{between}$ statistic (which gives the same results as conducting a *Z*-test or a *Q*-test based on analysis of variance) as described in Borenstein et al. (2009). Moderator analyses by type of involvement were conducted separately for the sample of studies that reported an effect size for fathers, followed by those that reported on mothers. Then, mothers' and fathers' effect sizes were compared to each other for each category of all moderators once again using the $Q_{between}$ statistic.

Hypothesis 1: Are father less involved at school than mothers?

In the original sample of $N = 66$ studies including correlational and multivariate studies, the mean levels of fathers' and mothers' involvement were coded for whenever they were

provided. Studies that only reported on either father or mother (but not both) were excluded because our main goal was to calculate a father–mother difference score. In total, 31 empirical reports based on 41 independent samples provided effect sizes to calculate a *g*-statistic of mother–father mean differences in involvement. All effect sizes were calculated such that positive values indicated that mothers' involvement was higher than fathers'. Every single one of the studies reported a positive effect size (combined so that one single effect size represented each study) except for one which was negative. This study suggested that fathers' involvement was higher overall than mothers' involvement, and specifically focused on academic socialization.

Overall, the weighted mean *g*-statistic was 0.46 (95% CI [0.30/0.62]) under the random effects assumption.[1] Mothers' involvement is thus higher than fathers' and the hypothesis that mothers' mean level of involvement is the same as fathers' can thus be rejected. The overall significant *Q*-statistic indicates that we reject the null hypothesis that the variance in effect sizes is produced by sampling error alone, suggesting the presence of moderators, $Q_{between}(30) = 4669.05$, $p < 0.001$.

Next, I tested the differences across the moderator of involvement types to examine the hypothesis that fathers' school involvement would be lower than mothers' as shown in Table 4. The mean difference in involvement level was highest for school involvement, $g(11) = 0.61$ (95% CI [0.48, 0.74]), followed by home-based involvement, $g(13) = 0.56$ (95% CI [0.40, 0.71]). The difference in mean levels of involvement between mothers and fathers was weakest for academic socialization, and the effect size was non-significant $g(12) = 0.30$ (95% CI [−0.06, 0.66]). Descriptively, the magnitude in effect sizes across these different types of involvement does partially support our hypothesis that mothers are more involved in school than fathers and the difference is smaller for the other types of involvement. However, these differences were not statistically significant under the random-effects model.

Hypothesis 2: Are fathers less involved at school when mothers are more involved?

I coded for mother–father correlations in involvement whenever they were provided across the total $N = 66$ sample of studies used in this article. In total, 38 correlations based on 19 studies and 23 separate samples were included in this analysis. The correlations ranged between −0.48 to 0.79, and the only study to report a negative correlation was by Rogers et al. (2009) for the relationship between checking homework and achievement. The overall

Table 4. Moderator analyses of effect sizes measuring father–mother differences and correlations by type of involvement.

				95% Confidence interval		
Moderators	*k*	*g*	*r*	Low estimate	High estimate	$Q_{between}$
Type of involvement						2.51 n.s.
School involvement	11	.61***		.48	.74	
Home involvement	13	.56***		.40	.71	
Academic socialization	12	.30 n.s.		−.06	.66	
Type of involvement						1.67 n.s.
School involvement	7		.31***	.19	.42	
Home involvement	12		.41***	.29	.52	
Academic socialization	6		.38***	.26	.49	

Note: random effects coefficients are reported in this table; n.s., not significant.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

weighted mean correlation between mother and father involvement was 0.45 (95% CI [0.34/0.55]) under the random effects assumption. Thus we reject the null hypothesis that there is no relationship between mother involvement and father involvement. The overall significant *Q*-statistic indicates that we reject the null hypothesis that the variance in effect sizes is produced by sampling error alone, suggesting the presence of moderators, $Q(18) = 2345.32$, $p < 0.001$.

I next examined the moderation of the effect sizes by type of involvement. The results are presented in Table 4. The weighted correlation between mother and father involvement was lowest for school involvement at 0.31 (95% CI [0.19/0.42]), followed by academic socialization at 0.38 (95% CI [0.26/0.49]) and strongest for home involvement at 0.41 (95% CI [0.29/0.52]). Descriptively, the magnitude in effect sizes across these different types of involvement do partially support our hypothesis that mothers and fathers are least correlated for school involvement. However, the overall moderator test revealed that the mean effect sizes were not significantly different from each other across the various types of involvement. Furthermore, 0.31 is a moderate positive correlation for the relationship between mothers' and fathers' school involvement, and does not support our second hypothesis that when mothers are involved at school, fathers might be less involved.

Drawing on models of fathering and parent involvement to explain school involvement

The previous findings suggest that the gaps in mother–father involvement are largest for school involvement whereby fathers are not only less involved in schools than mothers (even compared to other forms of involvement), but their involvement is also more weakly associated with achievement. I draw on the conceptual models describing the sources of fathering (Lamb et al. 1985, 1987) and parent involvement (Hoover-Dempsey and Sandler 1997) to explain why school involvement might be most different for fathers and mothers. I first review both models and articulate an adapted explanatory model describing how gender might differentially shape parents' motivation for being involved with their children's education. I next look more carefully at how aspects of fathering unique to fathers might be reflected by type of educational involvement (home, school, academic socialization), emphasizing the gendered nature of each type of involvement. In sum, the conceptual map I construct in this review using both fathering and parent involvement theories will provide us with a useful tool to understand the gendered nature of educational involvement.

Sources of father involvement

The literature focused on fathers and the body of research focused on educational involvement of parents, have developed separately, but display striking similarities. Lamb et al.'s (1985) model attempting to discern the sources of father involvement includes four components: (1) motivation (paternal identity and role construction), (2) skills and self-confidence, (3) social supports (especially from the child's mother), and (4) the absence of institutional barriers (especially in the workplace) (as cited by Pleck 2012). Hoover-Dempsey and Sandler (1997) includes three components in their explanations of *why* parents get involved in their children's education: (1) parents' construction of the parental role, (2) parents' sense of self-efficacy for helping her/his children succeed in school, and (3) general

invitations and demand for involvement from the child and the school.[2] These models are an attempt to exhaustively represent all factors at play for fathers' involvement (Lamb et al. 1985, 1987) and parents' educational involvement (Hoover-Dempsey and Sandler 1997), and were developed independently of each other in their respective fields. However, both models highlight three common aspects: Fathers'/parents' role identity, skills and self-confidence, and external factors influencing individual parenting. These similarities point to the necessity of tying these theories together in order to provide a more unified and synthetic framework within which to interpret and understand fathers' educational involvement.

In this article, I argue that instead of having a model where these factors separately influence fathers' involvement types and forms, external factors (invitations to be involved, notably by the spouse) actually influence fathers' role identity construction, which then links to the types of involvement fathers are likely to engage in. Thus, parents' gender does not simply act as a moderator in Hoover-Dempsey and Sandler's (1997) version of the model. Only skills and self-confidence operate the same way across fathers and mothers. Figure 1 shows these relationships. As shown, paternal role identity is particularly important for determining the different involvement forms and is directly influenced by perceptions of invitations from others.

Pleck (2012) also identifies fathers' attitudes about father involvement and paternal identity as key motivational sources explaining fathering behaviors. We apply this concept to fathers' educational involvement. Several specific domains shape fathers' paternal identity (breadwinning role, caregiver role, relationship with child), and those domains that were most gender-congruent (e.g. breadwinning) were more closely associated with their

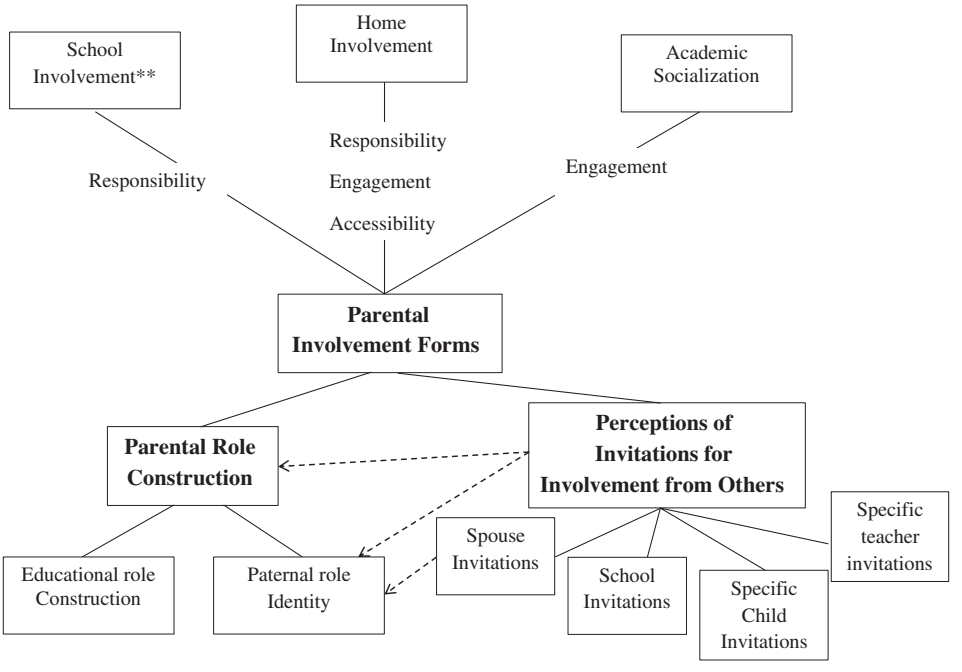


Figure 1. Model explaining the sources of fathers' educational involvement by type of involvement.
Note: For parsimony, factors that are less gender-relevant (parents' skills and self-confidence) are not presented in the model.
**Mother–father differences are significant.

behaviors (Maurer, Pleck, and Rane 2001). As for fathers' participation in childcare and children's education (that are less gender-congruent), they were found to be more closely associated with their perceptions of their partner's attitudes and behaviors: For fathers, the perceived expectations for caregiving behavior from their wives predicted their own caregiving behavior whereas this did not apply to mothers (Maurer and Pleck 2006).

In line with the earlier studies, fathers have constantly been found to be more influenced by mothers in terms of their parenting behaviors than mothers by fathers. The maternal gate-keeping theory posits that mothers regulate and control the quantity of paternal involvement and exercise power in this domain (Allen and Hawkins 1999). In a large number of studies, maternal involvement was found to be a strong predictor of paternal involvement (e.g. Amato 1994; Cabrera et al. 2000; Pleck and Hofferth 2008), and there is considerable evidence that paternal involvement was disrupted to a greater degree than mother involvement by marital conflict (Coiro and Emery 1998; Parke and Tinsley 1987). Thus, fathers were more influenced by contextual factors such as mother involvement or marital quality than mothers, although a smaller number of studies (e.g. Flouri and Buchanan 2004) found that the association between father involvement and child outcomes was not mediated by mother involvement or by mother characteristics (Marsiglio 1991). This is reflected by an arrow from perceptions of spouse invitation to paternal role identity in Figure 1.

In the educational literature, Hoover-Dempsey and Sandler's (1997) model focused on parents' construction of their role specific to children's education: "In short, what do parents believe that parents are supposed to do in relation to their children's education and educational progress?" (9). Thus, parental role construction established a range of activities parents engage in *for* and *with* their children based on their value for education and also influenced by other areas central to the child's development (e.g. socio-emotional functioning). This goes in parallel with the choices that fathers make in terms of what they decide to do *for* and *with* their children depending on how they construe their role, and whether childcare is a large part of their identity. Parents' educational roles were also influenced by the expectations held by parents and their significant groups (e.g. their family, the school and teachers, the workplace) for their behaviors. As outlined by Hoover-Dempsey and Sandler (1997), these expectations could be gendered, such that mothers in the United States are subject to stronger role expectations than fathers for daily involvement whereas fathers are more expected to attend athletic activities or to intervene when children face disciplinary action (Eccles and Harold 1996; Lareau 1989). Such role construal in the educational arena is also likely to be shaped by cultural norms. In China, where fathers were often seen as the authority figures and were responsible for child training and education, they were found to be more active in children's childrearing and education compared to their Western counterparts (Chen, Dong, and Zhou 1997; Jankowiak 1992). Thus, fathers' paternal identity and educational role construction are both influenced by external factors (mothers', children's, and others' beliefs and norms about what fathers should do for their children's education), and explain the extent of their educational involvement (see Figure 1).

Fathering and educational involvement: mapping fathering constructs onto dimensions of parent involvement

In order to better understand how certain types of educational involvement might be more gendered than others, it is useful to take a look at how fathering dimensions unique to

fathers can map onto these involvement types. Currently in the fatherhood literature, there is no agreement on how to conceptualize and measure father involvement based on a single overarching theory of fatherhood (Day and Lamb 2004; Lamb 2010; Tamis-LeMonda 2004). However, certain distinctions have been made between the different things fathers do *with* and *for* their children, and father involvement research has progressed from a narrow focus on financial provision for the family to more indirect forms of involvement (Lamb 2010). Lamb et al. (1985, 1987) define father involvement as: (1) engagement (direct interaction with the child in the form of caretaking, play, teaching or leisure), (2) accessibility or availability to the child (temporal or proximal positioning so that the child can choose to engage if necessary), and (3) responsibility not limited to financial support (arranging resources, organizing and planning for the child). Pleck (2010, 2012) further developed an extended version of this framework based on the measures used in the empirical studies on fathers, and included measures found in the parenting literature, such as warmth and responsiveness, control/monitoring, as well as elaborating responsibility into indirect care (provision of material and social resources) and process responsibility (monitoring that the child's earlier mentioned needs are met). Palkovitz (1997) also extended the notion of responsibility by arguing for the inclusion of a more elaborate measure of the cognitive manifestations of father involvement, later to include affective domains of father involvement (Christiansen and Palkovitz 2001). Slightly different aspects of father involvement have been emphasized across different studies, such as time and activities (Yeung et al. 2001), or expressions of affection expressed to the child (Schoppe-Sullivan, McBride, and Ho 2004).

These definitions are more general and unique to fathering and fail to articulate the process through which specific types of father involvement affect specific child outcomes (Palkovitz 2002). Considering the definitions of fathering and educational involvement provided in these two separate bodies of literature, educational involvement can be mapped onto the more general frameworks provided in the fatherhood literature. First, school-based involvement primarily taps into fathers' responsibility. Although fathers' involvement in schools might not always involve direct interactions with their children, they reflect the importance fathers place on this activity, and their ability to plan around it. Certain types of school-based involvement such as participation in school governance, can further be categorized into indirect care, and potentially expands fathers' social networks that might be useful for their child in the future. Home-based involvement taps into fathers' engagement, accessibility and responsibility. First, fathers are likely to engage more directly with their children around activities such as homework help or library trips, and in these instances, their general parenting styles (warmth and control, affective dimensions) are likely to be important in determining the ways in which they are involved at home. Accessibility is reflected by the fact that fathers need to be accessible to their children so that they can be approached and provide help with schoolwork or engage in activities with their child as needed. Furthermore, responsibility is involved by monitoring their children's school progress at home as well as making sure that their children are exposed to stimulating activities (such as visits to the museum). Lastly, academic socialization is primarily related to fathers' engagement. When socializing their children about academic values, fathers are engaged with their children, even if they are not in the form of activities. Providing time to talk or communicate can be conceived to be a form of engagement, especially in adolescent years where fathers spend less time in play with their children. Thus, we can conclude that the various types of

educational involvement also reflect fathers' overall roles to a large extent, and can be conceptualized as an extension of fathering.

Figure 1 maps these various dimensions of fathering and how they match the different types of parent involvement. Note that those dimensions that tap into responsibility (e.g. school, home) are likely to be most related to paternal/maternal identity because they touch more fundamentally on how parents construe their roles. Engagement and accessibility might be more a matter of availability and time, where the gap is closing between men and women with more women participating in the labor force. As a result, I argue that the biggest gender difference between fathers and mothers stems from their father/mother identity and role construction, which is influenced by external social expectations. These lead to differential involvement by type, the largest gap being in terms of school involvement.

Conclusion

In this article, I outlined how theories and frameworks developed in the educational literature map onto those developed in the fatherhood literature. A review of studies looking at mothers' versus fathers' educational involvement suggests that fathers and mothers differ mostly in their school involvement and its effect on child achievement. I argue that mother–father differences in school involvement might stem from the fact that school involvement is the most gendered form of parent involvement because it taps into paternal/maternal role identity. The other types of involvement (home and academic socialization) might be less affected by gender because they rely less heavily on perceptions of outside invitations for involvement. This article highlights the need for the father involvement research and parental educational involvement research to be in conversation with each other and to develop a more unified approach to identify specific forms of father involvement that are relevant to child academic outcomes. Figure 1 summarizes our reconstructed model synthesizing and adapting the fathering and parent involvement models of Lamb et al. (1987) and Hoover-Dempsey and Sandler (1997).

This article suggests that fathers are a potentially powerful agent of change in children's educational lives because their involvement is malleable and subject to external influence. Because men tend to perceive fathering as a voluntary activity they "do" to help their wives, with varying standards and expectations for fathering, whereas mothers generally experience mothering as something they "are" (Ehrensaft 1987), there is more variability in involvement across fathers than mothers. At school, teachers' expectations about whether fathers should be more active in their children's education are likely to influence paternal role identity, while at home, mothers' and children's expectations about fathers' educational involvement might play a larger role. In order to better understand the influence of fathers on children's academic outcomes, it is necessary to build more theory around fathers' educational involvement and the mechanisms by which different types of strategies fathers engage in operate. In spite of the growing number of empirical studies examining the relationship between father involvement and achievement (Grolnick and Slowiaczek 1994; McBride, Schoppe-Sullivan, and Ho 2005; Nord 1997), there is a lack of theoretical framework explaining fathers' educational involvement, which this article seeks to address. In addition to building theories around fathers' educational involvement, various factors such as family structure, ethnicity, child gender, or socio-economic status can be considered in future studies, which have distinct influences on fathers, education, and parenting.

Notes

1. By converting into weighted *r*-correlations in order to make the values consistent across the other analyses, we have: $r = 0.22$ (95% CI = 0.15/29), $p < 0.001$ under the random-effects assumption.
2. Walker et al. (2005) provides an update of this model, which identifies parents' motivational beliefs (including parental role construction and parental self-efficacy), parents' perceptions of invitations for involvement from others (child, school, teacher invitations), and parents' perceived life contexts (self-perceived time and energy and self-perceived skills and knowledge).

Disclosure statement

No potential conflict of interest was reported by the author.

ORCID

Sung won Kim http://orcid.org/0000-0001-6925-2511

References

*References included in the review

Allen, S. M., A. J. Hawkins. 1999. "Maternal Gatekeeping: Mothers' Beliefs and Behaviors That Inhibit Greater Father Involvement in Family Work." *Journal of Marriage and the Family* 61 (1): 199–212.

Amato, P. R. 1994. "Father–Child Relations, Mother–Child Relations, and Offspring Psychological Well-Being in Early Adulthood." *Journal of Marriage and the Family* 56 (4): 1031–1042.

*Banerjee, M., Z. A. T. Harrell, and D. J. Johnson. 2011. "Racial/Ethnic Socialization and Parental Involvement in Education as Predictors of Cognitive Ability and Achievement in African American Children." *Journal of Youth and Adolescence* 40 (5): 595–605.

Barnard, W. M. 2004. "Parent Involvement in Elementary School and Educational Attainment." *Children and Youth Services Review* 26 (1): 39–62.

*Beaumont, K. M. 2011. "Parent Academic Involvement and Child Academic Achievement: The Influence of Parent-Child Language in Mexican-Origin Families." PhD diss., University of California, Davis, CA.

*Bissonnette, J. T. 2000. "Predicting Academic Achievement: The Role of Self-Concept and the Home Environment." PhD diss., University of Windsor, Windsor, ON.

*Bogenschneider, K. 1997. "Parental Involvement in Adolescent Schooling: A Proximal Process with Transcontextual Validity." *Journal of Marriage and the Family* 59 (3): 718–733.

Borenstein, M., L. V. Hedges, J. P. Higgins, and H. R. Rothstein. 2009. *Introduction to Meta-Analysis*. Chichester: John Wiley & Sons.

*Brody, G. H., and D. L. Flor. 1998. "Maternal Resources, Parenting Practices, and Child Competence in Rural, Single-Parent African American Families." *Child Development* 69 (3): 803–816.

*Brody, G. H., Z. Stoneman, and D. Flor. 1995. "Linking Family Processes and Academic Competence among Rural African American Youths." *Journal of Marriage and the Family* 57 (3): 567–579.

Cabrera, N. J., C. Tamis-LeMonda, R. H. Bradley, S. Hofferth, and M. E. Lamb. 2000. "Fatherhood in the Twenty-First Century." *Child Development* 71 (1): 127–136.

Chen, X., Q. Dong, and H. Zhou. 1997. "Authoritative and Authoritarian Parenting Practices and Social and School Performance in Chinese Children." *International Journal of Behavioral Development* 21 (4): 855–873.

*Cheung, C. S., and C. McBride-Chang. 2008. "Relations of Perceived Maternal Parenting Style, Practices, and Learning Motivation to Academic Competence in Chinese Children." *Merrill-Palmer Quarterly: Journal of Developmental Psychology* 54 (1): 1–22.

Christiansen, S. L., and R. Palkovitz. 2001. "Why the 'Good Provider' Role Still Matters." *Journal of Family Issues* 22 (1): 84–106.

*Clark, R. 1993. "Homework Parenting Practices That Positively Affect Student Achievement." In *Families and Schools in a Pluralistic Society*, edited by N. F. Chavkin, 53–71. Albany, NY: State University of New York Press.
Coiro, M. J., and R. E. Emery. 1998. "Do Marriage Problems Affect Fathering More than Mothering? A Quantitative and Qualitative Review." *Clinical Child and Family Psychology Review* 1 (1): 23–40.
Comer, J. P. 1995. *School Power: Implications of an Intervention Project*. New York: Free Press.
*Cooksey, E. C., and M. M. Fondell. 1996. "Spending Time with His Kids: Effects of Family Structure on Fathers' and Children's Lives." *Journal of Marriage and Family* 58 (3): 693–707.
Cooper, H., J. J. Lindsay, and B. Nye. 2000. "Homework in the Home: How Student, Family, and Parenting-Style Differences Relate to the Homework Process." *Contemporary Educational Psychology* 25 (4): 464–487.
*Corlew, W. 2010. "The Absence of a Father or Father Figure and Its Impact on the Academic Success of High School Males." PhD diss., Tennessee State University, Nashville, TN.
*Cutler, B. S. 1989. "The Relationship of Father Involvement to the Academic Achievement of School-Age Children." PhD diss., Temple University, Philadelphia, PA.
Darling, N., and L. Steinberg. 1993. "Parenting Style as Context: An Integrative Model." *Psychological Bulletin* 113 (3): 487–496.
Day, R. D., and M. E. Lamb. 2004. *Conceptualizing and Measuring Father Involvement*. Mahwah, NJ: Lawrence Erlbaum.
*Delgado-Hachey, M., and S. A. Miller. 1993. "Mothers' Accuracy in Predicting Their Children's IQs: Its Relationship to Antecedent Variables, Mothers' Academic Achievement Demands, and Children's Achievement." *Journal of Experimental Education* 62 (1): 43–59.
*Desimone, L. 1999. "Linking Parent Involvement with Student Achievement: Do Race and Income Matter?" *Journal of Educational Research* 93 (1): 11.
Downer, J., R. Campos, C. McWayne, and T. Gartner. 2010. "Father Involvement and Children's Early Learning: A Critical Review of Published Empirical Work from the past 15 Years." In *Family Factors and the Educational Success of Children*, edited by William Jeynes, 64-105. New York: Routledge.
*Dumka, L. E., N. A. Gonzales, D. D. Bonds, and R. E. Millsap. 2009. "Academic Success of Mexican Origin Adolescent Boys and Girls: The Role of Mothers' and Fathers' Parenting and Cultural Orientation." *Sex Roles* 60 (7–8): 588–599.
Eccles, J., and A. Harold. 1996. "Family Involvement in Children's and Adolescents' Schooling." In *Family-School Links: How Do They Affect Educational Outcomes?*, edited by A. Booth and J. Dunn, 3–34. Hillsdale, NJ: Lawrence Erlbaum.
Ehrensaft, D. 1987. *Parenting Together: Men and Women Sharing the Care of Their Children*. New York: Free Press; Collier Macmillan.
*Englund, M. M., A. E. Luckner A. E., and G. J. L. Whaley, and B. Egeland. 2004. "Children's Achievement in Early Elementary School: Longitudinal Effects of Parental Involvement, Expectations, and Quality of Assistance." *Journal of Educational Psychology* 96 (4): 723–730.
Epstein, J. L., and M. G. Sanders. 2002. "Family, School, and Community Partnerships." In *Handbook of Parenting: Practical Issues in Parenting*, edited by M. H. Bornstein (2nd ed.), 407–438. Mahwah, NJ: Erlbaum.
Fagan, Jay, Randal Day, Michael E. Lamb, and Natasha J. Cabrera. 2014. "Should Researchers Conceptualize Differently the Dimensions of Parenting for Fathers and Mothers?" *Journal of Family Theory & Review* 6 (4): 390–405.
*Flouri, E. 2005. *Fathering and Child Outcomes*. Chichester: John Wiley & Sons.
*Flouri, E. 2006. "Parental Interest in Children's Education, Children's Self-Esteem and Locus of Control, and Later Educational Attainment: Twenty-Six Year Follow-up of the 1970 British Birth Cohort." *British Journal of Educational Psychology* 76 (1): 41–55.
Flouri, E., and A. Buchanan. 2004. "Early Father's and Mother's Involvement and Child's Later Educational Outcomes." *British Journal of Educational Psychology* 74 (2): 141–153.
*Fuligni, A. S. 1995. "Effects of Parental Involvement and Family Context on the Academic Achievement of Third and Fourth-Grade Children." PhD diss., University of Michigan, Ann Arbor, MI.
*Ginsburg, G. S., and P. Bronstein. 1993. "Family Factors Related to Children's Intrinsic/Extrinsic Motivational Orientation and Academic Performance." *Child Development* 64 (5): 1461–1474.

Greif, J. L., and G. L. Greif. 2004. "Including Fathers in School Psychology Literature: A Review of Four School Psychology Journals." *Psychology in the Schools* 41 (5): 575–580.
Griffith, A., and D. Smith. 2005. *Mothering for Schooling*. New York: Routledge Palmer.
*Grolnick, W. S., C. O. Kurowski, K. G. Dunlap, and C. Hevey. 2000. "Parental Resources and the Transition to Junior High." *Journal of Research on Adolescence* 10 (4): 465–488.
*Grolnick, W. S., and M. L. Slowiaczek. 1994. "Parents' Involvement in Children's Schooling: A Multidimensional Conceptualization and Motivational Model." *Child Development* 65 (1): 237–252.
*Hale, L. M. 2003. "Student Perceptions of Parental Involvement and Grade 5 Reading and Math Achievement." PhD diss., Baylor University, Waco, TX.
*Hanson, S. L. 2007. "Success in Science among Young African American Women: The Role of Minority Families." *Journal of Family Issues* 28 (1): 3–33.
*Hawkins, C. E. 2006. "The Relationship of Paternal Involvement to Students' Self-Concept, Behaviors and Academic Achievement." PhD diss., Cleveland State University, Cleveland, OH.
*Hawkins, D. N., P. R. Amato, and V. King. 2007. "Nonresident Father Involvement and Adolescent Well-Being: Father Effects or Child Effects?" *American Sociological Review* 72 (6): 990–1010.
Hedges, L. V., and I. Olkin. 1985. *Statistical Methods for Meta-Analysis*. Orlando, FL: Academic Press.
*Henry, C. S., M. J. Merten, S. W. Plunkett, and T. Sands. 2008. "Neighborhood, Parenting, and Adolescent Factors and Academic Achievement in Latino Adolescents from Immigrant Families." *Family Relations* 57 (5): 579–590.
Hill, N. E., and D. F. Tyson. 2009. "Parental Involvement in Middle School: A Meta-Analytic Assessment of the Strategies That Promote Achievement." *Developmental Psychology* 45 (3): 740–763.
Hoover-Dempsey, Kathleen V., and Howard M. Sandler. 1997. "Why Do Parents Become Involved in Their Children's Education?" *Review of Educational Research* 67 (1): 3–42.
*Houser, R. F. 1995. "The Relationship among Parental Social Networks, Parental Aspirations, Parental Involvement, and Children's Academic Achievement in Low-Income Single-Parent Afro-American Families." PhD diss., Tufts University, Medford, MA.
*Hsu, H., D. Zhang, O. Kwok, Y. Li, and S. Ju. 2011. "Distinguishing the Influences of Father's and Mother's Involvement on Adolescent Academic Achievement: Analyses of Taiwan Education Panel Survey Data." *Journal of Early Adolescence* 31 (5): 694–713.
*Hung, C. 2005. "Family Background, Parental Involvement and Environmental Influences on Taiwanese Children." *Alberta Journal of Educational Research 51*(*3*): 261–276 (additional effect sizes provided by the author).
Jankowiak, W. R. 1992. "Father–Child Relations in Urban China." In *Father–Child Relations: Cultural and Biosocial Contexts*, edited by B. S. Hewlett, 345–363. New York: De Gruyter.
*Ji, G., S. Jiao, and Q. Jing. 1993. "Expectancy of Chinese Parents and Children's Cognitive Abilities." *International Journal of Psychology* 28 (6): 821–830.
*Jodl, K. M., A. Michael, O. Malanchuk, J. S. Eccles and A. Sameroff. 2001. "Parents' Roles in Shaping Early Adolescents' Occupational Aspirations." *Child Development* 72 (4): 1247–1266.
*Killian, C. M. 2003. "Family Correlates of Social and Academic Competence in Euro- and Mexican-American Families." PhD diss., University of California, Riverside, CA.
Kim, S., and N. E. Hill. 2015. "Including Fathers in the Picture: A Meta-Analysis of Parental Involvement and Students' Academic Achievement." *Journal of Educational Psychology* 107 (4): 919–34.
*Kim, K., and R. P. Rohner. 2002. "Parental Warmth, Control, and Involvement in Schooling: Predicting Academic Achievement among Korean American Adolescents." *Journal of Cross-Cultural Psychology* 33 (2): 127–140.
Lamb, M. E. 2010. "How Fathers Influence Children's Development? Let Me Count the Ways." In *The Role of the Father in Child Development*, edited by M. E. Lamb (5th ed.), 1-26. Hoboken, NJ: Wiley.
Lamb, M. E., J. H. Pleck, E. L. Charnov, and J. A. Levine. 1985. "Paternal Behavior in Humans." *American Zoologist* 25: 883–894.
Lamb, M. E., J. H. Pleck, E. L. Charnov, and J. A. Levine. 1987. "A Biosocial Perspective on Paternal Behavior and Involvement." In *Parenting across the Lifespan: Biosocial Dimensions*, edited by J. B. Lancaster, J. Altmann, A. S. Rossi and L. R. Sherrod, 111–142. New York: De Gruyter.
Lareau, A. 1989. *Home Advantage: Social Class and Parental Intervention in*. London: Falmer Press.

*Lee, S. M., J. Kushner, and S. H. Cho. 2007. "Effects of Parent's Gender, Child's Gender, and Parental Involvement on the Academic Achievement of Adolescents in Single Parent Families." *Sex Roles* 56 (3–4): 149–157.

Leung, G., K. Yeung, and D. Wong. 2010. "Academic Stressors and Anxiety in Children: The Role of Paternal Support." *Journal of Child and Family Studies* 19 (1): 90–100.

*Levin, I., R. Levy-Shiff, T. Appelbaum-Peled, I. Katz, M. Komar, and N. Meiran. 1997. "Antecedents and Consequences of Maternal Involvement in Children's Homework: A Longitudinal Analysis." *Journal of Applied Developmental Psychology* 18 (2): 207–227.

*Li, W. 2006. "Parental Influence on Adolescent Academic Achievement in Mainland China." PhD diss., University of Nevada, Reno, NV.

Lipsey, M. W., and D. B. Wilson. 2001. *Practical Meta-Analysis*. Thousand Oaks, CA: Sage Publications.

Marsiglio, W. 1991. "Paternal Engagement Activities with Minor Children." *Journal of Marriage and the Family* 53 (4): 973–986.

Marsiglio, W., P. Amato, R. D. Day, and M. E. Lamb. 2000. "Scholarship on Fatherhood in the 1990s and beyond." *Journal of Marriage and Family* 62 (4): 1173–1191.

Maurer, T. W., and J. H. Pleck. 2006. "Fathers' Caregiving and Breadwinning: A Gender Congruence Analysis." *Psychology of Men and Masculinity* 7 (2): 101–112.

Maurer, T. W., J. H. Pleck, and T. R. Rane. 2001. "Parental Identity and Reflected-Appraisals: Measurement and Gender Dynamics." *Journal of Marriage and Family* 63 (2): 309.

*McBride, B. A., G. L. Brown, K. K. Bost, N. Shin, B. Vaughn, and B. Korth. 2005. "Paternal Identity, Maternal Gatekeeping, and Father Involvement." *Family Relations* 54 (3): 360–372.

McBride, B. A., S. Schoppe-Sullivan, and M. H. Ho. 2005. "The Mediating Role of Fathers' School Involvement on Student Achievement." *Journal of Applied Developmental Psychology: An International Lifespan Journal* 26 (2): 201–216.

McWayne, Christine, Jason T. Downer, Rodrigo Campos, and Robby D. Harris. 2013. "Father Involvement During Early Childhood and its Association with Children's Early Learning: A Meta-analysis." *Early Education & Development* 24 (6): 898–922.

*Melby, J. N., and R. D. Conger. 1996. "Parental Behaviors and Adolescent Academic Performance: A Longitudinal Analysis." *Journal of Research on Adolescence* 6 (1): 113–137.

*Mireles-Rios, R., and L. F. Romo. 2010. "Maternal and Teacher Interaction and Student Engagement in Math and Reading among Mexican American Girls from a Rural Community." *Hispanic Journal of Behavioral Sciences* 32 (3): 456–469.

*Mistry, R. S., E. S. White, A. D. Benner, and V. W. Huynh. 2009. "A Longitudinal Study of the Simultaneous Influence of Mothers' and Teachers' Educational Expectations on Low-Income Youth's Academic Achievement." *Journal of Youth and Adolescence* 38 (6): 826–838.

*Muller, C. 1995. "Maternal Employment, Parent Involvement, and Mathematics Achievement among Adolescents." *Journal of Marriage and the Family* 57 (1): 85–100.

*Nelson, P. R. 2010. "The Effects of Maternal Parenting Style and Maternal Involvement on the Academic Achievement of African American Students Attending Title I Schools." PhD diss., Capella University, Minneapolis, MN.

*Newland, L. A., H. Chen, and D. Coyl-Shepherd. 2013. "Associations among Father Beliefs, Perceptions, Life Context, Involvement, Child Attachment and School Outcomes in the U.S. and Taiwan." *Fathering: A Journal of Theory, Research, and Practice about Men as Fathers 11*(1): 3-30.

*Nord, C. W. 1997. *Fathers' Involvement in Their Children's Schools.* (No. NCES-98-091). Washington, DC: National Center for Education Statistics.

Palkovitz, R. 1997. "Reconstructing 'Involvement': Expanding Conceptualizations of Men's Caring in Contemporary Families." In *Generative Fathering: Beyond Deficit Perspectives*, edited by Alan J. Hawkins and D. C. Dollahite, 200-216. Thousand Oaks, CA: Sage Publications.

Palkovitz, R. 2002. "Involved Fathering and Child Development: Advancing Our Understanding of Good Fathering." In *Handbook of Father Involvement: Multidisciplinary Perspectives,* edited by C. Tamis-LeMonda, and N. J. Cabrera, 119-140. Mahwah, NJ: Lawrence Erlbaum.

*Palmer, D. L. 2004. "The Structure of Maternal and Paternal Involvement in Adolescence and Relations to Academic Achievement." PhD diss., University of Utah, Salt Lake City, UT.

Parke, R. D. 2002. "Fathers and Families." In *Handbook of Parenting*, edited by M. H. Bornstein (2nd ed.), 27-74. Mahwah, NJ: Lawrence Erlbaum.
Parke, R. D., and B. J. Tinsley. 1987. "Family Interaction in Infancy." In *Handbook of Child Development*, edited by J. Osofsky, 579–641. New York: Wiley.
Patall, E. A., H. Cooper, and J. C. Robinson. 2008. "Parent Involvement in Homework: A Research Synthesis." *Review of Educational Research* 78 (4): 1039–1101.
*Paulson, S. E., and C. L. Sputa. 1996. "Patterns of Parenting during Adolescence: Perceptions of Adolescents and Parents." *Adolescence* 31 (122): 369–385.
Pleck, J. H. 2010. "Paternal Involvement: Revised Conceptualization and Theoretical Linkages with Child Outcomes." In *The Role of the Father in Child Development*, edited by M. E. Lamb (5th ed.), 58–93. Hoboken, NJ: Wiley.
Pleck, J. H. 2012. "Integrating Father Involvement in Parenting Research." *Parenting: Science and Practice 12*(2–3): 243–253.
Pleck, J. H., and S. L. Hofferth. 2008. "Mother Involvement as an Influence on Father Involvement with Early Adolescents." *Fathering: A Journal of Theory, Research, and Practice about Men as Fathers 6*(3): 267–286.
*Plunkett, S. W., A. O. Behnke, T. Sands, and B. Y. Choi. 2009. "Adolescents' Reports of Parental Engagement and Academic Achievement in Immigrant Families." *Journal of Youth and Adolescence* 38 (2): 257–268.
Pomerantz, E. M., W. S. Grolnick, and C. E. Price. 2005. "The Role of Parents in How Children Approach School: A Dynamic Perspective." In *Handbook of Competence and Motivation*, edited by A. J. Elliot and C. S. Dweck, 259–278. New York: Guilford Press.
Pomerantz, E. M., E. A. Moorman, and S. D. Litwack. 2007. "The How, Whom, and Why of Parents' Involvement in Children's Academic Lives: More is Not Always Better." *Review of Educational Research* 77 (3): 373–410.
*Powell, P. M. 2007. "Relationship of Nonresident African American Father Involvement in School-Related Activities to Middle School Student Outcomes." PhD diss., Walden University, Minneapolis, MN.
Reay, D. 2000. "A Useful Extension of Bourdieu's Conceptual Framework: Emotional Capital as a Way of Understanding Mothers' Involvement in Their Children's Education." *The Sociological Review* 48 (4): 568–585.
*Rogers, M. A., J. Theule, B. A. Ryan, G. R. Adams, and L. Keating. 2009. "Parental Involvement and Children's School Achievement: Evidence for Mediating Processes." *Canadian Journal of School Psychology* 24 (1): 34–57.
Roopnarine, J. L., ed. 2015. *Fathers across Cultures: The Importance, Roles, and Diverse Practices of Dads: The Importance, Roles, and Diverse Practices of Dads*. Santa Barbara, CA: ABC-CLIO.
*Sanghavi, T. 2010. "Factors Influencing Asian Indian American Children's Academic Performance." PhD diss., Mumbai University, Mumbai.
Schoppe-Sullivan, S., B. A. McBride, and M. R. Ho. 2004. "Unidimensional versus Multidimensional Perspectives on Father Involvement." *Fathering* 2 (2): 147–163.
*Seginer, R., Y. B. Cohen, and S. Zukerman. 1988. "Mothers' Characteristics and First-Grade Boys' Performance: Testing an Academic Achievement Path Model." *Journal of Genetic Psychology* 149 (3): 349.
*Seginer, R., and A. Vermulst. 2002. "Family Environment, Educational Aspirations, and Academic Achievement in Two Cultural Settings." *Journal of Cross-Cultural Psychology* 33 (6): 540–558.
*Sirin, S. R., and L. Rogers-Sirin. 2004. "Exploring School Engagement of Middle-Class African American Adolescents." *Youth and Society* 35 (3): 323–340.
*Smith, T. E. 1989. "Mother-Father Differences in Parental Influence on School Grades and Educational Goals." *Sociological Inquiry* 59 (1): 88–98.
*Strauss, R. M. 2001. "A Contextual Approach to Understanding Fathers' Involvement in Their Children's Schooling." PhD diss., University of California, Irvine, CA.
*Tam, V. C. 2009. "A Comparison of Fathers' and Mothers' Contributions in the Prediction of Academic Performance of School-Age Children in Hong Kong." *International Journal of Psychology* 44 (2): 147–156.

Tamis-LeMonda, C. 2004. "Conceptualizing Fathers' Roles: Playmates and More." *Human Development* 47 (4): 220–227.

Tamis-LeMonda, C., and N. J. Cabrera. 2002. *Handbook of Father Involvement: Multidisciplinary Perspectives*. Mahwah, NJ: Lawrence Erlbaum.

*Tan, E. T. 2010. "A Contextual Approach to Understanding Immigrant Asian Fathers' Educational Involvement in Their Children's Lives." PhD diss., University of California, Irvine, CA.

*Tan, E. T., and W. A. Goldberg. 2008. "Parental School Involvement in Relation to Children's Grades and Adaptation to School." *Journal of Applied Developmental Psychology* 30 (4): 442–453.

*Topor, D. R., S. P. Keane, T. L. Shelton, and S. D. Calkins. 2010. "Parent Involvement and Student Academic Performance: A Multiple Mediational Analysis." *Journal of Prevention and Intervention in the Community* 38 (3): 183–197.

*Visser, D. 1987. "The Relationship of Parental Attitudes and Expectations to Children's Mathematics Achievement Behaviour." *Journal of Early Adolescence* 7 (1): 1–12.

Walker, J. M., A. S. Wilkins, J. R. Dallaire, H. M. Sandler, and K. V. Hoover-Dempsey. 2005. "Parental Involvement: Model Revision through Scale Development." *The Elementary School Journal* 106 (2): 85–104.

*Wood, D., B. Kurtz-Costes, S. J. Rowley, and N. Okeke-Adeyanju. 2010. "Mothers' Academic Gender Stereotypes and Education-Related Beliefs about Sons and Daughters in African American Families." *Journal of Educational Psychology* 102 (2): 521–530.

*Xie, Q. 1998. "*Perceptions of Childrearing Practices by Chinese Parents and Their Only Children, and Their Relations to Children's School Achievement*." PhD diss., University of Maryland, College Park, MD.

Yeung, W. J., J. F. Sandberg, P. Davis-Kean, and S. L. Hofferth. 2001. "Children's Time with Fathers in Intact Families." *Journal of Marriage and the Family* 63 (1): 136–154.

*Zellman, G. L., and J. M. Waterman. 1998. "Understanding the Impact of Parent School Involvement on Children's Educational Outcomes." *Journal of Educational Research* 91 (6): 370–380.

*Zhan, M., and Sherraden, M. (2002). *Effects of Mothers' Assets on Expectations and Children's Educational Achievement in Female-Headed Households.* (No. CSD-WP-02-9). Washington University, St Louis, MO. Working paper.

Full paper

Sains Humanika

A Study on Parental Involvement and Academic Achievement in Elementary School Students

Ng Wee Kuan, Tan Wee Chuen*

Faculty of Education and Social Sciences, Raffles University Iskandar, 80000 Johor Bahru, Johor, Malaysia

*Corresponding author: tanweechuen@raffles-university.edu.my

Abstract

Previous findings indicated that greater parental involvement will lead to better educational outcomes (Hoover-Dempsey & Sandler, 1997). This research aims to examine the relationship between parental involvement and student's academic achievement. A quantitative survey design was employed in the study. The samples were 150 families/parents of primary 3 students in a primary school at Johor Bahru. Pearson's *r* correlation was used to examine the relationship between parental involvement and student's academic achievement. However, contrary to previous findings, the results showed that there was no significant relationship between parental involvement and student's academic achievement ($n= 110$; $r= 0.175$; $p>0.05$). In spite of the inconsistency, we found there is a significant relationship between the construct of parental self-efficacy and student's academic achievement.

Keywords: Parental involvement, academic achievement, primary education, parental self-efficacy

© 2017 Penerbit UTM Press. All rights reserved

1.0 INTRODUCTION

Parents are playing crucial role in their children's lives and growth (Al-Matalka, 2014). They have the capability to inculcate the values that are important and meaningful to them. A philosopher, John Locke (1690) proposed that children born as a blank slate, called "tabula rasa". It implied that children do not carry any information and knowledge when they are born and all knowledge is acquired through environmental experiences. Jeynes (2005) revealed that there was a significant relationship between parental involvement and academic achievement among urban elementary students. The reason was because these two variables can generate educationally oriented learning environment. It enables parents to understand their children to a certain degree and provide support during their studies.

Additionally, Velleymalay (2012a) has paralleled this study and suggested that there is a positive relationship between parental involvement and student's academic achievement in Perak, Malaysia. He further explained that not only the socioeconomic status (SES) of parents influenced the level of involvement, but the cooperation of school (eg. expressing appreciation for parents' support) played a major role in increasing the amount of involvement.

Many elementary schools in Malaysia identified student's academic intellectual level with their academic achievement at school (Ministry of Education, 2015). As a matter of fact, it was interesting to understand whether the involvements of parents in their children's educations have a strong impact on their academic achievement. This study aims to examine the relationship between parental involvement and academic achievement. Quantitative research design was conducted to answer the research question: *Is there any significant relationship between parental involvement and academic achievement in primary school students?*

2.0 THEORETICAL FOUNDATION OF THE STUDY

When children are born, parents usually act as the primary educators of them (OECD, 2012). Therefore, parenting behaviors and attitudes will directly influence their children's learning outcomes. Parents who value the importance of learning, provide children emotional support and adequate amount of cognitive stimulation during early education enable children to achieve positive learning outcomes (OECD, 2012). Moreover, International Child Development Initiatives (ICDI, 2012) stated that positive parenting behaviors and attitudes are largely determined by parent's socioeconomic status, including parent's social class, education level, and psychosocial health. In addition, parent's cognitive development during their childhood has a powerful effect on their children's cognitive abilities as well.

Children learn and develop themselves from many ways, for example parents, teachers, and community (ICDI, 2012). Children are not only learned through formal education, the importance of parental participation in their studies should not be neglected. Bronfenbrenner (1986) proposed the bio-ecological model which stated that a child's development is shaped by the experiences from his or her immediate environments (eg. schools) and even broader biological, social, and cultural contexts. From this point of view, children learning process should not be limited to school, but also needed to include family, peers, and society. These components also play a critical role in determining children's educational outcomes.

In addition, Epstein (2001) proposed a model called "overlapping spheres of influence" which stated that the interaction between family, school, and community have a direct impact on student's learning outcomes. These three parties have to cooperate together to develop supportive relationship to support children's learning. Children are able to learn more and succeed in school if they (eg. children, parents, teachers, and community members) are willing to share their responsibilities. Moreover, children act as a mediator in teachers-parents relation by discussing, for example school activities with their parents and parent's working status with the teachers (Deslandes, 2001).

There are many psychological factors in which determine whether parents will involve in their children's education. Parental role construction is one of the factors that motivate their future involvement in children's education (Hoover-Dempsey and Sandler, 1997). It refers to parents will behave in a way that is consistent with the social roles or expectations. A set of social norms will define how a parent ought to behave. In school context, parental roles are influenced by the family, school, cultural background as well as parent's belief system about children development. These expectations will give pressure to parents when they think about their roles and behaviors in children's education (Hoover-Dempsey and Sandler, 1997). When parents are willing to take their roles, it indicated that they are intrinsically motivated to integrate social expectations about their roles into their self-expectations. This concept is congruent with a theory of motivation- self-determination theory (Deci & Ryan, 2000).

Self-determination theory maintained that people have the innate tendency to become intrinsically motivated to assimilate themselves into a larger social world (Sansone & Harackiewicz, 2000). However, to become intrinsically motivated, people need to experience three basic psychological needs, including autonomy, competency, and relatedness. With these three needs, it enables people to enhance their performance with creativity and persist longer. Applying this concept to parents, when parents decide to engage in their children's education, they are more likely to increase their engagement and sustain it for a longer period. On the other hand, if parents become involved in children's education only when receiving invitations from school, they are less likely to be intrinsically motivated. It will subsequently influence their involvement quality (Ghavifekr et al., 2014).

Parental self-efficacy level plays a decisive part in future involvement of children's education. Self-efficacy is the core idea of social cognitive theory which is proposed by Bandura (1993). It refers to how well the person believes that he or she has the abilities to deal with prospective demands and situations. According to this theory, parents develop their sense of efficacy through personal aspirations about their children's performance and then make action plan to achieve the desired outcomes (Bandura, 1993). People with high levels of self-efficacy tend to set higher goals and display high level of competency. They are more willing to put forth effort and persist longer to achieve the desired outcome. Applying this concept to parents, those who have high efficacy tend to engage in their children's schooling because they believe that their contributions will bring advantages to their children's academic achievement (Gutman & Akerman, 2008).On the other hands, parents with a low sense of efficacy are less likely to involve in their children's education.

Together with parental role construction, it is reasonable to conclude that the higher parental role construction and self-efficacy parents have, the higher the likelihood they become involved in their children's education. That is, parents who believe that they are responsible for their children's schooling and display high level of efficacy are more likely to engage in their children's learning process (Deslandes, 2001).

Parents decide to take part in children's educational process when they perceived invitations for involvement from either their children or the children's teacher (Hoover-Dempsey & Sandler, 1995). There are two types of invitations, including general and specific invitations. General invitations are involved more in a warm and inviting environment, for example attending school day's events. It represents a sign of welcome when parents visit to school. On the other hand, specific invitations refer to specific demands requested by the children or teachers, for example children ask to solve their homework problems or teachers expect parents to supervise their children homework (Hoover-Dempsey & Sandler, 1995).

According to Hoover-Dempsey and Sandler (1995), specific invitations from children or teachers are more effective in motivating parental future involvement than general invitations. It is because general invitations do not have enough power to construct parental role. Also, when parents display high level of role construction and self-efficacy, they tend to believe that their involvements are critical for children's academic success (Walker et al., 2005). Therefore, general invitations are not necessary to take the place to influence parent's future involvement.

Walker et al. (2005) further stated that specific invitations presented by children or school teachers will influence parental involvement form. For instance, children who always ask parents to assist their homework will lead parents to become focused on supervising children's homework. Similarly, school teachers who always communicate with parents by using phone and invite questions from parents may facilitate future parent-teacher interactions. Therefore, the types of parental involvement are largely determined by the specific demands of children and teachers.

According to Smith et al. (2007), ongoing and regular communication between the school and parents help to forge a trust relationship between two parties. It is crucial for them to develop partnerships as well as maintain a positive relationship. If parents are convinced that the school teachers always appreciate their efforts and contributions to their children's education, they are more likely to be motivated to participate in school activities actively (Bull, Brooking, & Campbell 2008). Hence, receiving positive and quality communication from the school teachers will enhance parent's feelings of comfort with the school.

Emerson, Fear, Fox, and Sanders's studies (2012) also stated that building trust relationship between parents and teachers can facilitate the future parental involvement. When there is a mutually trusting and respectful relationship between two parties, it will in turn increase the likelihood for parents to reply the invitations and involve in activities that direct toward children's educational outcomes. It will also increase their perception of the importance of engaging in children's learning (role construction) (Emerson, Fear, Fox, & Sanders, 2012).

In addition to parental role construction, parental self-efficacy, and parental perceptions of invitation for involvement from child or teacher, parental perceptions of life contexts also play a role in moderating their decisions for future engagement, for example available time and energy as well as knowledge and skills (Hoover-Dempsey & Sandler, 1995). There are many causes that reduce parent's times and energies to participate in children's studies, for example working status and family size. Gettinger & Waters (1998) stated that time and energy is the biggest challenges to effective parental involvement.

Furthermore, parental skills and knowledge are also important variables that influence their level and form of engagement (Hoover-Demsey & Sandler, 1995). For example, parents who are highly educated tend to believe in their abilities to communicate effectively with the school teachers and provide guidance to their children's academic difficulties. Walker et al. (2005) further suggested that specific skills

and knowledge in which parents possess will subsequently determine their choices of specific engagement type. For instance, parents who emphasize the importance of English subject will use English language to communicate with their children. Parents will always rely on certain engagement strategy that they feel comfortable and can be successful.

3.0 CONCEPTUAL FRAMEWORK

Many research indicated that there was a strong relationship between parental involvement and student's academic achievement that has not been applying to all countries and cultures (Jeynes, 2005; Walker et al., 2005). Other variables may moderate student's academic achievement instead of parental involvement. Nevertheless, in Malaysia, there are limited studies in this area. It is necessary to investigate whether the assumptions from the previous findings can be applied to Malaysia context. Therefore, the study of the relationship between parental involvement and academic achievement in primary school students become important.

Moreover, the study becomes significant when a study identified that approximately 64% of parents sent their children to private tuition in 2005 (Ubbudari Husaina, 2014). Moreover, there is an increased amount of students are sent to the private tuition every year. The reason is because they hope that their children can pass their exams with flying colors after sending them to the private tuition. They greatly emphasize on the performance of exam which is in line with the Integrated Curriculum for Primary Schools's (ICPS) (or Kurikulum Bersepadu Sekolah Rendah, KBSR, Malay version) exam-oriented approach. Moreover, Ghavifekr et al. (2014) suggested that many parents are high demanding and like to compare their children's performance in school with others. They also tend to exaggerate little or unnecessary things in school. It indicates that parents are not only concerned with their children's learning process, but also concerned with the school environment.

This study aims to examine the relationship between parental involvement and students' academic achievement. Figure 1 illustrated the conceptual model of the study.

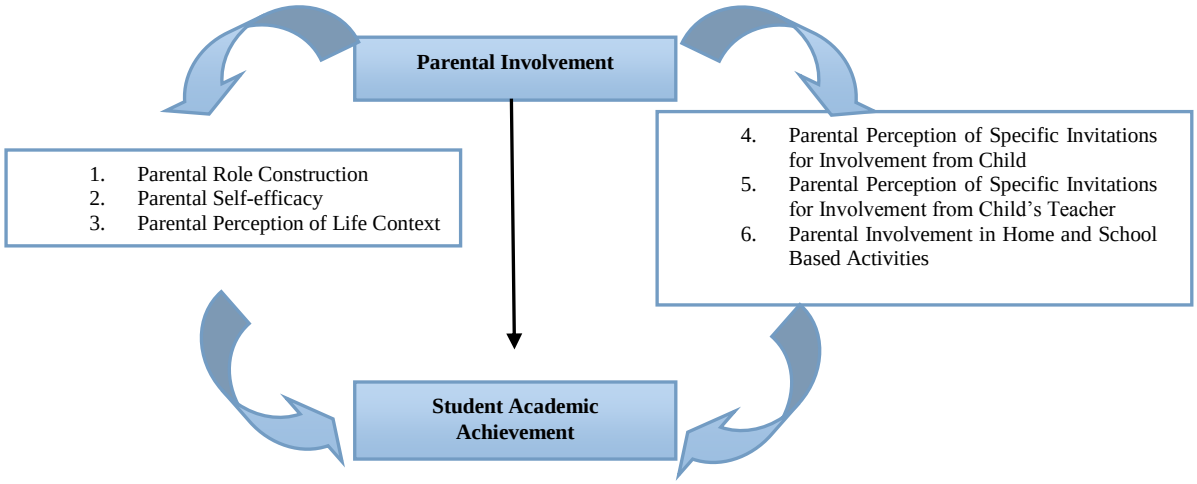


Figure 1 Research conceptual model

In general, parental involvement was defined as the participation of parents in children's learning activities and educational process (Jeynes, 2007). In this research, parental involvement is divided into two main areas, including home and school. At home, there are many prominent aspects, for example discussing school activities, aspirations and expectations, reading, checking homework as well as home rules and supervision (Shute et al., 2011). On the other hand, at school, the important areas are contacting school instructor and volunteering at school (Shute et al., 2011). The study has identified the conceptual model based on the theoretical foundation of this study as discussed in the above section. The model consists of the study of relationship between the parental involvement and academic achievement. Six main components were identified under parental involvement which are:

i. Parental role construction
ii. Parental self-efficacy
iii. Parental perception of life context
iv. Parental Perception of Specific Invitations for Involvement from Child
v. Parental Perception of Specific Invitations for Involvement from Child's Teacher
vi. Parental Involvement in Home and School Based Activities

Academic achievement was defined as using standardized tests (eg. exam) to measure student's knowledge and skills (Ganai and Mir, 2013). The grading and scoring system are used in school to describe the students' performance in order to reflect their learning abilities.

■4.0 METHODOLOGY

Research Design

This study used quantitative research design. A survey design was employed in the current study. The study was conducted in an elementary school in Malaysia.

Research Instrument and Participants

Two questionnaires were used in the study. Firstly, a demographics questionnaire was administered to collect the data regarding the gender, age, educational status, ethnicity, occupation, and income. The demographics questionnaire was made on the basis of Velleymalay's (2012b) version. Secondly, the questionnaires were adapted from Walker et al. (2005). It consists of a 6-point self-report scale and was used by the researcher to measure parental involvement. The overall reliability statistic of the parental involvement questionnaire achieved a reliability of 0.70 - 0.84 (Walker et al., 2005).

The questionnaire consisted of 52 items. Of these, there were 10 items in which measured parental role construction, 7 items measured parental self-efficacy, 6 items for parents' perceptions of specific invitations for involvement from the child, 6 items for parent's perspectives of specific invitations for involvement from the teacher, 13 items measured parental perception of life context and 10 items measured parents' involvement in home- and school-based activities.

A non-probability purposive sampling was used in the research sampling. Participants of this study were the parents of primary 3 students from a primary school. Parents of students from Band A and Band B were selected by the school to participate in the research. It was also the purpose of the school to understand whether band A students (students who achieve good grades in their examination on the previous year) could achieve good results was because of greater parental involvement compared to students in band B(students achieve normal or below normal grades in their examination on the previous year). Half of the participants were the parents of band A students whereas the other half were the parents of band B students. A total of 150 participants (or families) recommended by the school had participated in this study voluntarily. However, the researcher received 110 completed responses. Therefore, a total of 110 responses was used in the data analysis.

Prior to conducting research , 150 sets of questionnaires which included demographic and Walker et al.'s (2005) parental involvement questionnaires was prepared. A translate version of the questionnaire in Chinese was prepared to help the parents to understand the items of the questionnaire. The researcher distributed the questionnaire to student's parent. The questionnaire consists of brief introduction and the consent form. Parents were allowed to withdraw from the study at any time. A week was given to the parent to complete the questionnaire. The class teachers helped to collect responses from the parents. The data were entered into SPSS for further analysis. Pearson's r correlation was used to examine the relationship between parental involvement and student's academic achievement.

■5.0 RESULTS AND DISCUSSION

Descriptive Data Analysis on Parental Involvement and Student's Academic Achievement

Table1 represents the means and standard deviations of each parental involvement construct and student's academic achievement. The mean range of the constructs of parental involvement was 1 to 6 while the student's academic achievement was 1 to 100. It was clear that the highest mean was parental role construction (5.01) whereas the lowest mean was parental perception of specific invitations from child's teacher (2.12). Moreover, the mean score of two constructs were the same (3.07), which included parental perception of specific invitations from child and parental involvement in home and school based activities. Nevertheless, the overall mean of parental involvement was 3.63.

For standard deviations, it was noticeable that student's academic achievement was the highest (14.72). In the constructs of parental involvement, parental perception of specific invitations from child's teacher showed slightly higher than other constructs which was 1.11. The overall standard deviation of parental involvement was 0.51.

Table 1 Means and standard deviations for each parental involvement construct and student's academic achievement

Construct	Mean	Standard Deviation
Parental Role Construction	5.01	0.50
Parental Self-efficacy	3.95	0.50
Parental Perception of Life Context	4.56	0.58
Parental Perception of Specific Invitations for Involvement from Child	3.07	1.01
Parental Perception of Specific Invitations for Involvement from Child's Teacher	2.12	1.11
Parental Involvement in Home and School Based Activities	3.07	0.95
Overall	3.63	0.51
Student's Academic Achievement	75.19	14.72

Correlational Analysis between Parental Involvement and Student's Academic Achievement

Table 2 presents the output of correlational analysis between parental involvement and student's academic achievement. It showed that there was a weak but positive correlation between overall parental involvement and student's academic achievement. However, there was no significant relationship between two variables ($n= 110$; $r= 0.175$; $p > .05$).

Table 2 Output of correlational analysis between parental involvement and student's academic achievement

Correlations

		STUDENTACHIEVEMENT	Parental Role Construction	Parental Perceived LifeContext	Parental PerceptionOf InvitationsFor Involvement FromChild	Parental PerceptionOf InvitationsFor Involvement FromTeacher	Parental Involvement InHomeAnd School Based Activities	ParentalSelf Efficacy	MeansAll
STUDENTACHIEVEMENT	Pearson Correlation	1	.159	.167	.224*	-.251**	.240*	.378**	.175
	Sig. (2-tailed)		.097	.082	.019	.008	.012	.000	.067
	N	110	110	110	110	110	110	110	110
ParentalRoleConstruction	Pearson Correlation	.159	1	.585**	.217*	.059	.284**	.122	.472**
	Sig. (2-tailed)	.097		.000	.023	.537	.003	.202	.000
	N	110	110	110	110	110	110	110	110
ParentalPerceivedLife Context	Pearson Correlation	.167	.585**	1	.267**	.114	.372**	.358**	.584**
	Sig. (2-tailed)	.082	.000		.005	.236	.000	.000	.000
	N	110	110	110	110	110	110	110	110
ParentalPerceptionOf InvitationsFor InvolvementFromChild	Pearson Correlation	.224*	.217*	.267**	1	.438**	.720**	.126	.812**
	Sig. (2-tailed)	.019	.023	.005		.000	.000	.191	.000
	N	110	110	110	110	110	110	110	110
ParentalPerceptionOf InvitationsFor InvolvementFromTeacher	Pearson Correlation	-.251**	.059	.114	.438**	1	.446**	-.103	.656**
	Sig. (2-tailed)	.008	.537	.236	.000		.000	.283	.000
	N	110	110	110	110	110	110	110	110
ParentalInvolvementIn HomeAndSchoolBased Activities	Pearson Correlation	.240*	.284**	.372**	.720**	.446**	1	.176	.849**
	Sig. (2-tailed)	.012	.003	.000	.000	.000		.066	.000
	N	110	110	110	110	110	110	110	110
ParentalSelfEfficacy	Pearson Correlation	.378**	.122	.358**	.126	-.103	.176	1	.307**
	Sig. (2-tailed)	.000	.202	.000	.191	.283	.066		.001
	N	110	110	110	110	110	110	110	110
MeansAll	Pearson Correlation	.175	.472**	.584**	.812**	.656**	.849**	.307**	1
	Sig. (2-tailed)	.067	.000	.000	.000	.000	.000	.001	
	N	110	110	110	110	110	110	110	110

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

For the correlation between the components of parental involvement and student's academic achievement, parental self-efficacy had the strongest correlation with student's academic achievement (r= 0.378) while parental role construction had the weakest correlation with student's academic achievement (r= 0.159). Gutman and Akerman (2008) stated that parents who have high level of efficacy are more likely to engage in children's education because they believe that their contributions are worth and meaningful to children's studies. Hence, the current findings were congruent with previous research. By referring to parent's self-efficacy level, it could predict their level of involvement which in turn influenced student's academic achievement. However, Hoover-Dempsey and Sandler (1997) suggested that the way parents construct their roles will influence their future involvement in children's education. When they perceived that they are important educators in their children's learning process, they are more likely to initiate their involvement in children's education. The current findings did not in line with the previous assumption.

Moreover, there was a negative relationship found between parental perception of specific invitations for involvement from child's teacher and student's achievement (r= -0.251). Contrary to previous findings, the previous research maintained that parental perception of invitations for involvement from child or teacher play a decisive part in future involvement (Hoover-Dempsey and Sandler, 1995).

Other variables, for example parental perception of life context, parental perception of invitations for involvement from child as well as parental involvement in home and school-based activities reported a weak but positive correlation of 0.167, 0.224, and 0.240 respectively with student's academic achievement. Gettinger and Waters (1998) described that parental perception of life contexts will play a role in influencing their future engagement. Additionally, Hoover-Dempsey and Sandler (1995) stated that parental involvement activities are largely determined by the specific invitations either from child or teacher. Therefore, parental engagement activities are highly related to children's learning needs.

Looking at the correlation between parental involvement variables, parental perception of invitations for involvement from child had had the strongest relationship with the construct of parental involvement in home and school-based activities (r= 0.720). Walker et al. (2005) suggested that specific invitations conveyed by child or teacher are critical for determining parental engagement form. It implied that specific invitations from either child or teacher would have a direct impact on parental engagement activities. On the other hand, the weakest correlation was found between parental perception of invitations for involvement from teacher and the parental role construction (r= 0.59). Furthermore, there was only one negative relationship found between parental role construction and parental perception of invitations for involvement from teacher (r= -0.103).

In addition, some of the parental involvement variables were still considered highly correlated with other constructs by looking at the stars given. For example, there were two asterisks indicated between parental role construction and parental perception of life context (r= 0.585), parental role construction and parental involvement in home and school-based activities (r= 0.284), parental perception of invitations for involvement form child and parental perception of life context (r= 0.267), parental involvement in home and school-based activities and parental perception of life context (r= 0.372), parental self-efficacy and parental perception of life context (r= 0.358), parental perception of invitations for involvement from child and teacher (r= 0.438), and parental perception of invitations for involvement from teacher and parental involvement in home and school-based activities (r= 0.446).

6.0 CONCLUSION

There were a lot of inconsistencies found in the study, however, the findings illustrated the strong evidence that parental self-efficacy had an impact on student's academic achievement. These findings had implications especially to the parents and the school. It is important for parents to develop a strong sense of confidence of their abilities in assisting children's learning. It would bring advantages to their children's learning outcomes.

School plays a crucial role in collaborating with parents by implementing parental involvement programs. School could offer such programs to encourage parents to share their difficulties and feelings with each other to make them realize that they were not alone. It would in turn facilitate their sense of efficacy and develop a positive and reinforcing relationship between the school and parents. Epstein's (2001) model of overlapping spheres of influence implied that the cooperation between the school and parents will have powerful effects on student's educational outcomes.

Moreover, the current study also reported a strong relationship between parental perception of specific invitations for involvement from child or child's teacher and parental involvement in home and school-based activities. These findings were important to the teachers and students. They had to initiate the actions (eg. children asked for homework help and teachers gave a call to parents) before parental involvement could take the place. However, it did not mean that students and teachers had to take all the responsibility, parents also needed to engage in children's studies actively.

This study examined different components of parental involvement and their relationships with student's academic achievement. Although the results demonstrated that there was no significant relationship between overall parental involvement and student's academic achievement, parental self-efficacy was found related to student's academic achievement

References

Al-Matalka, F.I.M. (2014). The Influence Of Parental Socioeconomic Status On Their Involvement At Home. *International Journal of Humanities and Social Science*, *4*(5), 146-154.

Bandura, A. (1993). Perceived Self-Efficacy In Cognitive Development And Functioning. *Educational Psychologist*, *28*(2), 117-148.

Bronfenbrenner, U. (1986). Ecology of The Family As A Context For Human Development: Research Perspectives. *Developmental Psychology*, *22*, 723-742.

Bull, A., Brooking, K. & Campbell, R. (2008). Successful Home-School Partnerships. Report prepared for Ministry of Education by New Zealand Council for Educational Research.

Deci, E.L. & Ryan, R.M. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions And New Directions. *Contemporary Educational Psychology*, *25*, 54–67

Deslandes, R. (2001). A Vision of Home-School Partnership: Three Complementary Conceptual Frameworks. Paper Prepared for the European Research Network about Parents in Education conference, Rotterdam, The Netherlands.

Emerson, L., Fear. J., Fox, S., and Sanders, E. (2012). Parental Engagement In Learning And Schooling: Lessons From Research. A Report by the Australian Research Alliance for Children and Youth (ARACY) for the Family-School and Community Partnerships Bureau: Canberra.

Epstein, J. L. (2001). *School, Family, And Community Partnerships: Preparing Educators And Improving Schools*. Boulder, CO: Westview Press.

Ganai, M.Y. & Mir, M.A. (2013).A comparative Study Of Adjustment And Academic Achievement Of College Students. *Journal of Educational Research and Essays*, *1*(1), 5-8.

Gettinger, M., & Waters, K. W. (1998). Parental Involvement In Schools: Parent And Teacher Perceptions Of Roles, Efficacy, And Opportunities. *Journal of Research and Development in Education, 32***,** 38–52.

Ghavifekr, S., Lim, A.S.H., Hee, F.L., & Tan, M.C. (2014). Heads of Departments As Transformational Leaders In Schools: Issues And Challenges. *Malaysian Online Journal of Educational Management (MOJEM)*, *2*(3), 119-139.

Gutman, L. & Akerman, R. (2008). *Determinants of Aspirations*. University of London, Institute of Education

Hoover-Dempsey, K.V. & Sandler, H.M. (1995). Parental Involvement In Children's Education: Why Does It Make A Difference? *Teachers College Record*, *97*(2), 311-331.

Hoover-Dempsey, K.V., & Sandler, H. M. (1997). Why do Parents Become Involved In Their Children's Education? *Review of Educational Research*, *67*(1), 3–42

International Child Development Initiatives (ICDI, 2012). Parental Involvement in early learning. Retrieved from http://www.bernardvanleer.org/files/Parental_involvement_in_early_learning.pdf

Jeynes, W.H. (2005). A Meta-Analysis Of The Relation Of Parental Involvement To Urban Elementary School Student Academic Achievement. *Urban Education*, *40,* 237-269.

Ministry of Education (MOE) (2015). Retrieved from http://apps2.moe.gov.my/kurikulum/v2/

OECD (2012). Let's Read Them A Story! The Parent Factor In Education, PISA, OECD Publishing. Retrieving from http://dx.doi.org/10.1787/9789264176232-en

Sansone, C. & Harackiewicz, J.M. (2000). *Intrinsic and Extrinsic Motivation: The Search For Optimal Motivation And Performance*. San Diego, CA: Academic Press.

Shute, V.J., Hansen, E.G., Underwood, J.S., and Razzouk, R. (2011). A Review Of The Relationship Between Parental Involvement And Secondary School Students' Academic Achievement. *Education Research International, 2011*, 1-10

Smith, F., Driessen, G., Sluiter, R. & Sleegers, P. (2007). Types Of Parents And School Strategies Aimed At The Creation Of Effective Partnerships. *International Journal about Parents in Education, 1*(0), 45-52.

Ubbudari Husaina, M. (2014). The Effect Of School Based Assessment (SBA) On Private Tutoring: A Pilot Study. 1-15.

Velleymalay, S.K.N. (2012a). Bridging School And Parents: Parental Involvement In Their Child's Education. *Journal of Studies in Education*, *2*(1), 41-57.

Velleymalay, S.K.N. (2012b). The Impact Of Parent's Socioeconomic Status On Parental Involvement At Home: A Case Study On High Achievement Indian Students Of A Tamil School In Malaysia. *International Journal of Academic Research in Business and Social Sciences*, *2*(8), 11-24.

Walker, J.M.T., Wilkins, A.S., Dallaire, J.R., Sandler, H.M., & Hoover-Dempsey, K.V. (2005). Parental Involvement: Model Revision Through Scale Development. *The Elementary School Journal, 106*(2), 85-104.

Motiv Emot
DOI 10.1007/s11031-017-9627-5

ORIGINAL PAPER

Parental autonomy-supportive practices and toddlers' rule internalization: A prospective observational study

Julie C. Laurin[1] · **Mireille Joussemet**[1]

© Springer Science+Business Media, LLC 2017

Abstract Motivational research conducted within self-determination theory suggests that autonomy-supportive (AS) parenting fosters rule internalization, while more controlling tactics hinder it. The goal of the present study is to examine how AS in a socialization context relates to toddlers' internalization. Toddlers participated in a clean-up and a toy prohibition task at 2 and 3.5 years of age (T1: $N=102$; T2: $N=85$). Their parent's disciplinary strategies were coded the first year. Toddlers' committed compliance, indicative of rule internalization, was coded at both time points. After controlling for covariates and initial committed compliance, a linear regression was conducted to predict change in committed compliance over time. As expected, results reveal that parental AS strategies when toddlers were 2 years old were positively related to an improvement in committed compliance from 2 to 3.5 years of age, while controlling strategies predicted deterioration. This prospective, observational study suggests that supporting toddlers' autonomy in socialization contexts fosters rule internalization.

Keywords Autonomy-supportive parenting · Controlling parenting · Toddlers · Committed compliance · Internalization

✉ Julie C. Laurin
j.laurin@umontreal.ca

Mireille Joussemet
m.joussemet@umontreal.ca

[1] Universite de Montreal, Montreal, QC, Canada

Introduction

The parent–child relationship can be very fulfilling. Regardless, parental discipline can be challenging for both parent and child, perhaps particularly during toddlerhood (Nelson et al. 2014). In this period, children's assertion toward autonomy and agency occurs simultaneously as increasing demands are placed on them and as they are increasingly capable of initiating and regulating their conduct (Maccoby 1984). Thus, toddlers' socialization can be a strain on both parties. In a disciplinary context, parenting typically refers to bidding toddlers to perform a requested conduct or refrain from exhibiting a prohibited action ("do" and "don't", respectively; Kochanska and Aksan 1995).

A developmental perspective of toddlers' rule internalization

In the parent–child relationship, the child's (non)compliance begins following a parental demand, requesting the child to act in a specified way. The internalization process is the evolution from which these parental socialization attempts eventually become transformed into self-endorsed standards for child behavior which occur with distal parental monitoring (Forman 2007; Gralinski and Kopp 1993; Kochanska and Aksan 1995; Lepper 1983; Maccoby 1984). The self-control and self-regulation necessary in internalization however, is limited by the developmental age of the child. For instance, Kopp (1982) suggests that between the ages of 12 and 18 months, babies become capable of 'control', including the awareness of social demands and the ability to initiate, maintain and cease behavior, and to comply to caregiver's requests. Yet, Kopp (1982) indicate that only by the age of 24 months, toddlers acquire 'self-control', or the ability to delay on request and begin to

Published online: 04 August 2017

regulate behavior, even in the absence of external monitors. By 36 months, self-regulation emerges, which Kopp (1982) defines as the flexibility of control processes that meet changing demands. As such, the shift from external regulation, where parents assist children's behavior regulation through guidance and structure provision, to autonomous self-regulation without parental monitoring emerges during toddlerhood (Kochanska et al. 2001). Of note, the word 'autonomous' self-regulation here refers to whether a child can self-regulate independently, without parental assistance or supervision. In early development research, toddler internalization of rules has traditionally been measured through types of compliance (Blandon and Volling 2008; Feldman and Klein 2003; Forman 2007; Kochanska and Aksan 1995; Kochanska et al. 1998, 2001; Kuczynski and Kochanska 1990). Committed compliance describes a child's full endorsement of parental agenda as its own; a type of compliance which takes place without parental cues or reminders. It has been found to be a good predictor of internalization of rules (e.g., Kochanska and Aksan 1995; Kochanska et al. 1998, 2001).

A self-determination theory perspective on rule internalization

Internalization of rules (i.e., to enact a socially desirable behavior or to suppress a forbidden one; e.g., to follow a request; not touching something enticing) is essential for children's social integration and psychosocial adjustment (Joussemet et al. 2005; Masten and Coatsworth 1998; Roth et al. 2009). On the one hand, parents would love their toddler to cooperate and follow their rules. Conversely, some research has shown that obtaining absolute obedience may negatively impact children's individuality, development and well-being (e.g., Dix et al. 2007). Deciding how to make a request or a prohibition may thus represent a challenge for parents, perhaps especially if they aim to foster both their toddler's cooperation and well-being.

Interestingly, a central tenet of self-determination theory (SDT; Deci and Ryan 1980, 1985, 2000, 2008b) is that all human beings have a natural propensity toward internalization, a key developmental process (along with intrinsic motivation). Internalization is the process by which children integrate less interesting but important behaviors and values of their social environment (Deci et al. 1994, 2013; Schafer 1968) and is often seen as the central goal of socialization, when children "take in" social regulations, make them their own, and eventually self-regulate autonomously (e.g., Lepper 1983; Schafer 1968). From the SDT perspective, autonomous self-regulation does not refer to independent self-regulation ("I can do it on my own without supervision"), as in developmental research. Indeed, people can act independently based on either autonomous or more controlled, pressured forms of motivation (Soenens et al. 2007). For instance, cleaning-up in order to avoid punishment, shame, or to be perceived as competent are all controlled motivations, while cleaning-up because the child values helping, or wants to avoid breaking or losing some toys are more autonomous, volitional forms of motivation (Deci and Ryan 2008a; Soenens et al. 2007). Thus, SDT's autonomous self-regulation is based on volition, where one's actions, thoughts, and emotions are harmonious and integrated with one's hopes, desires, and values (Deci and Ryan 2008a, b). Importantly, SDT posits that this natural tendency towards autonomous self-regulation can be either facilitated or forestalled by one's social context through the un-/fulfillment of essential psychological needs (Deci and Ryan 2000; Deci et al. 2013; Ryan and Deci 2000a). Autonomy is one of the three essential psychological needs proposed by SDT, along with competence and relatedness (Deci and Ryan 1980, 1985, 2000, 2008b; Deci et al. 2013). As mentioned, the need for psychological autonomy does not translate into independence. Rather it transcribes into the sense of volition, choice, and personal endorsement of one's actions; to authentically reconcile the internal or external forces that influence behaviors (Deci and Ryan 2000, 2008a; Ryan and Deci 2000a). Autonomy is thus about harmonious, volitional and integrated functioning, in contrast to more pressured, conflicted or alienated experiences (e.g., defiance and submission) often related with psychological control.

There are four elements that are typically used to define autonomy support (see Deci and Ryan 2000, 2008b; Deci et al. 2013; Ryan and Deci 2000a for a theoretical review) in socialization relationships (e.g., teacher-student, parent–child). First, the provision of a personally meaningful *rationale* aids in understanding why the activity would have personal utility or relevance (Deci et al. 1994). For instance, to facilitate the internalization of a cleaning-up rule, a parent can explain to her child that someone could step on the toys and break them if left on the floor. The second element is *empathy*, or the acknowledgement of the individual's feelings about the request and his/her inclination (Koestner et al. 1984). Doing so conveys respect and legitimacy for children's desires and feelings (Deci et al. 1994). The next element relates to the provision of *choices* in the manner to tackle the task at hand, which encourages initiative (Deci et al. 1994). Finally, the fourth element concerns the *manner in which the request is made* to the child. The issue here is whether they are provided in a way that is either pressuring ("should", "musts", and "have to's") or in a respectful and agency-granting manner (Koestner et al. 1984; Ryan 1982). The chosen words in the request are key elements (Deci et al. 1993) in autonomy support.

Research conducted within the SDT framework has shown that autonomy-supportive (AS) parenting is

associated with positive child outcomes (see Joussemet et al. 2008; Moreau and Mageau 2013 for reviews) such as children's rule internalization, while controlling parenting is detrimental. There are several definitions of controlling parenting (see Grolnick and Pomerantz 2009 for a review). SDT research defines it mainly by disciplinary tactics characterized by pressure, domination, and intrusion (Grolnick and Pomerantz 2009; e.g., use of threats, orders, overprotection, guilt induction, bribes, love withdrawal). Controlling parenting thwarts children's sense of autonomy by pressuring them into feeling a necessity to control or change their thoughts, feelings, and behavior in order to meet parental expectations (Deci and Ryan 1980, 1985, 2000, 2008b; Grolnick and Pomerantz 2009). It is distinct from parenting characterized by guidance which, although frequently labeled as control, better represents behavioral structure (Grolnick and Pomerantz 2009).

Supporting toddlers' autonomy and rule internalization

Much of the research on AS and controlling parenting focalizes on school-aged children, adolescents and young adults. With regard to toddler populations, AS parenting is rarely measured. We found one study using self-report to assess AS parenting of toddlers (Zimmer-Gembeck et al. 2015). This four-item scale taps mothers' self-perception of their ability to (1) encourage their toddler to express their feelings; (2) support their toddler's efforts to try new things on his/her own; (3) support their toddler to be him/herself; and (4) allow their toddler to explore things by him/herself. Though an interesting first step, this self-report measure does not fully grasp all facets of the autonomy support construct and focuses on parents' beliefs about their abilities (vs. frequency of use), with an emphasis on toddlers' independence rather than autonomy (Ryan and Deci 2000b; Ryan et al. 2006). This is problematic as, for example, one could feel capable of encouraging a child to try new things and to explore things by him/herself while using controlling language, using bribes and sarcasm. Although it is good to invite a child to express their affect, once the child has done so, how does the parent respond? Does s/he empathize with the child or demands that s/he gets over it to move on? The AS construct is a simple, yet complex parenting practice. As such, we believe it is better measured in an observational context when studying toddlers.

Prior coding systems have not determined a set of behaviors that unquestionably undetangle AS parenting from controlling parenting or warmth. For instance, gentle guidance (Kochanska 1995, 2000; Kochanska and Aksan 1995), a construct which includes behaviors akin to autonomy support (e.g., using reasoning, suggestions) also integrates potentially more controlling behaviors since direct commands are included in the gentle guidance code if they were not accompanied by a negative comment, harsh physical intervention or threat (Blandon and Volling 2008; Kochanska and Aksan 1995; Volling et al. 2006). Thus, gentle guidance may represent a measure of lack of harshness, or at least a degree of gentleness with one's child. Indeed, a closer to look at Kochanska and Aksan (1995)'s specific coding system (Kochanska 2000), which many developmental studies use (e.g., Blandon and Volling 2008; Kochanska 1995; Kochanska et al. 2001; Volling et al. 2006), reveals that much of the gentle guidance code relies on the tone of the parent. Yet, a parent could "speak softly" and "try to elicit the child's interest and challenge the child" (Kochanska 2000, pp. 8–9) while wording out sarcasm or bribing the child. Similarly, Kochanska's gentle guidance code relies on a "mothers' demeanor (as) playful, encouraging, affectively positive, and affectionate" in tone (Kochanska 2000, pp. 8–9) to elicit the child's compliance. When measures conflate autonomy support with warmth, affection, playfulness or happiness, it threatens conceptual clarity. I our view, the tone of voice and demeanor of the parent should not change the coded strategy. A threat or a bribe spoken in a soft or happy voice remains a threat or a bribe; these should be coded as such regardless of parental tone or demeanor.

Moreover, as this macroscopic (global) rating forces coders to choose one of its five codes on a 30-sec interval (0: no interaction; 1: social exchange, but no clean-up related control; 2: gentle guidance; 3: control; 4: power assertion), it does not permit the reality that parents can use both AS and controlling strategies within the same 30-sec interval. Yet, Skinner et al. (2005) have shown evidence that autonomy support and controlling parenting are two distinct, yet negatively related factors, thus clearly underlining the necessity that these constructs should both be measured, and separately. Codes that characterize a 30-sec interval to one specific code cannot differentiate parents who singularly use autonomy supportive or controlling strategies or a combination of both (and to what degree). Thus, Kochanska's gentle guidance code does not clearly detach the orthogonal constructs of autonomy support and controlling parenting.

Akin to orthogonality issues, prior coding systems have not clearly determined a set of behaviors that would be considered AS as distinct from *lower* controlling or sensitivity. Undoubtedly, controlling parenting enacted with toddlers is related to poorer physiological and emotional regulation, compliance, mastery motivation and competence development (e.g., Calkins et al. 1998; Feng et al. 2011; Frodi et al. 1985; Kochanska and Aksan 1995). Nevertheless, less controlling parenting does not equate more AS practices as they are distinct, orthogonal constructs (e.g., Silk et al. 2003; Vansteenkiste and Ryan 2013). Similarly, Whipple et al. (2011) have shown that parental sensitivity and

autonomy-support are only somewhat related ($r = .13$), thus underlying the discrete nature of these parenting practices. To this point, most of the observational research examining specifically autonomy support during toddlerhood was conducted in a play context. For instance, in Parpal and Maccoby (1985)'s study, parents were taught how to play in a way akin to autonomy support. A week later, when parents were asked to request compliance, which they solicited in a standardized way by repeating the experimenter's directions over radio, children of parents who had played in a "more autonomy-supportive" manner exhibited greater compliance.

Notably, some studies have examined the influence of observed parental autonomy support during toddlerhood, in a game activity (puzzle; Bernier et al. 2012; Matte-Gagné et al. 2013; Whipple et al. 2011; Zuk 2014), and found that parental autonomy support (when toddlers were 15-months) was positively related to children's executive functioning and security of attachment. The Bernier and colleagues coding system grasps some components of the autonomy support construct as defined by SDT, inspired by Grolnick's work (i.e., Grolnick et al. 2002; Grolnick and Ryan 1989). Their autonomy support variable is based on four subscales, which examine the extent to which the mother (1) intervenes according to the infant's needs and adapts the task to create an optimal challenge for the child; (2) encourages her child in the pursuit of the task, gives useful hints and suggestions, and uses a tone of voice that communicates to the child that she is there to help; (3) takes her child's perspective and demonstrates flexibility in her attempts to keep her child on task; (4) follows her child's pace, provides the child with the opportunity to make choices, and ensures that the child plays an active role in the completion of the task. While relying on observations is a strength, this coding system puts a strong emphasis on the task as an optimal challenge and can be conceived or interpreted as scaffolding (Hammond et al. 2012; Wood et al. 1976). In addition, this coding system relies on a single macroscopic (global) rating, forcing coders to choose one its four subscales. To our knowledge, observed AS parenting toward toddlers has never been coded using a microscopic rating whereby each discrete element used to define autonomy support was coded in segmented intervals. In addition, autonomy support toward toddlers has never been observed and coded within a socialization context, when parents need to motivate a toddler to perform an important yet unappealing task (e.g., clean-up request task).

The present study aims to examine how parental practices in a request context are related to toddlers' internalization by integrating research methods from developmental and motivational domains. Based on early development research, toddlers' rule internalization will be assessed in socialization contexts ("do" and "don'ts") by coding their committed compliance (wholehearted endorsement of maternal agenda; Kochanska and Aksan 1995). Based on motivational research anchored in SDT, we will measure the extent to which parents support and thwart toddlers' need for autonomy in a specific way.

Global constructs of mutual responsiveness and gentle control have been studied and shown to be positively related to rule internalization (e.g., Kim and Kochanska 2012; Kochanska 1997; Kochanska et al. 2001). The goal of the present study is to focus on the autonomy granting versus thwarting dimensions within parental discipline behaviors, avoiding the potentially confounding impact of child-parent reciprocity. The motivation SDT model helps clarify which practices are specifically related to autonomy (e.g., evaluative vs. informational feedback; Martens et al. 2010; Rakoczy et al. 2008). As such, we also aim to avoid the potentially confounding impact of the related yet distinct dimensions of warmth (vs. rejection) and structure (vs. chaos; Skinner et al. 2005). Finally but importantly, relatively little research on AS and controlling parenting practices have been conducted with toddlers and solely studied in "game-like" contexts. As such, the present study focuses on a request context and examines the predictive power of AS and controlling strategies on the development of toddlers' rule internalization. Of course, considerations for child and family confounds that either "pull" for more parental control (e.g., difficult temperament, financial strain; Grolnick 2002) or ease child self-regulation (e.g., easy temperament; Rothbart 2011) will be included as potentially confounding variables.

Present study

Using observational data, the present study examined toddler's committed compliance at 2 and 3.5 years old, in "do" and "don't" discipline contexts. Diverse parenting practices thought to reflect controlling and AS parenting were coded during a clean-up context ("do") when toddlers were 2 years of age. After controlling for toddlers' committed compliance at age 2 (T1) as well as for important determinants of rule internalization (i.e., temperamental and sociodemographic characteristics), we examined how parenting predicts changes in committed compliance over time. It was expected that AS parenting would predict improvements in committed compliance at 3.5 years old (T2) while controlling parenting practices would impede it.

Method

Participants

Data collection occurred over a 2-year period. Emulating similar observational studies (e.g., Kochanska and Aksan

1995), 109 2-year-old toddlers ($M = 26.43$, $SD = 1.74$ months, 56% boys) and their primary caregiver (mothers in 92.7% of cases) participated in the first data collection year (T1). The dyads were recruited by using various methods including birth lists, letters to daycares, as well as poster and newspaper ads in the Montreal (Quebec, Canada) area. All primary caregivers spoke either English (64.2%) or French in their homes, and most had a university education (61.4%). The participating families lived in various economic conditions, as family income varied from <$25,000 (11.9%) to more than $100,000 (14.7%). The largest proportion of participating families lived with an annual income between $50,000 and $75,000 (25.7%), followed by an income ranging between $75,000–$100,000 (22%), and $25,000–$50,000 (19.3%). All participants were compensated for their time, whereby parents received $20 and the child received a small toy after each visit.

During the first data collection year, all but three dyads attended two videotaped lab visits, approximately 1–2 weeks apart ($M = 10.68$ days, $SD = 6.61$). Recording problems obstructed all coding of four participants' lab visit videos. Thus, a total of 102 parent–child dyads had complete data available at Time 1 (T1).

Eighty-three percent of the original sample (86 dyads; 95.3% mothers) participated in the second data collection year, when children were 3.5 years of age ($M = 41$ months, $SD = 1.88$ months, 39% boys). Since one dyad did not come back for the second laboratory visit, the final sample at T2 was 85 dyads who attended the two videotaped lab visits (M days between visits = 9.43, $SD = 5.0$).

For each data collection year, informed consent was obtained from all parent participants included in the study. To address attrition, a multiple imputation was calculated for those who participated in the second data collection year ($n = 85$).

Procedure

When participating toddlers were 2- and 3.5-year-old (T1 and T2), the parent–child dyads were videotaped during two visits taking place 1–2 weeks apart. Each visit lasted 65–85 min. The dyads participated in a series of activities meant to elicit everyday activities, such as play time, snack time, storytelling, imitation and other learning activities. The testing rooms, a playroom and a naturalistic living room, were each rigged with two cameras. The former was equipped with a table and two chairs, while the latter had a couch, an armchair, a coffee table with a few toys and an off-limit shelf filled with attractive toys. The present study focuses on the clean-up tasks and any activity taking place in the living room, during which children were prohibited from touching the attractive toys.

At each visit, parents were invited to reinforce rules in contexts where they asked their child (a) to do an unpleasant activity (i.e., clean-up toys) and (b) to refrain from engaging in an appealing attractive activity (i.e., not touching attractive toys). These experimental tasks represent prototypes of Kochanska and colleagues "do" and "don't" socialization contexts (e.g., Kochanska and Aksan 1995) and results set in our lab setting have been published (e.g., Gosselin and Forman 2012).

"Do" context

This experimental task represents prototypes of Kochanska and colleagues' "do" socialization contexts (e.g., Gosselin and Forman 2012; Kochanska and Aksan 1995). The "do" context consisted of a clean-up task in the playroom during each lab visit, with 7 min to complete. After 5 min of free play, the instructor requested the parent to ask their toddler to clean up the toys and try to make the task more the child's responsibility than theirs. Toddlers thus spent a total time of 14 min in this "do" context, at each time point (at T1 and at T2).

"Don't" context

There were numerous "don't" situations, all taking place in the living room, equipped with a shelf with a large number of attractive toys. Children were expected to never touch them. The few other toys available in the living room were either uninteresting for toddlers or required adult assistance to play with (i.e., a view-master with slides, two books, and a puzzle). Parents were given the following instruction when they first entered the living room and were told to reinforce the attractive toys prohibition rule whenever the dyad was in this room: "The room we are about to enter has a shelf with toys on it. Please point them out as off-limits to your child as soon as we enter the room, even if this is not something you would typically do when you do not want your child to touch something." On every occasion the dyad was placed in the living room setting, the "attractive toys prohibition" task was coded. The total time spent in this "don't" context was 62 min at T1 (27 and 35 min during the first and second visit, respectively) and at T2 (35 and 27 min, respectively).

Behavioral coding measures

Teams of graduate and undergraduate students independently observed and coded the video recordings of each visit. All parenting dimensions in the present study were coded by different coding teams.

Parental practices ("do" context)

A coding system was developed to assess the parenting dimensions of controlling parenting (derived from Hastings 1996; Joussemet et al. 2014; Rubin and McKinnon 1994; Soenens and Vansteenkiste 2010) and autonomy support (derived from Frodi et al. 1985; Grolnick and Ryan 1989; Joussemet et al. 2014) when the toddlers were 2 years old. This continuous coding served to assess parental disciplinary practices during the T1 "do" clean-up tasks (14 min in total; 7 min per visit), whereby each behavioral code was marked as being present or absent in each 30-second segment.

Controlling parenting This coding system consisted of computing the sum of four parental practices, derived from two coding schemes (Hastings 1996; Rubin and McKinnon 1994) and from theoretical operationalization of this construct (Barber et al. 2012; Deci and Ryan 2008b; Joussemet et al. 2014; Vostanis et al. 1994). The *Physical Force* code [two-way random effects intra-class correlation (ICC) = 0.90; Shrout and Fleiss 1979] was coded each time the parent held the child's hand/arm or held the child down as a way to make him/her clean-up. *Threaten/Punish* (ICC = 0.98) was coded whenever the parent suggested a negative outcome if the child didn't pick up toys (e.g., "Do you need a time-out", "If you don't do this now you can't play later", "OK, no treat for you"). The *Criticism* code (ICC = 0.94) reflected parents using insults, criticism, sarcasm regarding the child or his/her cleaning behaviors. In addition, based on SDT, which identifies expected rewards as controlling, a *Bribing* code (ICC = 0.96) was given whenever a parent tried to convince his/her child to pick up the toys by promising a positive outcome after the clean-up.

Autonomy support This exploratory coding system consisted of the sum of five parental practices thought to represent support for a toddler's autonomy in a "do" discipline context. The first three were based on the classical definition of autonomy support (Koestner et al. 1984). Offering a rationale, choice, and using non-controlling language are typical elements used to operationalize autonomy support.[1] In the present study, *Rationale* (ICC = 0.85) was coded when the parent gave meaningful reasons for cleaning up (e.g., "it's important to clean up to make it all nice in here, to have more space"). In the *Choice Provision* code (ICC = 0.78), the parent encouraged the child to make choices or bring his/her input in the manner in which the task is achieved. *Suggestion* (ICC = 0.85) was coded as a form of non-controlling language, when parents ask gently (e.g., "Can you put this away? Let's clean-up"), rather than giving orders (e.g., "Put this block in the bin").

The following two practices were coded to explore other ways parents may attempt to support a toddler's autonomy. The *Describe* code (ICC = 0.83) was scored whenever the parent pointed to a perceived problem, gave information as to this issue without suggesting any actions, in an impersonal manner (e.g., "There are blocks left in the corner"). Describing the situation is seen as a non-controlling way to provide information (Faber and Mazlish 1980, 2010; Ginott 1969; Joussemet et al. 2014; Ryan 1982). Similarly, singing a clean-up song was thought to be an informational, impersonal (Ryan 1982) and age-appropriate way of making the clean-up request and/or repeat that request, a putative manifestation of autonomy support toward toddlers. *Sing* code (ICC = 1.00) was given each time the parent sang a "clean-up song".

Committed compliance

The present categorical coding system was adopted from Kochanska and Aksan (1995), in which five child behaviors were coded (Kochanska 2000). The same compliance codes were used at T1 and T2. During all "do" and "don't" periods (respectively 14 and 62 min each year), one of the five compliance codes was given in each 30-s segment (Cohen's Kappa = 0.86 and 0.78 at T1 and T2, respectively). *Committed Compliance* codes depict the child's full endorsement of maternal agenda, embracing the task wholeheartedly. The maternal agenda functions as the child's own; the child spontaneously conforms to parental demand without parental intervention. Specifically, the child stays on task with very few or no maternal directives; s/he complies to the general directive through most of the segment. The child does not appear to need immediate maternal interventions/prompts to maintain task orientation; s/he has clearly accepted the task as his/her own and is actively involved (Kochanska 2000). Although situational compliance, passive noncompliance, overt resistance and defiance were coded, they were not used in the present study as they are not specifically

[1] Though empathy is commonly used when defining autonomy support, this element was not coded, as it is a way, for mothers, to react to manifestations of children's distress and never used as a way to introduce the clean-up task or to solicit cooperation. Instead, the acknowledgment of a child's feelings seemed to be used reactively rather than proactively, to diffuse/calm emotional outburst.

related to rule internalization (e.g., Kochanska and Aksan 1995; Kochanska et al. 2001).

Parent reports

The primary caregiver also filled-out questionnaire measures during the lab visits. While the socio-demographic measure was completed when participating children were both 2 and 3.5 years old, the child temperament measure was collected when they were 2 years old.

Socio-demographic information

Some socio-demographic information was collected when children were 2 years old. The child's age (months at visit 1, T1) and sex, the parent's gender, ethnic background, marital status, education level, as well as the family's income information were used in the present study. Additional information was collected when children were 3.5 years old and allowed to assess changes in marital status and whether there were siblings at home.

Child temperament

The Early Child Behavior Questionnaire (ECBQ; Putnam et al. 2006) was used as a measure of children's temperament, when they were 2 years old. This is a 201 item scale, where parents rate the frequency of specific child behaviors over the previous 2 weeks, from 0 (*never*) to 7 (*always*). The ECBQ yields three factors in reactivity and self-regulation: Negative affectivity, effortful control and surgency/extraversion (Putnam et al. 2006). Negative affectivity represents reactivity and proneness to distress (e.g., anger, sadness, fear). Effortful control delineates self-regulation tendencies, which serve to act upon one's reactive tendencies (Rothbart 2011). Operating through attention, effortful control can decrease or increase temperamental reactivity (onset, intensity or duration), and thus reflects the child's temperamental ability to suppress a dominant response in order to perform a subdominant response (Rothbart 2011). Finally, surgency is similar to adults' personality factor of extraversion (Rothbart 2011). It includes approach behaviors, impulsivity, high-intensity pleasure (sensation seeking) and high activity level. The ECBQ has shown good internal coherence, test–retest reliability and validity (Goldsmith 1996; Kochanska and Knaack 2003; Lemery et al. 1999; Putnam et al. 2006). Descriptive statistics can be found in Table 1.

Results

Data preparation

For each observational code, a total proportion score was calculated. For each visit, the behavioral codes were summed and then divided by the total number of interval segments in the visit. This yields a behavioral code average for each visit, each year. Since all codes were consistent across the two laboratory visits (i.e., their *SDs* fell in a similar range at both visits, each year), proportion scores were calculated by averaging each code across the two visits, on each year. There was a committed compliance score in each context ("do" and "don't") of each collection year (T1 and T2; four variables), while there were nine parental codes (i.e., physical force, threaten/punish, criticism, bribing, rationale, choice, suggestions, describe, clean-up song) at T1.

Normal distribution analyses were conducted. Out of these 13 proportion scores, six were transformed using either log or squared root analyses to ascertain a normal distribution (±3.00 skewness and kurtosis; Kline 1998). Extreme score analyses (univariate and multivariate) were also conducted. Univariate extreme scores were found in nine proportion scores, for which all data beyond their respective limit score were replaced with their limit score (Tabachnick and Fidell 2001). There were no participants who had multivariate extreme scores beyond the accepted limit, $\chi^2_{\text{critical}}(16) = 39.25$, $p < .001$ (Tabachnick and Fidell 2001).

Finally, the parenting variables of AS and controlling parenting were created by summing their respective behavior codes. Confirmatory factor analyses (CFA) using structural equation modeling (SEM) in Amos 24.0 were conducted on both parenting variables and showed a good fit for both, autonomy support: χ^2 index(5) = 1.05, $p = .96$, CFI = 1.00, TLI = 3.03, RMSEA <0.001 and controlling parenting: χ^2 index(2) = 1.19, $p = .55$, CFI = 1.00, TLI = 1.15, RMSEA <0.001. The committed compliance scores were calculated by averaging the committed compliance scores across both contexts ("do" and "don't") each year, thus creating one committed compliance score per collection year. Moreover, all continuous variable (predictors, confounds, outcomes) were standardized.

Data imputation

After comparing our complete and incomplete data on key demographic variables, our data was found to be missing at completely random, Little's MCAR test: $\chi^2(43) = 43.85$, p = .44 (Little and Rubin 1989). To address attrition, a multiple imputation by chained equations (SPSS) imputed missing values on covariates for T2 participants ($n = 85$).

Table 1 Descriptive statistics

	N	Mean	Std. deviation	Minimum	Maximum
Committed compliance—T1	85	0.52	0.17	0.08	0.97
Committed compliance—T2	85	0.57	0.19	0.07	0.97
Ethnic background	83				
1. First nations	0	0.00%			
2. Caucasian	64	75.29%			
3. Asian	4	4.71%			
4. Black	3	3.53%			
5. Mixed-other	11	12.94%			
6. Ethnicity disclosure refusal	1	1.18%			
Current employment	85				
1. Homemaker	27	31.76%			
2. Working part-time	24	28.24%			
3. Working full-time	25	29.41%			
4. Retired	0	0.00%			
5. Other	4	4.71%			
6. Maternity leave	5	5.88%			
Change in marital status in the last 18 months (T1 to T2)	85				
1. Yes	6	7.06%			
2. No	79	92.94%			
Parent's education	83				
1. Not finished high school	1	1.18%			
2. High school/G.E.D.	12	14.12%			
3. College/technical training	19	22.35%			
4. Undergraduate university degree	32	37.65%			
5. Graduate university degree	18	21.18%			
Family income	82	3.18	1.22	1.00	5.00
Effortful control	77	4.68	0.57	3.17	5.88
Autonomy support	85	0.50	0.25	0.00	1.01
Controlling parenting	85	0.15	0.15	0.00	0.64

Fewer than 10% of observations were imputed. We created 100 datasets, and conducted regression analyses that pooled results from them.

Preliminary analyses

Temperament and socio-demographic covariates

Next, we evaluated the association between all our variables. Table 2 illustrates zero-order correlations between all of the study's main variables.

To predict committed compliance change between T1 and T2 (2 and 3.5 years old), T1 committed compliance was included as a covariate in the principal regression model. Statistically, the remainder variance in T2 committed compliance thus relates to any changes in this variable between T1 and T2. As more temperamentally sensitive, impulsive and thrill seeking children elicits more parental control (i.e., negative affectivity, surgency/extraversion; Grolnick 2002; Rothbart 2011) and children's temperamental ability to suppress a dominant response to perform a subdominant response (i.e., effortful control; Rothbart 2011) aid in self-regulation, these temperamental characteristics were also included as covariates in our model. Finally, socio-demographic variables previously found to facilitate or strain parent–child interaction were also added (parental education and employment, total family income, ethnic background, change in marital status between 2 and 3.5 years old).

Main analyses

We examined how parental practices during a clean-up task (T1) predict changes in children's committed compliance. A linear regression was conducted predicting 3.5-year-old's committed compliance (T2) as a dependent variable (see Table 3), and included 2-year-old's committed compliance and all four covariates.

Table 2 Bivariate associations among study variables

		1	2	3	4	5	6	7	8	9	10	11
1	Committed compliance—T1											
2	Committed—T2	0.47	<0.001									
3	Ethnic background	−0.04	0.70	−0.24	0.03							
4	Current employment	0.21	0.05	0.06	0.56	0.16	0.15					
5	Family income	0.24	0.03	0.18	0.11	−0.09	0.45	0.08	0.46			
6	Marital status change	−0.15	0.17	−0.09	0.43	0.05	0.67	−0.13	0.23	0.20	0.08	
7	Parent's education	0.07	0.55	0.13	0.23	−0.04	0.69	−0.01	0.93	0.40	<0.001	0.09	0.42					
8	Extraversion/surgency	−0.19	0.09	−0.23	0.04	0.13	0.26	−0.15	0.20	−0.19	0.10	0.04	0.75	−0.13	0.28			
9	Negative affectivity	0.05	0.69	−0.02	0.83	0.18	0.11	−0.20	0.09	−0.05	0.66	0.03	0.82	−0.11	0.34	0.31	0.006	
10	Effortful control	0.32	0.005	0.15	0.19	−0.02	0.84	0.25	0.03	0.23	0.05	−0.10	0.39	−0.02	0.87	−0.21	0.06	−0.10	0.37		
11	Autonomy support	0.04	0.70	0.26	0.02	−0.12	0.29	−0.32	0.003	0.04	0.72	0.04	0.69	0.06	0.59	0.04	0.72	0.18	0.11	−0.03	0.80	
12	Controlling parenting	−0.42	<0.001	−0.31	0.004	−0.09	0.40	−0.11	0.32	−0.15	0.18	−0.15	0.17	0.00	0.98	0.20	0.08	0.05	0.68	−0.11	0.35	0.11	0.33

All continous variables (outcome and predictors) were entered as Z scores

Table 3 Results from a linear regression predicting committed compliance change over time

	Committed compliance (3.5 years old)	
	β	*p*
Covariates		
Committed compliance (2 years old)	0.32	0.005
Ethnic background	−0.16	0.02
Current employment	0.05	0.48
Family income	−0.01	0.96
Marital status change	−0.25	0.52
Parent's education	0.08	0.44
Surgency/extraversion	−0.08	0.45
Negative affectivity	0.01	0.93
Effortful control	−0.01	0.92
Predictors		
Autonomy support	0.27	0.008
Controlling parenting	−0.22	0.05
R^2	0.39	<0.001

All continuous variables (outcome and predictors) were entered as Z scores; β represents standardized coefficient and effect sizes (calculated when Z score outcomes are in model); covariates: T1 (2 years old) committed compliance, ethnic background, parent education, surgency/extraversion, negative affectivity and effortful control; T2 (3.5 years old) current employment, family income, marital status change (between T2 and T1); Predictors (2 years old): autonomy support (REASON, choice, suggest, describe, song) and controlling parenting (physical force, threat/punish, criticism, bribe)

The model predicting T2 committed compliance was significant, $R^2 = 0.39$, $F(11,73) = 4.28$, $p < .001$, and explained 39% of the variance in changes in committed compliance over 1.5 years. As hypothesized, AS parenting predicted improvements in rule internalization,*Stand.* $\beta = 0.27$, $p = .008$, over time. Thus, AS parenting holds moderate sized effects on rule internalization improvements over time.[2] There was also a reverse significant effect for controlling parenting, which predicted a small deterioration in child self-regulation over time, *Stand* $\beta = -0.22$, $p = .05$.

A follow-up analysis was generated to improve understanding of the significant categorical ethnicity variable effect (see Table 4).Because our sample did not have any representations of the first nations category, it could not be entered as a category in our model. A binary variable for Asian, African-American, mixed/other ethnicity and ethnicity disclosure refusal categories were included in the model. The binary Caucasian category was omitted

[2] With standardized coefficients, values of 0.10, 0.30 and 0.50 represent small, medium and large effect sizes (Cohen 1988).

Table 4 Results from a linear regression predicting committed compliance change over time

	Committed compliance (3.5 years old)	
	β	*p*
Covariates		
Committed compliance (2 years old)	0.32	0.008
Asian ethnicity	−0.54	0.26
African-American ethnicity	−0.25	0.67
Mixed/other ethnicity	−0.61	0.04
Ethnicity disclosure refusal	− 0.55	0.59
Current employment	0.04	0.60
Family income	−0.01	0.91
Marital status change	−0.21	0.61
Parent's education	0.08	0.48
Surgency/extraversion	− 0.08	0.45
Negative affectivity	−0.01	0.90
Effortful control	−0.02	0.88
Predictors		
Autonomy support	0.28	0.01
Controlling parenting	−0.22	0.05
R^2	0.41	<0.001

All continuous variables (outcome and predictors) were entered as Z scores; β represents standardized coefficient and effect sizes (calculated when Z score outcomes are in model); covariates: T1 (2 years old) committed compliance, each ethnic background binary category (with Caucasian ethnicity set as comparison category), parent education, surgency/extraversion, negative affectivity and effortful control; T2 (3.5 years old) current employment, family income, marital status change (between T2 and T1); predictors (2 years old): autonomy support (reason, choice, suggest, describe, song) and controlling parenting (physical force, threat/punish, criticism, bribe)

from the model in order to render it our comparison group for ethnicity categories entered in our model. The same previous findings were found in this model, $R^2 = 0.41$, $F(14,70) = 3.44$, $p < .001$, and autonomy support, *Stand* $\beta = 0.28$, $p = .01$, and controlling parenting, *Stand* $\beta = -0.22$, $p = .05$, predictor variables. With regards to ethnicity, results reveal that having a mixed/other ethnicity category predicted a large diminution in committed compliance over time, *Stand* $\beta = -0.61$, $p = .04$. No other ethnicity category had significant results.

Discussion

In the present study, we hoped to better understand which disciplinary practice would prove useful for promoting children's rule internalization to parental requests and prohibitions ("dos" and "don'ts") as they are essential for children's social integration and psychosocial adjustment. As expected, AS parenting predicted increases in rule internalization (i.e., committed compliance; Kochanska et al. 2001), as measured across socialization contexts, over a period of 1.5 years. The more parents were observed as AS when their toddlers were 2 years old, the more their toddlers had improved in wholehearted compliance to parental requests at 3.5 years of age. Thus, when requesting an important yet mundane and frustrating task to toddlers, using a combination of (1) explanations for the "why" it is important to do the task, (2) providing some choices in the manner in which it can be done, (3) using non-controlling language, (4) providing simple, non-personal descriptions of the problems (e.g., there are blocks in the corner), and using an impersonal and structuring song about the task (clean-up song) seem to foster gains in toddlers' rule internalization. Also as expected, controlling parenting practices (i.e., physically forcing the child to comply, using threats and punishments, criticism and/or sarcasm, and bribes) was associated with small reductions in committed compliance over time. The more parents were observed as controlling when their toddlers were 2 years old, the less their toddlers complied wholeheartedly to their parent's requests and prohibitions at 3.5 years old.

The link found between AS parenting and child rule internalization are similar to those found with school-aged children. With older children, autonomy support is associated with higher quality internalization and greater integration of important but uninteresting activities (e.g., Joussemet et al. 2004). AS parenting has also been shown to be associated with higher teacher-rated child competence, better standardized achievement scores and grades, as well as better child psychosocial adjustment and children perceiving themselves as more competent (e.g., Grolnick and Ryan 1989). AS parenting has also been found to predict better social and academic adjustment, reading achievement, and interest-focused academic engagement (Joussemet et al. 2005; Roth et al. 2009). With regards to early childhood, Frodi et al. (1985) reported that more supportive tactics with infants foster mastery motivation and competence development between the ages of 12 and 20 months of age. Similarly, maternal autonomy support during late infancy has recently been studied in game-like tasks. It was found to be a predictor of toddlers' security of attachment (Whipple et al. 2011) and later executive functioning (Bernier et al. 2010).

Interestingly, in our study, the association between AS parenting and improvement in committed compliance were present above and beyond toddlers' effortful control, amongst other covariates. This indicates that, regardless of toddlers' initial ability to self-regulate, AS parenting improves committed compliance over time. Kim et al. (2013) found that 3- and 4-year-old children's self-regulation in emotionally frustrating tasks (i.e., behavioral effortful control in delay of gratification

tasks) singularly predicted child behavior problems, while regulation in an emotionally neutral context (e.g., a motor inhibition tasks) were unrelated to this outcome. The authors attributed this differential impact to the context in which self-regulation was taking place (i.e., "hot", emotionally charged vs. "cold", neutral setting). The present study suggests that supporting toddlers' autonomy in a challenging, "hot" socialization context fosters improvements in committed compliance, a form of behavioral self-regulation (Kochanska et al. 2001) and may protect children from later behavioral problems. Future studies would be needed to directly study this putative link.

The detrimental effects of controlling practices were similar to those found in previous toddler studies. For instance, Kochanska and Aksan (1995) have found that negative control ("do" and "don't") was negatively related to committed compliance. Assessing controlling parenting precisely rather than using a broader "negative" parenting variables deepens our understanding about this specific parenting behavior (controlling parenting; Grolnick and Pomerantz 2009), which has been previously shown to impede on autonomous motivations, competence development and hinder regulation (e.g., Frodi et al. 1985; Ryan and Deci 2000a).

Based on motivational research (SDT; Deci and Ryan 1980, 1985, 2000, 2008b), we assessed parental practices specifically tied to the autonomy granting versus thwarting dimension. We excluded behaviors falling on the warmth-hostility dimension to avoid conflating these distinct construct and confounding interpretation. Moreover, since these parenting constructs were measured in a specific parenting context (requests only), the results suggest that adopting an AS approach, even when making potentially frustrating requests to toddlers (such as cleaning up toys), contributes to facilitating their general rule internalization capacity.

Finally, our data suggested that being from mixed/other ethnicity category is associated with a large deterioration in committed compliance change between T1 and T2. This was unexpected, and unfortunately the label 'mixed/other' makes it very difficult to identify the specific ethnicity or metis combination which drives this association. It is clear however that, when compared to Caucasian families, being from Asian or African-American descent does not transcribe into changes in committed compliance. All other confounds in our model did not hold any predictive power on developmental self-regulation changes above and beyond autonomy supportive and controlling parenting practices.

Strength and limitations

Some characteristics of this study should be taken into account when interpreting its findings. First, as with all longitudinal studies, there is a possibility that selection effects partly explain the findings, as families who participate in intensive longitudinal observational research may be different than those who do not. Other limitations relate to the possibility that factors other than the parenting practices studied explain the differences in children committed compliance over time such as children's security of attachment and language development which were not examined. Likewise, while the ethnic category label "mixed/other" is predictive in large deterioration in committed compliance change as compared to those of Caucasian descent, it is impossible to specifically pinpoint which metis combination or 'other' ethnicity that drives this association. Also, it is possible that other, untested confounds specific to the environment of the dyads from this ethnic subcategory is explaining this association. To address these limitations, we controlled for a careful selection of confounders. The quality of observational data, the strong methodological construction of the study where parent–child dyads were invited to two visits on each data collection year, and the validity of observational coding reassure us that our findings are valid. Still, the correlational design prevents causal inferences. Beyond the scope of these limitations, the research design of this study is robust, as it is set in a longitudinal framework using primarily observational measures and the findings are generalizable to both socialization contexts [i.e., parental requests ("dos") and prohibitions ("don'ts")] with toddlers.

Future studies

The present study points to several future research directions. For instance, it would be interesting to develop ways to code AS and controlling practices in "don't" settings, such as delay of gratification tasks, which would further insight on the role of the need for autonomy on the internalization process. Distinguishing externally controlling (e.g., screaming) from internally controlling parenting (e.g., love withdrawal; see Soenens and Vansteenkiste 2010) in both discipline contexts ("do", "don't") would probably be informative. Observing toddlers' compliance when interacting with other socialization agents, such as daycare educators, is also another interesting research avenue. It would then be possible to verify if effects are agent-specific or generalizable. Also, assessing AS parenting in Kochanska's later internalization task, where no parent is monitoring the 4.5 year-old's conduct, could further corroborate our findings. Similarly, by following toddler participants until they become school-aged children, it would be possible to

assess children's level of self-determination, by using self-reports. A wealth of research measuring the reasons why individuals follow rules has identified optimal motivational styles, and their antecedents and consequences (e.g., Deci and Ryan 2008a). Also, SDT posits that optimal functioning and well-being occurs when all three psychological needs are met (e.g., Deci et al. 1993, 2013; Deci and Ryan 2008b). Future studies could assess all three needs in toddler population and examine their interplay to further our understanding about toddlers' internalization processes.

As fulfilling the parent–child relationship may be, this bond comes with numerous challenges, perhaps especially when encountering disciplinary contexts. Better understanding (mal)adaptive disciplinary practices and their relationship to longitudinal improvements in rule internalization and behavioral self-regulation is crucial. In contrast to controlling forms of discipline, which reduces rule internalization, AS practices seem to be part of a beneficial alternative disciplinary approach. As parenting is a malleable determinant of child adjustment, empirical efforts should be pursued and interventions should be provided to help parents support rather than thwart their toddler's need for autonomy. Prevention programs offered to parents of the general population, early in children's lives, hold potential to take the lead toward promoting children's self-control and well-being.

Acknowledgements We thank David R. Forman who gave us access to observational data videos, and thus enabled us to code his observational data for this study.

Funding This study was funded by Fonds de Recherche du Québec-Société et Culture (307123) & Fonds de Recherche du Québec-Société et Culture (112983).

Compliance with ethical standards

Conflict of interest All authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

References

Barber, B. K., Xia, M., Olsen, J. A., McNeely, C. A., & Bose, K. (2012). Feeling disrespected by parents: Refining the measurement and understanding of psychological control. *Journal of Adolescence, 35*(2), 273–287. doi:10.1016/j.adolescence.2011.10.010.

Bernier, A., Carlson, S. M., Deschênes, M., & Matte-Gagné, C. (2012). Social factors in the development of early executive functioning: A closer look at the caregiving environment. *Developmental Science, 15*(1), 12–24. doi:10.1111/j.1467-7687.2011.01093.x.

Bernier, A., Carlson, S. M., & Whipple, N. (2010). From external regulation to self-regulation: Early parenting precursors of young children's executive functioning. *Child Development, 81*(1), 326–339. doi:10.1111/j.1467-8624.2009.01397.x.

Blandon, A. Y., & Volling, B. L. (2008). Parental gentle guidance and children's compliance within the family: A replication study. *Journal of Family Psychology, 22*(3), 355–366. doi:10.1037/0893-3200.22.3.355.

Calkins, S. D., Smith, C. L., Gill, K. L., & Johnson, M. C. (1998). Maternal interactive style across contexts: Relations to emotional, behavioral and physiological regulation during toddlerhood. *Social Development, 7*(3), 350–369. doi:10.1111/1467-9507.00072.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd edn.). Hillsdale, NJ: Lawrence Erlbaum Associates Publishers.

Deci, E. L., Driver, R. E., Hotchkiss, L., Robbins, R. J., & Wilson, I. M. (1993). The relation of mothers′ controlling vocalizations to children′s intrinsic motivation. *Journal of Experimental Child Psychology, 55*(2), 151–162. doi:10.1006/jecp.1993.1008.

Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. R. (1994). Facilitating internalization: The self-determination theory perspective. *Journal of Personality, 62*(1), 119–142. doi:10.1111/j.1467-6494.1994.tb00797.x.

Deci, E. L., & Ryan, R. M. (1980). Self-determination theory: When mind mediates behavior. *The Journal of Mind and Behavior, 1*(1), 33–43.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227–268. doi:10.1207/S15327965PLI1104_01.

Deci, E. L., & Ryan, R. M. (2008a). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology/Psychologie Canadienne, 49*(1), 14–23. doi:10.1037/0708-5591.49.1.14.

Deci, E. L., & Ryan, R. M. (2008b). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne, 49*(3), 182–185. doi:10.1037/a0012801.

Deci, E. L., Ryan, R. M., & Guay, F. (2013). Self-determination theory and actualization of human potential. In D. McInerney, H. Marsh, R. Craven & F. Guay (Eds.), *Theory driving research: New wave perspectives on self processes and human development* (pp. 109–133). Charlotte, NC: Information Age Press.

Dix, T., Stewart, A. D., Gershoff, E. T., & Day, W. H. (2007). Autonomy and children's reactions to being controlled: Evidence that both compliance and defiance may be positive markers in early development. *Child Development, 78*(4), 1204–1221. doi:10.1111/j.1467-8624.2007.01061.x.

Faber, A., & Mazlish, E. (1980). *How to talk so kids will listen and listen so kids will talk*. New York: Perrenial Currents.

Faber, A., & Mazlish, E. (2010). *How to talk so kids will listen; Group workshop kit*. New York: Faber/Mazlish Workshops, LLC.

Feldman, R., & Klein, P. S. (2003). Toddlers' self-regulated compliance to mothers, caregivers, and fathers: Implications for theories of socialization. *Developmental Psychology, 39*(4), 680–692. doi:10.1037/0012-1649.39.4.680.

Feng, X., Shaw, D. S., & Moilanen, K. L. (2011). Parental negative control moderates the shyness–emotion regulation pathway to school-age internalizing symptoms. *Journal of Abnormal Child Psychology, 39*(3), 425–436. doi:10.1007/s10802-010-9469-z.

Forman, D. R. (2007). Autonomy, compliance, and internalization. In C. A. Brownell & C. B. Kopp (Eds.), *Transitions in early socioemotional development: The toddler years* (pp. 285–319). New York: Guildford Press.

Frodi, A., Bridges, L., & Grolnick, W. (1985). Correlates of mastery-related behavior: A short-term longitudinal study of infants in their second year. *Child Development, 56*(5), 1291–1298. doi:10.2307/1130244.

Ginott, H. (1969). *Between parent and child*. New York: Avon.

Goldsmith, H. H. (1996). Studying temperament via construction of the Toddler Behavior Assessment Questionnaire. *Child Development, 67*(1), 218–235. doi:10.1111/j.1467-8624.1996.tb01730.x.

Gosselin, M.-P. M., & Forman, D. R. (2012). Attention-seeking during caregiver unavailability and collaboration at age 2. *Child Development, 83*(2), 712–727. doi:10.1111/j.1467-8624.2011.01716.x.

Gralinski, J. H., & Kopp, C. B. (1993). Everyday rules for behavior: Mothers' requests to young children. *Developmental Psychology, 29*(3), 573–584. doi:10.1037/0012-1649.29.3.573.

Grolnick, W. S. (2002). *The psychology of parental control: How well-meant parenting backfires*. Mahwah: Lawrence Erlbaum Associates, Inc.

Grolnick, W. S., Gurland, S. T., DeCourcey, W., & Jacob, K. (2002). Antecedents and consequences of mothers' autonomy support: An experimental investigation. *Developmental Psychology, 38*(1), 143–155. doi:10.1037/0012-1649.38.1.143.

Grolnick, W. S., & Pomerantz, E. M. (2009). Issues and challenges in studying parental control: Toward a new conceptualization. *Child Development Perspectives, 3*(3), 165–170. doi:10.1111/j.1750-8606.2009.00099.x.

Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology, 81*(2), 143–154. doi:10.1037/0022-0663.81.2.143.

Hammond, S. I., Müller, U., Carpendale, J. I. M., Bibok, M. B., & Liebermann-Finestone, D. P. (2012). The effects of parental scaffolding on preschoolers' executive function. *Developmental Psychology, 48*(1), 271–281. doi:10.1037/a0025519.

Hastings, P. D. (1996). *Mother-child teaching and control scales*. Unpublished coding manual. Department of Psychology. University of Waterloo.

Joussemet, M., Koestner, R., Lekes, N., & Houlfort, N. (2004). Introducing uninteresting tasks to children: A comparison of the effects of rewards and autonomy support. *Journal of Personality, 72*(1), 139–166. doi:10.1111/j.0022-3506.2004.00259.x.

Joussemet, M., Koestner, R., Lekes, N., & Landry, R. (2005). A longitudinal study of the relationship of maternal autonomy support to children's adjustment and achievement in school. *Journal of Personality, 73*(5), 1215–1236. doi:10.1111/j.1467-6494.2005.00347.x.

Joussemet, M., Landry, R., & Koestner, R. (2008). A self-determination theory perspective on parenting. *Canadian Psychology/Psychologie Canadienne, 49*(3), 194–200. doi:10.1037/a0012754.

Joussemet, M., Mageau, G. A., & Koestner, R. (2014). Promoting optimal parenting and children's mental health: A preliminary evaluation of the 'how-to' parenting program. *Journal of Child and Family Studies, 23*(6), 949–964. doi:10.1007/s10826-013-9751-0.

Kim, S., & Kochanska, G. (2012). Child temperament moderates effects of parent–child mutuality on self-regulation: A relationship-based path for emotionally negative infants. *Child Development, 83*(4), 1275–1289. doi:10.1111/j.1467-8624.2012.01778.x.

Kim, S., Nordling, J. K., Yoon, J. E., Boldt, L. J., & Kochanska, G. (2013). Effortful control in "hot" and "cool" tasks differentially predicts children's behavior problems and academic performance. *Journal of Abnormal Child Psychology, 41*(1), 43–56. doi:10.1007/s10802-012-9661-4.

Kline, R. B. (1998). *Principales and practices of structural equation modeling*. New York: Guildford Press.

Kochanska, G. (1995). Children's temperament, mothers' discipline, and security of attachment: Multiple pathways to emerging internalization. *Child Development, 66*(3), 597–615. doi:10.1111/j.1467-8624.1995.tb00892.x.

Kochanska, G. (1997). Multiple pathways to conscience for children with different temperaments: From toddlerhood to age 5. *Developmental Psychology, 33*(2), 228–240. doi:10.1037/0012-1649.33.2.228.

Kochanska, G. (2000). *Parent-child study: Child compliance and mother discipline project*. Unpublished Coding/Entry. Department of Psychology. University of Iowa.

Kochanska, G., & Aksan, N. (1995). Mother-child mutually positive affect, the quality of child compliance to requests and prohibitions, and maternal control as correlates of early internalization. *Child Development, 66*(1), 236–254. doi:10.1111/j.1467-8624.1995.tb00868.x.

Kochanska, G., Coy, K. C., & Murray, K. T. (2001). The development of self-regulation in the first four years of life. *Child Development, 72*(4), 1091–1111. doi:10.1111/1467-8624.00336.

Kochanska, G., & Knaack, A. (2003). Effortful control as a personality characteristic of young children: Antecedents, correlates, and consequences. *Journal of Personality, 71*(6), 1087–1112. doi:10.1111/1467-6494.7106008.

Kochanska, G., Tjebkes, J. L., & Forman, D. R. (1998). Children's emerging regulation of conduct: Restraint, compliance, and internalization from infancy to the second year. *Child Development, 69*(5), 1378–1389. doi:10.1111/j.1467-8624.1998.tb06218.x.

Koestner, R., Ryan, R. M., Bernieri, F., & Holt, K. (1984). Setting limits on children's behavior: The differential effects of controlling vs. informational styles on intrinsic motivation and creativity. *Journal of Personality, 52*(3), 233–248. doi:10.1111/j.1467-6494.1984.tb00879.x.

Kopp, C. B. (1982). Antecedents of self-regulation: A developmental perspective. *Developmental Psychology, 18*(2), 199–214. doi:10.1037/0012-1649.18.2.199.

Kuczynski, L., & Kochanska, G. (1990). Development of children's noncompliance strategies from toddlerhood to age 5. *Developmental Psychology, 26*(3), 398–408. doi:10.1037/0012-1649.26.3.398.

Lemery, K. S., Goldsmith, H. H., Klinnert, M. D., & Mrazek, D. A. (1999). Developmental models of infant and childhood temperament. *Developmental Psychology, 35*(1), 189–204. doi:10.1037/0012-1649.35.1.189.

Lepper, M. R. (1983). Social-control processes and the internalization of social values: An attributional perspective. In E. T. Higgins, D. N. Ruble & W. W. Hartup (Eds.), *Social cognition and social development*. New York: Cambridge University Press.

Little, R. J., & Rubin, D. B. (1989). The analysis of social science data with missing values. *Sociological Methods & Research, 18*(2–3), 292–326.

Maccoby, E. E. (1984). Socialization and developmental change. *Child Development, 55*(2), 317–328. doi:10.2307/1129945.

Martens, R., de Brabander, C., Rozendaal, J., Boekaerts, M., & van der Leeden, R. (2010). Inducing mind sets in self-regulated learning with motivational information. *Educational Studies, 36*(3), 311–327. doi:10.1080/03055690903424915.

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons

from research on successful children. *American Psychologist, 53*(2), 205–220. doi:10.1037/0003-066X.53.2.205.

Matte-Gagné, C., Bernier, A., & Gagné, C. (2013). Stability of maternal autonomy support between infancy and preschool. *Age. Social Development, 22*(3), 427–443. doi:10.1111/j.1467-9507.2012.00667.x.

Moreau, E., & Mageau, G. A. (2013). Conséquences et corrélats associés au soutien de l'autonomie dans divers domaines de vie. *Psychologie Française, 58*(3), 195–227. doi:10.1016/j.psfr.2013.03.003.

Nelson, S. K., Kushlev, K., & Lyubomirsky, S. (2014). The pains and pleasures of parenting: When, why, and how is parenthood associated with more or less well-being? *Psychological Bulletin, 140*(3), 846–895. doi:10.1037/a0035444.

Parpal, M., & Maccoby, E. E. (1985). Maternal responsiveness and subsequent child compliance. *Child Development, 56*(5), 1326–1334. doi:10.2307/1130247.

Putnam, S. P., Gartstein, M. A., & Rothbart, M. K. (2006). Measurement of fine-grained aspects of toddler temperament: The Early Childhood Behavior Questionnaire. *Infant Behavior and Development, 29*(3), 386–401. doi:10.1016/j.infbeh.2006.01.004.

Rakoczy, K., Klieme, E., Bürgermeister, A., & Harks, B. (2008). The interplay between student evaluation and instruction. *Zeitschrift für Psychologie /Journal of Psychology, 216*(2), 111–124. doi:10.1027/0044-3409.216.2.111.

Roth, G., Assor, A., Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The emotional and academic consequences of parental conditional regard: Comparing conditional positive regard, conditional negative regard, and autonomy support as parenting practices. *Developmental Psychology, 45*(4), 1119–1142. doi:10.1037/a0015272.

Rothbart, M. K. (2011). *Becoming who we are: Temperament and personality in development*. New York: Guildford Press.

Rubin, K. H., & McKinnon, J. (1994). *The parental warmth and control scale*. Unpublished coding manual. Department of Psychology. University of Waterloo.

Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology, 43*(3), 450–461. doi:10.1037/0022-3514.43.3.450.

Ryan, R. M., & Deci, E. L. (2000a). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78. doi:10.1037/0003-066X.55.1.68.

Ryan, R. M., & Deci, E. L. (2000b). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological Inquiry, 11*(4), 319–338.

Ryan, R. M., Deci, E. L., Grolnick, W. S., & La Guardia, J. G. (2006). The significance of autonomy and autonomy support in psychological development and psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology* (Vol. 1, pp. 795–849). New Jersey: John Wiley & Sons, Inc.

Schafer, R. (1968). *Aspects of internalization*. Madison, CT: International Universities Press, Inc.

Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin, 86*(2), 420–428. doi:10.1037/0033-2909.86.2.420.

Silk, J. S., Morris, A. S., Kanaya, T., & Steinberg, L. (2003). Psychological control and autonomy granting: Opposite ends of a continuum or distinct constructs? *Journal of Research on Adolescence, 13*(1), 113–128. doi:10.1111/1532-7795.1301004.

Skinner, E., Johnson, S., & Snyder, T. (2005). Six Dimensions of parenting: A motivational model. *Parenting: Science and Practice, 5*(2), 175–235. doi:10.1207/s15327922par0502_3.

Soenens, B., & Vansteenkiste, M. (2010). A theoretical upgrade of the concept of parental psychological control: Proposing new insights on the basis of self-determination theory. *Developmental Review, 30*(1), 74–99. doi:10.1016/j.dr.2009.11.001.

Soenens, B., Vansteenkiste, M., Lens, W., Luyckx, K., Goossens, L., Beyers, W., & Ryan, R. M. (2007). Conceptualizing parental autonomy support: Adolescent perceptions of promotion of independence versus promotion of volitional functioning. *Developmental Psychology, 43*(3), 633–646. doi:10.1037/0012-1649.43.3.633.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (5th ed.). Boston: Pearson.

Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration, 23*(3), 263–280. doi:10.1037/a0032359.

Volling, B. L., Blandon, A. Y., & Gorvine, B. J. (2006). Maternal and paternal gentle guidance and young children's compliance from a within-family perspective. *Journal of Family Psychology, 20*(3), 514–525. doi:10.1037/0893-3200.20.3.514.

Vostanis, P., Nicholls, J., & Harrington, R. (1994). Maternal expressed emotion in conduct and emotional disorders of childhood. *Journal of Child Psychology and Psychiatry, 35*(2), 365–376. doi:10.1111/j.1469-7610.1994.tb01168.x.

Whipple, N., Bernier, A., & Mageau, G. A. (2011). A dimensional approach to maternal attachment state of mind: Relations to maternal sensitivity and maternal autonomy support. *Developmental Psychology, 47*(2), 396–403. doi:10.1037/a0021310.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry, 17*(2), 89–100. doi:10.1111/j.1469-7610.1976.tb00381.x.

Zimmer-Gembeck, M. J., Webb, H. J., Thomas, R., & Klag, S. (2015). A new measure of toddler parenting practices and associations with attachment and mothers' sensitivity, competence, and enjoyment of parenting. *Early Child Development and Care, 185*(9), 1422–1436. doi:10.1080/03004430.2014.1001753.

Zuk, S. (2014). *Les pratiques parentales maternelles et la symptomatologie des enfants victimes d'agression sexuelle d'âge préscolaire* (Doctoral dissertation), Université de Montréal. Retrieved from http://hdl.handle.net/1866/10351. Papyrus dissertation and thesis database database.

Developmental Psychology
2017, Vol. 53, No. 9, 1694–1708

© 2017 American Psychological Association
0012-1649/17/$12.00 http://dx.doi.org/10.1037/dev0000369

How Do Parent Expectations Promote Child Academic Achievement in Early Elementary School? A Test of Three Mediators

John Loughlin-Presnal and Karen L. Bierman
The Pennsylvania State University

Using a longitudinal mediation framework and a low-income sample, this study had 2 aims: (a) to model bidirectional associations between parent academic expectations and child academic outcomes from first through fifth grade, and (b) to explore 3 mediators of parental influence: parent involvement in child schooling, child learning behaviors, and child perceived academic competence. Participants included 356 children and their caregivers (89% mothers) recruited from Head Start centers (58% European American, 25% African American, 17% Latino). At each time point (grades 1, 2, 3, 5), parents rated their academic expectations, teachers rated parent involvement and child learning behaviors, and children rated their self-perceptions of their academic competence. Bidirectional longitudinal associations emerged between parent academic expectations and child academic outcomes. Child learning behaviors mediated this association from first to third grade, whereas child perceived academic competence mediated from second to fifth grade. Parallel cross-lagged models replicated these findings with child academic outcomes assessed using a test of reading achievement and teacher ratings of academic performance.

Keywords: academic expectations, academic performance, parent support, self-perception

Supplemental materials: http://dx.doi.org/10.1037/dev0000369.supp

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

As far back as the 1960s, researchers noted that parent academic expectations (e.g., how far parents thought their child would go in school; what grades they anticipated their child would receive) were correlated with the child's future academic attainment (Douglas, 1964). Subsequent research has confirmed that parent expectations are a robust predictor of child academic achievement (Child Trends, 2015). The link emerges early; for example, parent expectations at kindergarten entry predict child reading and math achievement in first grade (Sy & Schulenberg, 2005) and grade-point averages three years later (Gut, Reimann, & Grob, 2013). The influence persists over time; for example, after controlling for child achievement in early elementary school, parent expectations in the third grade predict incremental variance in standardized achievement tests one year later (Halle, Kurtz-Costes, & Mahoney, 1997). In addition, the association is long-lasting; a recent longitudinal analysis revealed a correlation of $r = .25$ between parent academic expectations in first grade and the number of years of education children attained by age 22, controlling for gender, race, family socioeconomic status (SES), and neighborhood (Entwisle, Alexander, & Olson, 2005).

The link between parent academic expectations and child achievement is of particular interest in low-SES families (Froiland, Peterson, & Davidson, 2013; Tynkkynen, Tolvaned, & Salmela-Aro, 2012). Fewer than half of parents making $30,000 or less a year expect their children to complete a college bachelor's degree, compared to 70% of parents with an annual income of $75,000 or more (Child Trends, 2015). Yet, obtaining a bachelor's degree has significant benefits, boosting lifetime net earnings by 43–52% on average, and promoting improved lifelong health and well-being (Adler & Newman, 2002; Kim, Tamborini, & Sakamoto, 2015; Tamborini, Kim, & Sakamoto, 2015). Pursuing education beyond a bachelor's degree also boosts lifetime earnings, but by just 22–28% (Tamborini et al., 2015), suggesting that increasing academic expectations and attainment in low-SES families where expectations are the lowest might meaningfully narrow the income gap. Indeed, empirical work bears this out, with low-income students gaining the most in economic benefits from attending college, relative to their upper-income peers (Brand & Xie, 2010). For this reason, this study focuses on understanding links between parent academic expectations and child academic performance within a sample of low-income families.

In general, family SES and its components (parent education and income) are robust predictors of parent academic expectations (Child Trends, 2015; Davis-Kean, 2005; Englund, Luckner, Whaley, & Egeland, 2004; Neuenschwander, Vida, Garrett, & Eccles, 2007; Sy & Schulenberg, 2005; Tynkkynen et al., 2012; but for an exception, see Hill, 2001). Relative to their higher-SES counterparts, low-SES parents typically have less positive past experience with schools, feel less effective supporting their child's learning, have fewer resources and less social capital to invest in child

This article was published Online First June 22, 2017.

John Loughlin-Presnal and Karen L. Bierman, Department of Psychology, The Pennsylvania State University.

This project was supported by the National Institute of Child Health and Human Development Grants HD046064 and HD43763, and the Institute of Education Sciences Grant R305B090007. The views expressed in this article are ours and do not necessarily represent the granting agencies. Appreciation is expressed to the teachers, students, parents, and program personnel who served as partners in this project in the Huntingdon, Blair, and York County Head Start Programs of Pennsylvania.

Correspondence concerning this article should be addressed to John Loughlin-Presnal, The Pennsylvania State University, 228 Moore Building, University Park, PA 16802. E-mail: jel276@psu.edu

learning, and limited access to high-quality schools and teachers—all factors likely contributing to diminished expectations for their child's academic success (Davis-Kean, 2005; Hill & Taylor, 2004; Neuenschwander et al., 2007).

Researchers have speculated that more intensive study in low-income families might clarify the pathways that link parent academic expectations with child achievement, enriching developmental understanding of these links and potentially informing the design of intervention strategies aimed at reducing educational disparities (Child Trends, 2015; Entwisle et al., 2005; Loughlin-Presnal & Bierman, in press; Purtell & McLoyd, 2013; Tynkkynen et al., 2012). One hypothesis is that high academic expectations motivate parent involvement in child learning at home and at school, thereby promoting child achievement (Chao, 2000; Sy & Schulenburg, 2005). Alternatively, high academic expectations may shape child attitudes and motivations, reinforcing effortful learning behaviors (Briley, Harden, & Tucker-Drob, 2014) and boosting child academic aspirations and self-perceptions of their academic competence (Froiland et al., 2013; Neuenschwander et al., 2007). Emerging research suggests that the influence of various mediators may change developmentally (Briley et al., 2014), creating a need for systematic study of their influence across the elementary years. This study had two aims: (a) to model bidirectional associations between parent academic expectations and child academic performance from first through fifth grade, and (b) to explore three mediators of parental influence (parent involvement, child learning behaviors, and child perceived academic competence), examining potential developmental shifts over the course of elementary school. Prior research has identified social class differences in the pathways linking parent beliefs, behaviors, and child achievement (Davis-Kean, 2005; Hill, 2001). This study focused on low-income families, to better understand the processes the might account for variations in child achievement in a segment of the population at risk for educational disparities.

Parent Academic Expectations and Child Academic Performance: Bidirectional Links

Multiple developmental studies have shown that parent academic expectations in early elementary school predict later child academic achievement (Entwisle et al., 2005; Gut et al., 2013; Sy & Schulenberg, 2005). Most of these studies controlled for confounding factors, such as family SES, and lend credence to the hypothesis that parental expectations influence child academic outcomes over time (Child Trends, 2015). In a recent study, Briley et al. (2014) tested a rigorous cross-lagged, longitudinal model to explore the reciprocal effects of child achievement on parent academic expectations during elementary school. In the large, nationally representative sample (ECLS-K), small but statistically significant bidirectional effects emerged at each time point. These findings reflect a dynamic, reciprocal pattern of influence, and suggest that parent expectations contributing to change over time in child achievement even when actual achievement and other confounders are well-controlled in a cross-lagged model. One aim of the present study was to replicate these bidirectional effects in a low-income sample at elevated risk for underachievement and educational disparities.

Proposed Mediators Between Parent Expectations and Child Academic Performance

A second study aim was to better understand the processes by which parent academic expectations influence child achievement, testing three of the most promising potential mediators: parent involvement in child schooling, child learning behaviors, child self-perceived academic competence. Relative to prior studies that tested mediation in the context of cross-sectional or simple prediction designs, this study examined mediation using rigorous cross-lagged longitudinal models, providing robust tests of the hypothesized developmental pathways (Little, 2013). The following sections describe the theoretical rationale and empirical evidence supporting the focus on these three mediators.

Parent academic expectations and involvement in children's schooling. Parent involvement in children's schooling is multifaceted, including behaviors such as attending parent-teacher conferences, volunteering in the classroom, and working with children on learning activities at home (Pomerantz, Moorman, & Litwack, 2007). Relative to high-SES parents, low-SES parents are less likely to get involved at their children's schools, and instead prioritize other types of at-home involvement, such as helping with homework (Chavkin & Williams, 1989; Hill & Taylor, 2004; Kohl, Lengua, McMahon, & the Conduct Problems Prevention Research Group, 2000; McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004). These SES-related differences may reflect both situational constraints (e.g., lack of transportation) and attitudinal factors (e.g., less comfort in the school setting) that shape patterns of parent involvement in the context of poverty (Hill & Taylor, 2004).

Parents with high academic expectations for their children may be particularly motivated to get involved in their child's schooling (Simpkins, Frederick, & Eccles, 2015), both by participating in school events (Hill, 2001) as well as by supporting learning at home (Englund et al., 2004; Halle et al., 1997). In turn, parent involvement is associated with child achievement, with cross-sectional links emerging as early as the prekindergarten years (Culp, Hubbs-Tait, Culp, & Starost, 2000; Marcon, 1999) and still evident in later elementary school (Englund et al., 2004). Predictive associations are consistent with a causal association; for example, prekindergarten parent involvement predicts child achievement after the transition into kindergarten (Culp et al., 2000; McWayne et al., 2004), and parent involvement in second grade predicts incremental child achievement in third grade (Reynolds, 1992). Despite SES-based differences in preferred types of parent involvement, both school- and home-based involvement are linked with the academic performance of young children from low-income families (Arnold, Zeljo, Doctoroff, & Ortiz, 2008; Fantuzzo, McWayne, Perry, & Childs, 2004). Chao (2000) interprets these links within an education niche theoretical framework, in which parents with high expectations indirectly influence child achievement by engaging in activities that provide children with learning opportunities and encouragement, such as reading and teaching at home, and attending school events. Sy and Schulenberg (2005) validated these links in the context of a transactional model, in which parent involvement (along with parent education and academic expectations) influenced (and were influenced by) the reading and math skills of their kindergarten children. Briley et al. (2014) tested a cross-sectional model that suggested a very small

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

percentage of the association between parent academic expectations and child academic performance was mediated by parent involvement. However, two other cross-sectional studies found no evidence for such mediation (Froiland et al., 2013; Phillipson & Phillipson, 2007).

Parent academic expectations and child learning behaviors. Learning behaviors refer to the set of effortful behaviors that support and promote learning, including paying attention, persisting with tasks, managing frustrations, and enjoying learning challenges (Yen, Konold, & McDermott, 2004). Controlling for cognitive ability, learning behaviors predict early academic success (McWayne et al., 2004), including social and behavioral adjustment after school entry (McDermott, Rikoon, & Fantuzzo, 2016) and growth in math and reading skills across the elementary school years (Li-Grining, Votruba-Drzal, Maldonado-Carreño, & Haas, 2010; McClelland, Acock, & Morrison, 2006).

Parent academic expectations are correlated with child learning behaviors (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001; Briley et al., 2014). Theorists have suggested that parents with high expectations model and reinforce learning efforts in their children, encouraging children to take on learning challenges and supporting child persistence and problem-solving efforts, based on their beliefs that their children are capable of mastering learning tasks (Bandura et al., 2001). In this social learning theory framework, parent confidence in their child's learning capabilities shape child learning motivation and behaviors both via behavioral mechanisms (e.g., modeling and selective reinforcement for attention and persistence) and via cognitive mechanisms (e.g., building child intrinsic motivation and self-efficacy; Ardelt & Eccles, 2001; Bandura et al., 2001). Consistent with this framework, Bandura and colleagues (2001) found that parent academic expectations were significantly associated with optimal child learning strategies and parents' beliefs that they could promote their child's learning.

Briley et al. (2014) included child learning behaviors in their longitudinal model, documenting significant correlations between parent academic expectations at Kindergarten and first grade and child learning behaviors at subsequent time points (first and third grade). In turn, first-grade learning behaviors were correlated with third grade math and reading performance. Briley et al. (2014) did not test for mediation, but the pattern of correlations suggest that child learning behaviors may represent an indirect pathway linking parent expectations to child achievement during the early elementary years.

Parent academic expectations and child self-perceived academic competence. A third conceptual framework that has been invoked to explain the positive impact of parent academic expectations on child achievement is the expectancy-value (E-V) model (Eccles & Wigfield, 2002; Nagengast et al., 2011; Simpkins et al., 2015), which posits that motivation is fueled by expectations of efficacy (beliefs that a task can be completed) along with beliefs regarding the value of the task. High parent academic expectations may promote child beliefs that academic success is of value and feelings of perceived competence to complete academic tasks. In this model, parent academic expectations influence child outcomes when they become internalized in the form of child perceptions of their own academic ability.

In support of this model, several studies of older elementary students have documented links between parent academic expectations and child self-perceptions of their academic competence (Cole, Maxwell, & Martin, 1997). When Parsons, Adler, and Kaczala (1982) followed students from late elementary school through high school, they demonstrated that parent academic expectations were better predictors of child perceptions of their own academic competence than their actual academic performance, a finding which was subsequently replicated in separate samples of third graders (Phillips, 1987) and sixth graders (Frome & Eccles, 1998). In turn, child self-perceived academic competence is associated with academic performance in the later elementary years, concurrently in fourth grade, and prospectively from fourth to fifth grade (see review by Marsh & Martin, 2011).

Evidence that child academic self-perceptions mediate the association between parent academic expectations and child achievement has emerged for older elementary students in cross-sectional (Benner & Mistry, 2007) and prospective longitudinal studies (Rutchick, Smyth, Lopoo, & Dusek, 2009), and also for preadolescents (Neuenschwander et al., 2007) and adolescents (Gonzalez-Pienda et al., 2002). However, it is unclear whether this association exists for younger students and whether it holds in low-income families.

Developmental Shifts

In general, there are reasons to anticipate that there will be developmental shifts in the role played by child self-perceptions in children's academic adjustment, which might alter the nature of mediation linking parent academic expectations with child achievement. Developmental psychologists have long recognized that substantial changes occur in the early elementary years in children's abilities to integrate information and use deductive reasoning—dubbed the "5 to 7" shift (Sameroff & Haith, 1996). Central to this shift is a movement away from fragmentary and impressionistic thinking to reasoned deduction based upon the integration of relevant pieces of information. Accordingly, child self-perceptions tend to be global and optimistic in the early elementary years. They transform in the later elementary years, as children begin to incorporate informational feedback from adults and make social comparisons with their peers, developing more differentiated self-assessments (Helmke, 1999). In addition, children's beliefs about themselves begin to influence their behavior in more substantial ways during the later elementary years (Davis-Kean et al., 2008). The expectancy-value (E-V) model (Eccles & Wigfield, 2002) predicts that these developmental shifts alter the ways in which parent expectations influence child achievement, suggesting that parents exert influence of child behaviors in the early school years, which then, over time, become internalized as child self-perceptions and expectations in the later elementary years. A few studies suggest that child self-perceptions mediate the impact of parent academic expectations on child achievement in older students; however, we were unable to find a test of this indirect pathway in younger elementary students. Hence, it remains unclear whether the impact of parent expectations on child academic performance is mediated initially through child learning behaviors and then later by internalized child self-perceptions.

The Present Study

The present study had two aims. The first aim was to examine dynamic developmental associations between parent academic ex-

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

pectations and child academic performance across the elementary grades in a low-income sample using fully cross-lagged longitudinal models. Based on existing research (Briley et al., 2014; Simpkins et al., 2015), we anticipated bidirectional effects, with parent academic expectations prospectively predicting child academic achievement and child achievement predicting parent expectations over time. The second aim was to explore three potential mediators of these associations over the course of elementary school, in order to better understand the mechanisms by which parental academic expectations influence child performance in a low-income sample. We examined mediation longitudinally with both change and time-order built into all models (Little, 2013). Mediation effects were tested across two distinct developmental periods: early elementary school (grade 1 to grade 3) and late elementary school (grade 2 to grade 5). Guided by the expectancy-value (E-V) model (Eccles & Wigfield, 2002; Simpkins et al., 2015), we hypothesized that child learning behaviors might emerge as a mediator in the early elementary years and child self-perceptions of academic competence might emerge as a mediator in the later elementary years.

Method

Participants

Participants were 356 children and their caregivers (89% mothers) recruited from Head Start centers (58% European American, 25% African American, 17% Latino). Reflecting the eligibility requirements of Head Start, families were low-income (median household income of $15,000; average income-to-needs ratio = .88), with 37% married, 24% living with a partner, 39% single-parent. About one third of the parents (31%) had not completed high school, and a small number (2%) had college degrees; most had a high-school education.

Families were recruited initially from 44 classrooms in 25 Head Start centers by a letter inviting them to participate in a developmental study. The families of 86% of the eligible children agreed to participate. Half of the centers were randomly assigned and received a school readiness intervention in Head Start. This study used data for the whole sample, starting two years after the intervention posttest. Although intervention did not influence parent expectations or child academic performance in elementary school, all models controlled for intervention.

Head Start centers were organized at the county level rather than by school district, leading to wide dispersion of study participants at the transition into elementary school. In 1st grade, the 356 participants were in over 200 first-grade classrooms in 82 elementary schools in 33 school districts. For most cases, children were the only study participants in their classrooms (70% in first grade, 72% in second grade, 73% in third grade, 78% in fifth grade).

Sample attrition was generally low, declining slightly each wave, from 333 (first grade) to 314 (second grade) to 299 (third grade) to 284 (fifth grade). Almost all loss was due to family mobility and difficulty locating participants and their current school. Fifteen participants who had no data for study variables beyond first grade were dropped from the present analyses. Demographically, those who dropped out of the study tended to have lower household incomes relative to those who remained beyond first grade; however, attrition was not systematically related to any other variable in the present study. Full Information Maximum Likelihood was used to estimate missing data in all analyses.

Data Collection Procedures

Assessments were conducted when children were in grades 1, 2, 3, and 5. In the spring of each year, parents were interviewed in their homes and asked about their academic expectations. A trained interviewer read questions aloud and recorded parent responses. For families with limited English language skills, a trained bilingual research assistant conducted the interviews. Parents were compensated $20 for each interview. Child assessments were conducted individually at school by trained research assistants in the spring of each academic year and included reading achievement tests and ratings of child self-perceived academic competence. At the same time, trained research assistants delivered and explained the teacher ratings, which included ratings of parent involvement in child education, child learning behaviors, and child academic performance, and then teachers completed the ratings on their own and returned them to the project. Teachers were compensated financially for the ratings.

Measures

Parent academic expectations. Parent academic expectations are typically assessed by asking parents how far they expect their child to go in school (see review by Yamamoto & Holloway, 2010). In addition, some researchers have asked parents what grades they expect their children to get (Phillipson & Phillipson, 2007). In this study, parents were asked both questions: "Knowing your child as you do, how far do you think she or he will go in school?" and "Knowing your child as you do, what is the average grade you expect him/her to receive in school?" Each item was rated on a 7-point rating scale, with higher values indicating more positive academic expectations (1 = 0-8th grade/lower than C's; 7 = more than four years of college/receive A's). Across waves of data, correlations between the two items ranged from r = .56 to .58. Items were averaged.

Child academic performance. Two measures of child academic performance were available across the years of study. The *Test of Word Reading Efficiency* (TOWRE; Torgesen, Wagner, & Rashotte, 1999) provided a brief direct assessment of child reading fluency. On the TOWRE, the Sight Word Efficiency subscale measured the number of words read accurately within 45 seconds, and the Phonemic Decoding Efficiency subscale measured the number of nonwords sounded out accurately within 45 seconds (test-retest reliability reported by the developers of .85–.90; current study α = .83 and α = .85, respectively). Children's TOWRE scores were computed as age-normed, standardized scores, averaged across the two subscales.

In addition, teachers provided ratings of child academic performance using the Academic Success subscale of the *Academic Performance Rating Scale* (APRS; DuPaul, Rapport, & Perriello, 1991). Teachers rated the grade level and quality of student reading/language arts skills, speaking skills, and written language arts work on four items (α = .90), and they rated the grade level and accuracy of student mathematics skills on two items (α = .75). Items were rated on a 5-point rating scale and averaged to represent a composite teacher rating of each child's academic perfor-

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

mance (reliability for this composite ranged from .82 to .91 across waves).

Mediators. Teachers rated parent involvement using a seven-item subscale from the *Parent-Teacher Involvement Questionnaire* (PTIQ; Kohl et al., 2000). Subscale items reflected the quality of the parent's relationship with the teacher and the school in general (e.g., How well do you feel you can talk to and be heard by this child's parents? How important is education in this family?) as well as the parent's support of their child's education (e.g., How involved are the parents of this child in his or her education? To the best of your knowledge, how much do this child's parents do things to encourage a positive attitude toward education, such as reading to him/her and trying to teach him/her new things?). Items were rated on a 5-point rating scale with response options ranging from *Not at all* to *A great deal.* Two additional items were omitted based on prior research suggesting that they have reduced relevance in low-income samples (Chavkin & Williams, 1989; Kohl et al., 2000) along with evidence of very low means in this low-income sample (below 2 or "*A Little*"). These included volunteering in the classroom and interest in getting to know the teacher. Included items were averaged (α = .88-.94). Parents also completed a parallel version of this scale (Kohl et al., 2000).

Teachers rated five items from the *Learning Behaviors Scale* (McDermott, Green, Francis, & Stott, 1999) to describe each child's effortful learning (e.g., responds in a manner that shows attention, accepts new tasks without resistance). Items were rated on a 3-point rating scale (1 = *does not apply* to 3 = *most often applies;* sample α = .83-.91).

Children's academic self-perceptions were assessed in 1st through 3rd grade using the 6-item *Perceptions of Difficulty with Reading* subscale from the *Reading Self-Concept Scale* (Chapman & Tunmer, 1995), describing their perceptions of difficulties they experience as a reader (e.g., Do the other kids in your class read better than you? Do you make lots of mistakes in reading? Do you need extra help in reading?). Each item was rated on a 4-point scale (1 = *almost never* to 4 = *almost always*). The total scale score was used for analyses (α = .72-.81). In 5th grade, academic self-perceptions were measured using the *Cognitive Competence* subscale of the *Perceived Competence Scale for Children* (Harter, 1982). The seven items were rated using a 4-point scale (1 = *not at all like me,* 4 = *a lot like me*) and described general feelings of academic competence (e.g., some kids do very well at their classwork; some kids have trouble figuring out the answers in school). Items were averaged (α = .70).

Additional covariates. Primary caregivers reported on family SES (education and income), single-parent status, child age, race, and sex, which were included as covariates in analyses.

Analytic Plan

Path analyses were conducted in MPlus, using Full Information Maximum Likelihood to address missing data. As data was collected at more than two time points, we were able to examine true longitudinal mediation, with both change and time-order built into all models (Little, 2013). Mediation effects were tested across two distinct developmental periods (see Figure 1): early elementary school (grade 1 to grade 3) and later elementary school (grade 2 to grade 5). Although children were widely dispersed across classrooms and schools, for all models we used the CLUSTER option in MPlus in order to account for potential effects associated with nesting of children within their original Head Start classrooms. For each model, we report the overall chi-square test (χ^2), which is ideally nonsignificant; however, this statistic is sensitive to sample size and is not generally used as a stand-alone indicator of model fit (Brown, 2015). Following recommendations by Hu and Bentler (1998), we also report the Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR), using CFI $\geq$ .95, RMSEA $\leq$ .06, and SRMR values $\leq$ .08 as cutoff values to indicate a reasonable fit of the data to the specified model. Model

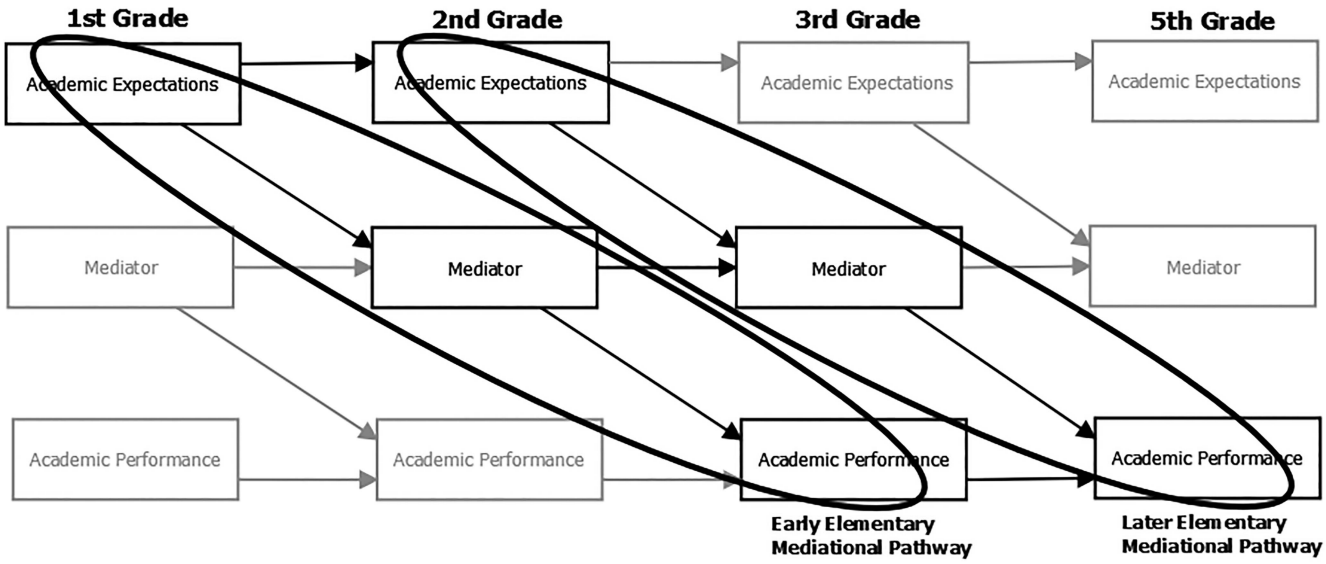


Figure 1. Conceptual model of the two mediational pathways tested: Early elementary (first to third grade) and later Elementary (second to fifth grade). Within wave covariances are not depicted.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

fit was evaluated using multiple indices, given the complex array of influences that affect each index, and the ongoing debate regarding absolute cutoff thresholds (e.g., Chen, Curran, Bollen, Kirby, & Paxton, 2008).

Results

Preliminary Analyses

Means and standard deviations of study variables at each time point are presented in Table 1. Zero-order correlations were computed for all study variables across all time-points. As patterns of correlations were largely consistent across time, Table 2 presents an abridged version of these correlations, showing the associations among study variables at 1st grade and 5th grade (full correlation table is available in the online supplemental materials). Variables showed mild to moderate levels of stability across time, ranging from $r = .69$ for reading achievement (TOWRE) to $r = .20$ for academic self-perceptions, all $p < .01$. In first grade (Time 1), parent academic expectations were positively associated with all other study variables, ranging from $r = .46$ with teacher-rated academic performance to $r = .12$ with parent involvement, all $p < .05$. Predictive associations were similar, with correlations between first-grade parent academic expectations and fifth grade variables ranging from $r = .43$ with reading achievement to $r = .25$ with learning behaviors, all $p < .01$. The predictive association between first grade academic expectations and fifth grade parent-teacher involvement was nonsignificant.

Cross-lagged Longitudinal Models

To examine bidirectional influences between parent academic expectations and child academic performance across time, two autoregressive longitudinal cross-lagged path analytic models were computed, one using the direct assessment of reading achievement (TOWRE) and one using teacher ratings (APRS) to index child academic performance. All models controlled for family SES and intervention status as well as child age, sex, and race.

The top half of Figure 2 depicts the cross-lagged associations between parent academic expectations and direct assessments of child reading achievement. The model showed a good fit, with $\chi^2(10) = 13.56$, $p = .19$, RMSEA = .03, 90% Confidence Interval [.00, .07], CFI: .99, and SRMR = .01. Accounting for stability of the variables across time and within time-point associations, first grade parent academic expectations significantly contributed to second grade reading achievement, $\beta = .15$, $p < .001$, and third grade academic expectations marginally predicted fifth grade reading achievement, $\beta = .06$, $p = .06$. No significant cross-lagged predictions emerged between second and third grade time-points. Bidirectional paths also emerged between child reading achievement in first and second grade and parent academic expectations in second and third grade, both $\beta = .13$, $p < .01$, but this path was not significant between third and fifth grades.

The bottom half of Figure 2 depicts the cross-lagged associations between parent academic expectations and teacher-rated child academic performance. This model also fit the data well, $\chi^2(8) = 8.72$, $p = .37$, RMSEA = .02, 90% CI [.00, .07], CFI = .99, SRMR = .01. Parallel to the first model, first grade academic expectations significantly predicted second grade academic performance ratings, $\beta = .15$, $p < .01$, and third grade academic expectations significantly predicted fifth grade academic performance ratings, $\beta = .15$, $p < .01$. The link between second grade academic expectations and academic performance was not significant. Bidirectional links also paralleled the first model, with first-grade child academic performance contributing significantly to second grade parent academic expectations, $\beta = .15$, $p < .01$, and second-grade child academic performance contributing significantly to third grade parent academic expectations, $\beta = .20$, $p < .01$. Thus, similar cross-lagged associations emerged for the two independently assessed measures of child academic performance, with parent academic expectations influencing child academic performance in early elementary school and incrementally in later elementary school, and child academic performance influencing parent expectations in early elementary school.

Tests of Mediation

The next set of models examined the degree to which significant links between parent academic expectations and child academic performance were mediated by parent involvement in child schooling, teacher-rated learning behavior, or children's academic self-perceptions. Where significant longitudinal indirect paths emerged, follow-up tests of the indirect effect were conducted using bias-corrected bootstrapped confidence intervals, with 1000

Table 1
Means and Standard Deviations of Study Variables at Each Time Point

Variables	Grade Level			
	1st Grade ($N = 330$)	2nd Grade ($N = 314$)	3rd Grade ($N = 299$)	5th Grade ($N = 284$)
Parent academic expectations	4.58 (1.04)	4.64 (1.04)	4.71 (1.02)	4.74 (1.06)
Parent involvement	2.82 (1.06)	2.24 (1.05)	2.03 (1.10)	2.09 (1.18)
Learning behavior	1.46 (.47)	1.46 (.43)	1.42 (.47)	1.47 (.47)
Academic self-perception	3.19 (.56)	3.19 (.56)	3.09 (.66)	1.76 (.59)
Academic performance ratings	3.15 (.80)	3.15 (.80)	2.99 (.76)	2.98 (.80)
Reading achievement (TOWRE)	97.93 (10.96)	97.71 (13.44)	99.52 (13.24)	96.38 (12.77)

Note. Standard deviations are presented in parentheses under the respective means. TOWRE scores represent nationally normed scores; all other scores represent average item ratings, with parent expectations rated on a 7-point scale, parent involvement and child academic performance rated on a 5-point scale, learning behaviors rated on a 3-point scale, and academic self-perception rated on a 4-point scale.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 2
Correlations Among Variables in First and Fifth Grades

	1	2	3	4	5	6	7	8	9	10	11
First Grade Measures											
1. Parent expectations											
2. Parent involvement	.12*										
3. Learning behaviors	.40**	.32**									
4. Self-perceptions	.20**	.11*	.18**								
5. Academic performance	.46**	.29**	.59**	.32**							
6. Reading achievement	.42**	.13*	.36**	.35**	.55**						
Fifth Grade Measures											
7. Parent expectations	.57**	.16**	.32**	.21**	.37**	.34**					
8. Parent involvement	.08	.20**	.05	.14*	.04	.08	.12*				
9. Learning behaviors	.25**	.16*	.37**	.17**	.26**	.23**	.39**	.37**			
10. Self-perceptions	.29**	.16**	.17**	.20**	.35**	.20**	.28**	.16*	.23**		
11. Academic performance	.42**	.23**	.44**	.27**	.58**	.47**	.48**	.35**	.57**	.36**	
12. Reading achievement	.43**	.19**	.35**	.25**	.53**	.69**	.33**	.13*	.21**	.33**	.54**

Note. Parents rated their academic expectations; teachers rated parent involvement, child learning behaviors, and child academic performance; children rated their academic self-perceptions and were tested on the TOWRE for reading achievement.
* $p < .05$. ** $p < .01$.

bootstrap samples (Williams & MacKinnon, 2008). Six models were run, examining each of the three hypothesized mediators with each of the two academic outcomes (directly assessed reading achievement, teacher-rated academic performance). Table 3 presents within wave covariance estimates for all longitudinal mediation models.

Parent involvement in child schooling. Figure 3 displays the model that includes parent involvement as a mediator between parent academic expectations and child academic outcomes (indexed by reading achievement in the top half and by teacher-rated academic performance in the bottom half). Both models had a satisfactory fit, for reading achievement, $\chi^2(31) = 50.87$, $p < .05$,

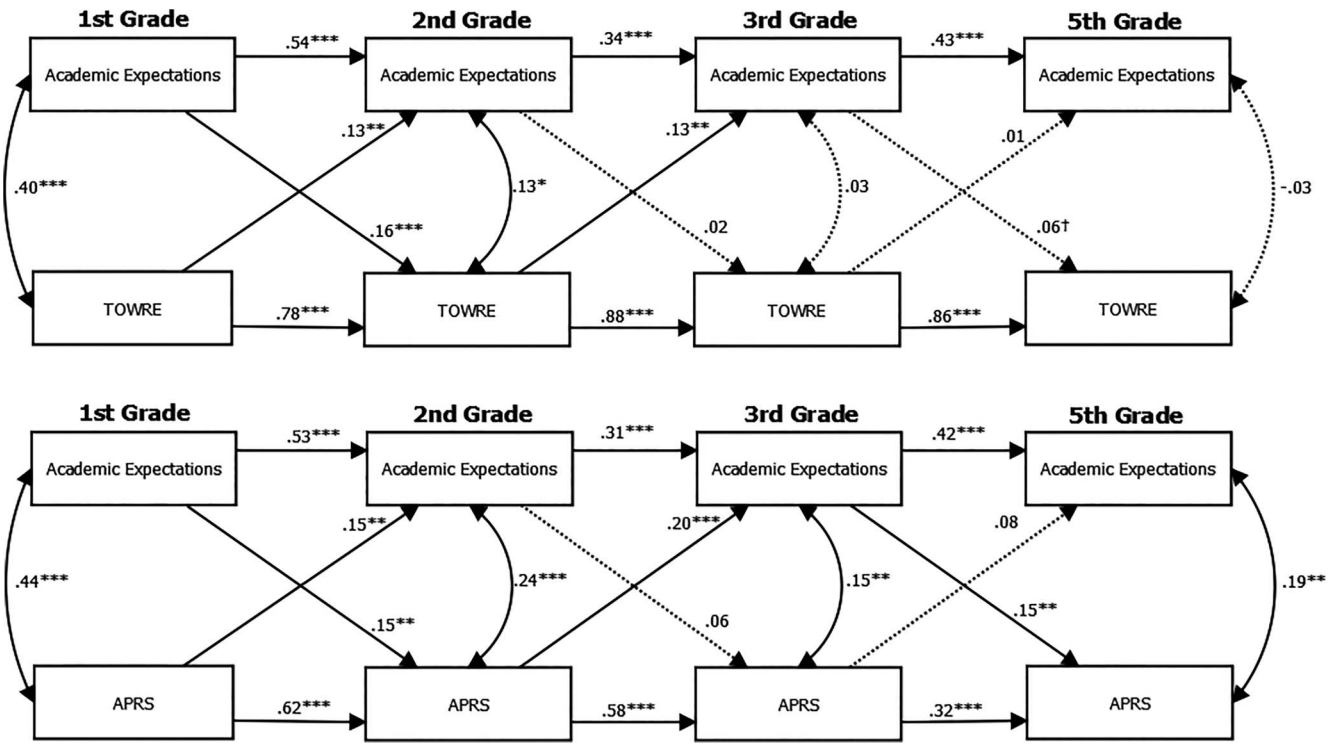


Figure 2. Cross-lagged path models of parent academic expectations and child academic performance. Note: The TOWRE involved the direct assessment of child reading fluency; the APRS involved teacher ratings of child academic performance; dotted lines indicate nonsignificant paths; control variables include family SES and single-parent status as well as child age, race, and sex; † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Table 3
Within Wave Standardized Covariance Estimates to Accompany Figures 3–5

Figure 3		Figure 4		Figure 5	
First Grade		First Grade		First Grade	
Expects ↔ Involvement	.12*	Expects ↔ Learning Beh	.40***	Expects ↔ Self-Perception	.22***
Expects ↔ TOWRE	.40***	Expects ↔ TOWRE	.40***	Expects ↔ TOWRE	.40***
Involvement ↔ TOWRE	.12*	Learning Beh ↔ TOWRE	.35***	Self-Perception ↔ TOWRE	.35***
Expects ↔ APRS	.44***	Expects ↔ APRS	.44***	Expects ↔ APRS	.44***
Involvement ↔ APRS	.27***	Learning Beh ↔ APRS	.59***	Self-Perception ↔ APRS	.32***
Second Grade		Second Grade		Second Grade	
Expects ↔ Involvement	.05	Expects ↔ Learning Beh	.07	Expects ↔ Self-Perception	−.03
Expects ↔ TOWRE	.13*	Expects ↔ TOWRE	.13*	Expects ↔ TOWRE	.14*
Involvement ↔ TOWRE	−.03	Learning Beh ↔ TOWRE	.08	Self-Perception ↔ TOWRE	.19**
Expects ↔ APRS	.26***	Expects ↔ APRS	.26***	Expects ↔ APRS	.27***
Involvement ↔ APRS	.10†	Learning Beh ↔ APRS	.42***	Self-Perception ↔ APRS	.11*
Third Grade		Third Grade		Third Grade	
Expects ↔ Involvement	.06	Expects ↔ Learning Beh	.17**	Expects ↔ Self-Perception	−.11*
Expects ↔ TOWRE	.03	Expects ↔ TOWRE	.02	Expects ↔ TOWRE	.04
Involvement ↔ TOWRE	−.07	Learning Beh ↔ TOWRE	.07	Self-Perception ↔ TOWRE	.10†
Expects ↔ APRS	.12*	Expects ↔ APRS	.14*	Expects ↔ APRS	.15*
Involvement ↔ APRS	.27***	Learning Beh ↔ APRS	.49***	Self-Perception ↔ APRS	.19**
Fifth Grade		Fifth Grade		Fifth Grade	
Expects ↔ Involvement	.18**	Expects ↔ Learning Beh	.23***	Expects ↔ Self-Perception	.19**
Expectations ↔ TOWRE	−.03	Expects ↔ TOWRE	−.03	Expects ↔ TOWRE	.13*
Involvement ↔ TOWRE	.06	Learning Beh ↔ TOWRE	.02	Self-Perception ↔ TOWRE	−.04
Expects ↔ APRS	.19**	Expects ↔ APRS	.18**	Expects ↔ APRS	.19**
Involvement ↔ APRS	.30***	Learning Beh ↔ APRS	.49***	Self-Perception ↔ APRS	.18**

Note: Expects = Expectations; Beh = Behavior; TOWRE = The Test of Word Reading Efficiency; APRS = Academic Performance Rating Scale.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

RMSEA = .04, 90% Confidence Interval [.02, .07], CFI = .99, SRMR = .04, for teacher-rated academic performance, $\chi^2(31) = 61.11$, $p < .01$, RMSEA = .05, 90% CI [.03, .07], CFI = .98, SRMR = .04. In both models, academic expectations predicted subsequent parent involvement in the early (grade 1 to 2) and later (grade 3 to 5) elementary years. In addition, although not shown in the model, parent involvement was significantly correlated with child academic functioning (both reading achievement and teacher-rated academic performance) at each time-point. However, in these fully controlled cross-lagged model, parent involvement did not emerge as a significant longitudinal mediator between parent academic expectations and child academic outcomes at any time point, for either measure of child academic functioning.

The use of teacher-rated parent involvement had the advantage of independence from parent-rated academic expectations. However, teachers may have reduced knowledge and/or biases regarding the educational involvement of low-income parents. For this reason, this model was rerun using parent ratings of their involvement (a parallel version of the teacher-rated scale). Findings were similar for both reporters; the additional analyses with parent ratings are available in the online supplemental materials.

Child learning behaviors. Figure 4 displays the model that includes child learning behaviors as a mediator between parent academic expectations and child academic outcomes (indexed by reading achievement in the top half and by teacher-rated academic performance in the bottom half). Both models had a satisfactory fit, for reading achievement, $\chi^2(33) = 98.43$, $p < .01$, RMSEA = .08, 90% CI [.06, .10], CFI = .97, SRMR = .05, for teacher-rated academic performance, $\chi^2(33) = 104.08$, $p < .01$, RMSEA = .08, 90% CI [.06, .10], CFI = .97, SRMR = .06. Parent academic expectations significantly predicted child learning behaviors at each time point. In the first model predicting reading achievement scores, child learning behaviors significantly predicted child achievement from second to third grade. Although a significant indirect path emerged in the early elementary years, with parent expectations in grade 1 influencing child achievement in grade 3 via child learning behaviors in grade 2, a formal test for mediation showed this pathway to be only marginally significant, $\mu = .010$, $p = .089$, 95% CI for the mediated effect [−.002, .022]. A similar pattern of findings emerged when teacher-rated academic performance was used to index child academic functioning in the second model. In this model, however, child learning behaviors in second grade significantly mediated the association between first grade parent academic expectations and third grade academic functioning, $\mu = .014$, $p < .05$, 95% CI [.002, .035]. For neither index of child academic functioning did child learning behaviors mediate the effects of parent academic expectations in the later elementary years.

Child academic self-perceptions. Figure 5 displays the model that includes child academic self-perceptions as a mediator between parent academic expectations and child academic outcomes indexed by reading achievement in the top half and by teacher-rated academic performance in the bottom half. Both models had a satisfactory fit, for reading achievement, $\chi^2(33) = 97.74$, $p < .01$, RMSEA = .07, 90% CI [.06, .09], CFI = .97, SRMR = .06, for teacher-rated academic performance, $\chi^2(33) = 91.51$, $p < .01$, RMSEA = .07, 90% CI [.06, .09], CFI = .96, SRMR = .06. Parent academic expectations predicted child academic self-perceptions significantly and incrementally at each time point. In both models, child academic self-perceptions were significantly predictive of academic functioning only in the later elementary years (from grades 3–5) and not in the earlier elementary years.

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

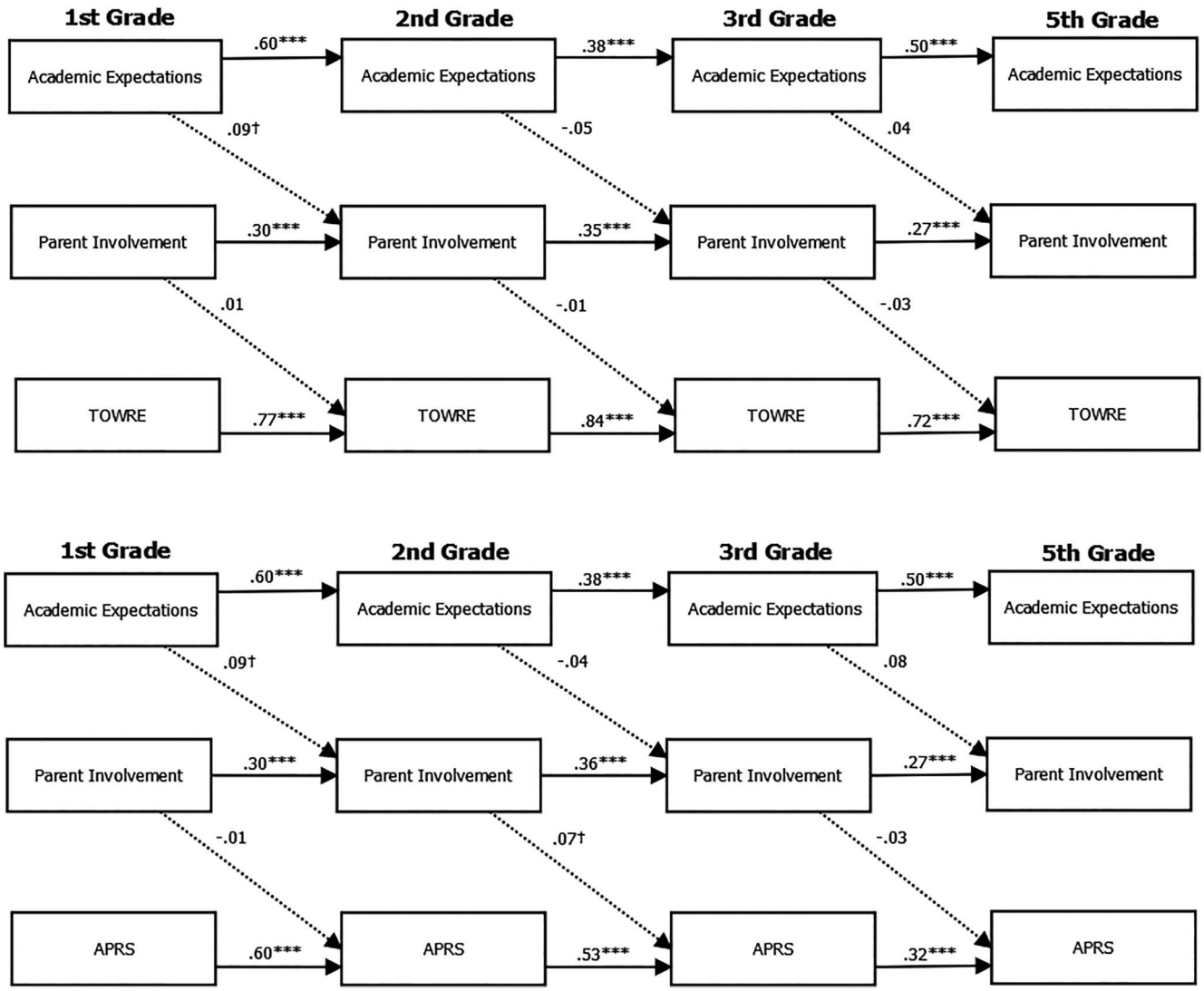


Figure 3. Cross-lagged path models testing parent involvement as a mediator. TOWRE = The Test of Word Reading Efficiency; APRS = Academic Performance Rating Scale. Dotted lines indicate nonsignificant paths; within wave covariances are presented in Table 3; control variables include family SES and single-parent status as well as child age, race, and sex; † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Formal tests showed significant mediation in the late elementary pathway, with third grade child academic self-perceptions significantly mediating the longitudinal association between second grade parent academic expectations and fifth grade reading achievement, $\mu = .025$, $p < .05$, 95% CI [.001, .048], as well as fifth grade teacher-rated academic performance, $\mu = .029$, $p < .05$, 95% CI [.001, .058].

Discussion

As educators, policymakers, and researchers continue working to address the poverty-related achievement gap, there is ongoing interest in understanding how parents may best contribute to their children's academic success, particularly in low-SES samples where children are at elevated risk for school difficulties. Focusing on a low-income sample, this study provides rigorous evidence from cross-lagged longitudinal models documenting bidirectional influences between parent academic expectations and child academic performance over the course of elementary school, replicating across two measures of child academic functioning. The findings also show that the mediators of parent influence shift developmentally, from child learning behaviors in the early years to self-perceived academic competence in the later years.

Bidirectional Influences Between Parent Expectations and Child Academic Performance

In models estimating child academic outcomes using both direct achievement tests and teacher ratings, parent academic expectations significantly contributed to child achievement in early ele-

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

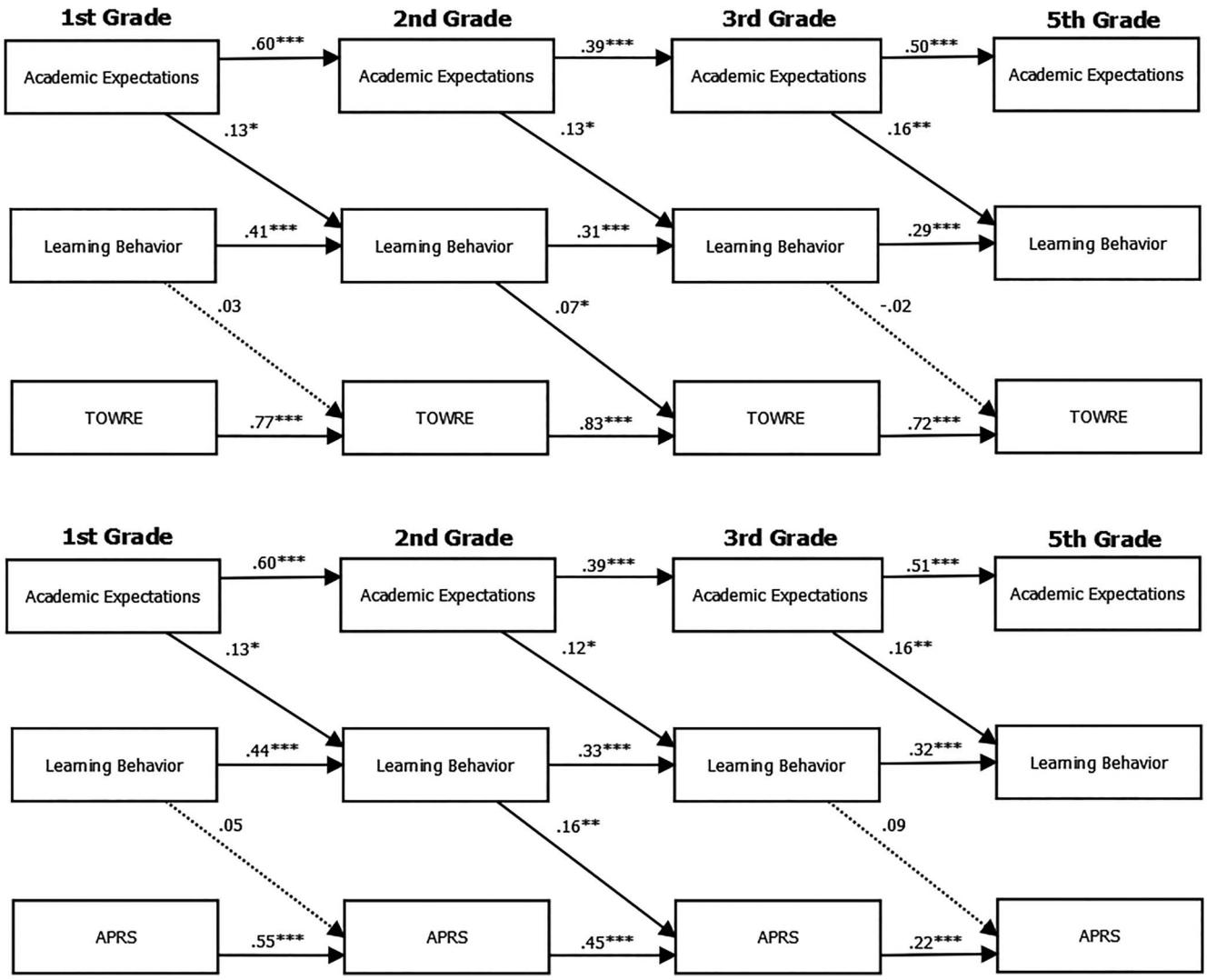


Figure 4. Cross-lagged path models testing learning behaviors as a mediator. TOWRE = The Test of Word Reading Efficiency; APRS = Academic Performance Rating Scale. Dotted lines indicate nonsignificant paths; within wave covariances are presented in Table 3; control variables include family SES and single-parent status as well as child age, race, and sex; † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

mentary school (grade 1 to 2) and incrementally in later elementary school (grade 3 to 5). Bidirectional paths also emerged, with child achievement influencing parent academic expectations in early but not later elementary school. These findings replicate the existing literature by demonstrating that parent academic expectations prospectively predict child academic performance, but also extend it by testing for bidirectional links over the course of elementary school. The findings are similar to Briley et al. (2014) who also examined bidirectional links, and document generalizability of those findings to this low income sample. One difference from the Briley et al. (2014) findings is that the reciprocal influence of child academic performance on parent expectations was significant only during the early elementary year, a pattern evident across both measures of child academic functioning.

Replication in other low-income samples is needed, but this finding suggests that parent academic expectations may crystallize over the elementary years, for better or for worse, becoming less responsive to performance feedback from the teacher in the later elementary years. If so, interventions designed to promote positive change in parent beliefs about their children's future academic potential may have particular impact when they occur in the early learning years. Further longitudinal study would be helpful to explore these bidirectional influences as children progress through middle and high school.

Mediators of the Link Between Parent Expectations and Child Academic Performance

In examining potential mediators of the link between parent academic expectations and child academic performance, we found an important developmental shift, with child learning behaviors mediating the predictive association in the early elementary years,

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

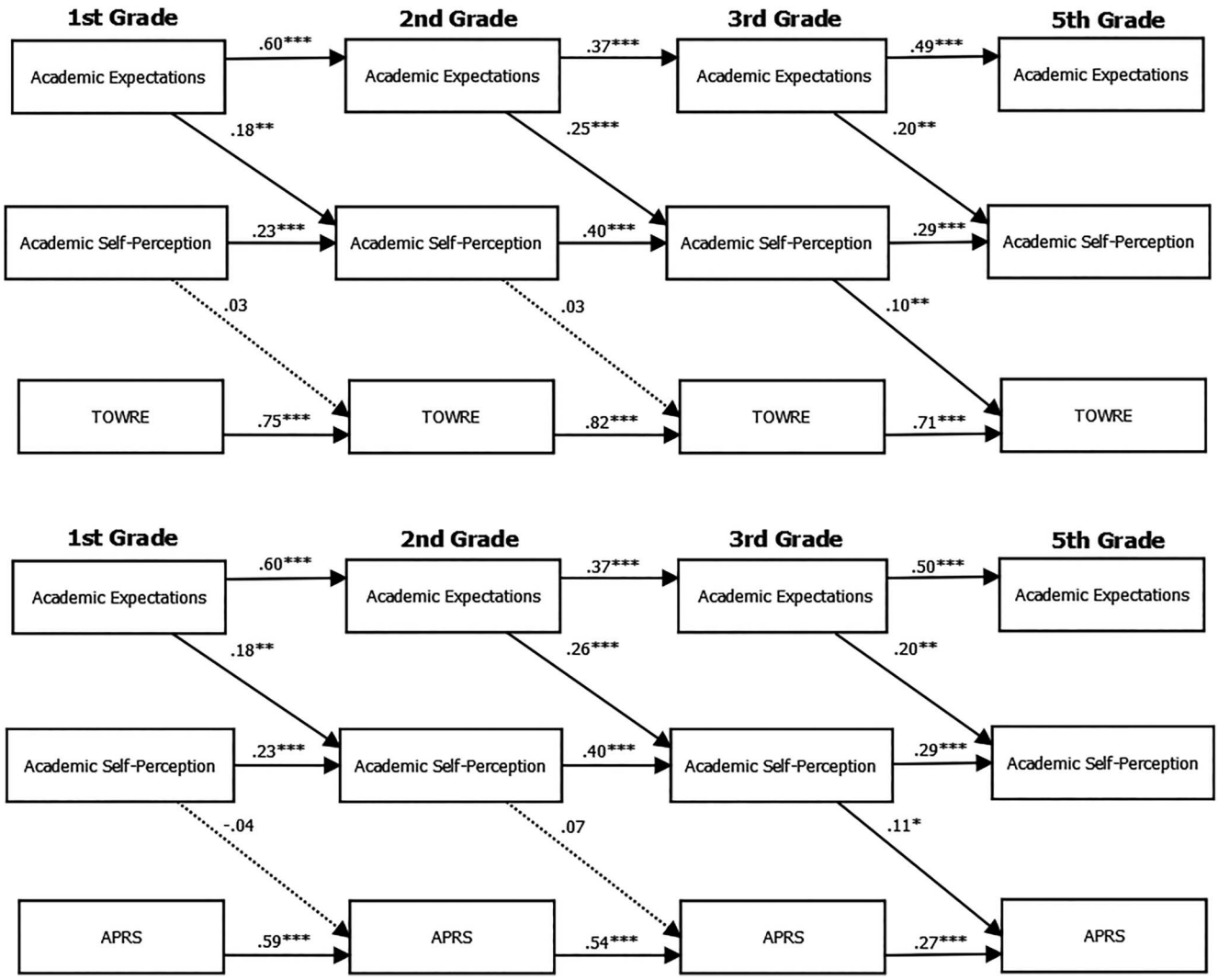


Figure 5. Cross-lagged path models testing child academic self-perceptions as a mediator. TOWRE = The Test of Word Reading Efficiency; APRS = Academic Performance Rating Scale. Dotted lines indicate nonsignificant paths; control variables include family SES and single-parent status as well as child age, race, and sex; within wave covariances are presented in Table 3; † $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

and child academic self-perceptions mediating the predictive association in the later elementary years. While the significant indirect effects were consistent across both direct assessments of reading achievement and teacher-rated academic performance, it is important to note that, for the early elementary years, follow-up tests of formal mediation were only significant for the teacher-rated academic performance outcome. Taking into account the complete set of findings, however, they suggest that parent expectations affect children's developing learning behaviors in the preschool and early elementary years, when children are first learning how to approach and manage learning challenges (McClelland et al., 2006). As children approach school age, parents with higher academic expectations may cultivate early learning behaviors by encouraging children to keep trying and praising their efforts to master new skills, thereby increasing their behavioral engagement with challenging tasks as they progress through elementary school (Gunderson et al., 2013). In turn, these positive learning behaviors foster accelerated growth in math and reading skills during the initial elementary years (Li-Grining et al., 2010; McClelland et al., 2006), as well as enhanced social and behavioral adjustment (McDermott et al., 2016).

In the later elementary school years, we found that the predictive association between prior parent academic expectations and subsequent child academic performance was mediated by children's self-perceived academic competence. This shift in mediation, from learning behaviors earlier in elementary school to self-perceived academic competence later in elementary school, may partially reflect a calibration process associated with the development of children's self-perceptions (Davis-Kean et al., 2008). During the early elementary years, children's academic self-perceptions tend to be overly optimistic and less reflective of parent and teacher perceptions (e.g., Benenson & Dweck, 1986; Pesu, Viljaranta, &

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Aunola, 2016). As they progress through elementary school, however, children's academic self-perceptions undergo a normative decline and are increasingly aligned with objective achievement measures (Helmke, 1999). As children become more able developmentally to consider input from different sources and integrate this information in their self-perceptions, their parent's beliefs about their academic competence may become increasingly influential (Gniewosz, Eccles, & Noack, 2015). In addition, over this same developmental period, children's beliefs about their ability increasingly influence their behaviors (Simpkins et al., 2015).

The developmental shift in mediators suggests a process in which parent expectations first operate as external supports that shape child learning behaviors. However over time, parent expectations are filtered through an increasingly complex sense of self which, in turn, plays a more functional role in determining behavior (Simpkins et al., 2015). Further, peer feedback takes on an increasingly complex and influential role in children's ability self-perceptions as they progress through elementary school (e.g., Altermatt, Pomerantz, Ruble, Frey, & Greulich, 2002; Gest, Rulison, Davidson, & Welsh, 2008). Consistent with a developmental shift in which the more complex sense of self acquired by older elementary children begins to influence their academic performance (Chamorro-Premuzic, Harlaar, Greven, & Plomin, 2010; Skaalvik & Hagtvet, 1990), the present findings suggest that their perceived competence also begins to mediate the impact of parent academic expectations on their academic performance in the later elementary years.

Although prior research demonstrates that parent involvement in child schooling is associated with child academic success (Pomerantz et al., 2007), involvement did not mediate between parent academic expectations and child academic performance in the present analyses. This finding is consistent with findings reported by Froiland et al. (2013) and Phillipson and Phillipson (2007). In contextual models of children's academic achievement, children's own behaviors and beliefs are considered more proximal determinants of their performance outcomes than parent behaviors (Sacker, Schoon, & Bartley, 2002; Simpkins et al., 2015). This may be why child learning behaviors and academic self-perceptions emerged as more powerful mediators linking parent expectations with child performance than parent involvement. This interpretation is consistent with empirical analyses showing proximal child-level factors accounting for more variance in academic performance than parenting behaviors, including school involvement (e.g., Hindman, Skibbe, Miller, & Zimmerman, 2010).

In the present study, the expected cross-sectional associations emerged at each measurement wave, with parent academic expectations significantly correlated with involvement which, in turn, was significantly correlated with child academic performance. However, in the well-controlled cross-lagged model, there was no evidence that expectations influenced the developmental course of parent involvement, nor that parent involvement influenced the developmental course of child academic performance. This finding does not diminish the value of parent involvement, per se, but suggests that it cannot account for the ongoing influence of parent expectations on child academic performance over time; rather, more proximal child-level processes appear to be central to this development.

Strengths and Limitations

The present study findings are strengthened by the rigor of the analytic approach, which used multiple time points, enabling correct time-ordering of the hypothesized predictors, outcomes, and mediators, thereby allowing for a test of true longitudinal mediation (Little, 2013). Models further controlled for prior levels and bidirectional influences of all variables across time, as well as family SES, child sex, race, age, and preschool intervention status. The consistency of the pattern of results across both teacher-report and independent assessment of child academic performance is also a strength of this study.

There are also a number of limitations to note. First, the measure used to assess reading achievement was limited in scope. Although the TOWRE is a psychometrically sound measure, it tests specifically for reading fluency, and not the broader domain of reading or academic competence. However, this limitation is partly remediated by the replication of the pattern of findings using teacher ratings of child academic performance, which assessed child performance in both reading and mathematical domains. Another limitation of this study is the brief nature of most of the measures included. The measure of parent academic expectations used only two items, making it difficult to confidently conclude precisely what these two questions may represent to parents. Although a one or two-item measure of academic expectations is standard within this field of research, clearly more work is needed to understand the underlying construct being measured by these expectation questions.

Implications

The results of this study have implications for both developmental theory and for parent-focused interventions targeting child academic performance. Prior theory and empirical evidence has supported a link between parent academic expectations and development of children's learning behaviors (Ardelt & Eccles, 2001; Bandura et al., 2001), a finding that was supported in a low-income sample by the present study; however, these results further suggest that, as children mature and develop an increased capacity for self-awareness, particularly with respect to their academic capabilities (Davis-Kean et al., 2008), academic self-perceptions take on an increasingly large role in supporting academic success. Thus, while parent academic expectations continue to have an influence on children's academic performance throughout childhood, as children mature, there is a developmental shift in how the expectations function, from an initial influence on children's learning behaviors in early elementary school to a subsequent influence on academic self-perceptions in later elementary school.

Understanding these processes may be highly relevant in the creation of interventions aimed at closing the SES-based achievement gap. A handful of studies have demonstrated that it is possible to positively influence beliefs and expectations of parents living in poverty regarding their children's academic performance, and that this may mediate intervention effects (Loughlin-Presnal & Bierman, in press; Purtell & McLoyd, 2013). For example, in an intervention study that was conducted subsequent to this study, Head Start parents were provided with a home learning curriculum and home learning supports that produced increases in parent academic expectations that mediated the intervention impact on child academic outcomes (Loughlin-Presnal & Bierman, in press).

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

A second example is the New Hope intervention, which provided low-income families with earnings supplements, job search assistance, and child and health care subsidies for three years. In this intervention, parent perceptions of child reading performance and child academic expectations mediated long-term intervention effects on child employment attitudes (Purtell & McLoyd, 2013). It is important to note that neither of these interventions tried to change parent expectations and beliefs by direct persuasion or simple exhortations encouraging parents to believe in their child's potential. Parent beliefs and expectations for their children are multiply determined, reflecting parents' personal experiences and circumstances, sociocultural context, and child characteristics and performance (Simpkins et al., 2015). Hence, it is unlikely that simple exhortations would alter expectations and beliefs. However, these studies suggest that interventions designed to build new skills, offer new opportunities, and improve the contextual support for parent and child attainment may, in some cases, derive benefits for children by improving parent expectations and beliefs about the child's future. Recognizing the potential importance of these parent academic expectations, and understanding more about how they influence development may help inform intervention design.

The developmental shift demonstrated in this study suggests that, in the preschool and early elementary years, it may be particularly beneficial to work with parents to help set expectations—and associated parenting strategies—that will promote a general positive attitude toward learning as children enter elementary school. As children proceed through school, however, it may become more effective for parents to focus on fostering academic self-perception by helping their children discover and cultivate specific academic strengths.

References

Adler, N. E., & Newman, K. (2002). Socioeconomic disparities in health: Pathways and policies. *Health Affairs, 21,* 60–76. http://dx.doi.org/10.1377/hlthaff.21.2.60

Altermatt, E. R., Pomerantz, E. M., Ruble, D. N., Frey, K. S., & Greulich, F. K. (2002). Predicting changes in children's self-perceptions of academic competence: A naturalistic examination of evaluative discourse among classmates. *Developmental Psychology, 38,* 903–917. http://dx.doi.org/10.1037/0012-1649.38.6.903

Ardelt, M., & Eccles, J. S. (2001). Effects of mothers' parental efficacy beliefs and promotive parenting strategies on inner-city youth. *Journal of Family Issues, 22,* 944–972. http://dx.doi.org/10.1177/019251301022008001

Arnold, D. H., Zeljo, A., Doctoroff, G. L., & Ortiz, C. (2008). Parent involvement in preschool: Predictors and the relation of involvement to preliteracy development. *School Psychology Review, 37,* 74–90.

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development, 72,* 187–206. http://dx.doi.org/10.1111/1467-8624.00273

Benenson, J. F., & Dweck, C. S. (1986). The development of trait explanations and self-evaluations in the academic and social domains. *Child Development, 57,* 1179–1187. http://dx.doi.org/10.2307/1130441

Benner, A. D., & Mistry, R. S. (2007). Congruence of mother and teacher educational expectations and low-income youth's academic competence. *Journal of Educational Psychology, 99,* 140–153. http://dx.doi.org/10.1037/0022-0663.99.1.140

Brand, J. E., & Xie, Y. (2010). Who benefits most from college? Evidence for negative selection in heterogeneous economic returns to higher education. *American Sociological Review, 75,* 273–302. http://dx.doi.org/10.1177/0003122410363567

Briley, D. A., Harden, K. P., & Tucker-Drob, E. M. (2014). Child characteristics and parental educational expectations: Evidence for transmission with transaction. *Developmental Psychology, 50,* 2614–2632. http://dx.doi.org/10.1037/a0038094

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). New York, NY: Guilford Press Publications.

Chamorro-Premuzic, T., Harlaar, N., Greven, C. U., & Plomin, R. (2010). More than just IQ: A longitudinal examination of self-perceived abilities as predictors of academic performance in a large sample of UK twins. *Intelligence, 38,* 385–392. http://dx.doi.org/10.1016/j.intell.2010.05.002

Chao, R. (2000). The parenting of immigrant Chinese and European American mothers relations between parenting styles, socialization goals, and parental practices. *Journal of Applied Developmental Psychology, 21,* 233–248. http://dx.doi.org/10.1016/S0193-3973(99)00037-4

Chapman, J. W., & Tumner, W. E. (1999). Reading Self-Concept Scale. In R. Burden (Ed.), *Children's self-perceptions* (pp. 29–34). Windsor, England: NFER-Nelson.

Chavkin, N. F., & Williams, D. L., Jr. (1989). Low-income parents' attitudes toward parent involvement in education. *Journal of Sociology & Social Welfare, 16,* 17–28.

Chen, F., Curran, P. J., Bollen, K. A., Kirby, J., & Paxton, P. (2008). An empirical evaluation of the use of fixed cutoff points in RMSEA test statistic in structural equation models. *Sociological Methods & Research, 36,* 462–494. http://dx.doi.org/10.1177/0049124108314720

Child Trends. (2015). *Parental expectations for their children's academic attainment*. Retrieved from http://www.childtrends.org/wp-content/uploads/2012/07/115_Parental_Expectations.pdf

Cole, D. A., Maxwell, S. E., & Martin, J. M. (1997). Reflected self-appraisals: Strength and structure of the relation of teacher, peer, and parent ratings to children's self-perceived competencies. *Journal of Educational Psychology, 89,* 55–70. http://dx.doi.org/10.1037/0022-0663.89.1.55

Culp, A. M., Hubbs-Tait, L., Culp, R. E., & Starost, H. (2000). Maternal parenting characteristics and school involvement: Predictors of kindergarten cognitive competence among Head Start children. *Journal of Research in Childhood Education, 15,* 5–17. http://dx.doi.org/10.1080/02568540009594772

Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19,* 294–304. http://dx.doi.org/10.1037/0893-3200.19.2.294

Davis-Kean, P. E., Huesmann, L. R., Jager, J., Collins, W. A., Bates, J. E., & Lansford, J. E. (2008). Changes in the relation of self-efficacy beliefs and behaviors across development. *Child Development, 79,* 1257–1269. http://dx.doi.org/10.1111/j.1467-8624.2008.01187.x

Douglas, J. W. B. (1964). *The home and the school*. London, England: MacGibbon and Kee.

DuPaul, G. J., Rapport, M. D., & Perriello, L. M. (1991). Teacher ratings of academic skills: The development of the Academic Performance Rating Scale. *School Psychology Review, 20,* 284–300.

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology, 53,* 109–132. http://dx.doi.org/10.1146/annurev.psych.53.100901.135153

Englund, M. M., Luckner, A. E., Whaley, G. J. L., & Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology, 96,* 723–730. http://dx.doi.org/10.1037/0022-0663.96.4.723

Entwisle, D., Alexander, K., & Olson, L. (2005). First grade and educational attainment by age 22: A new story. *American Journal of Sociology, 110,* 1458–1502. http://dx.doi.org/10.1086/428444

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Fantuzzo, J., McWayne, C., Perry, M. A., & Childs, S. (2004). Multiple dimensions of family involvement and their relations to behavioral and learning competencies for urban, low-income children. *School Psychology Review, 33,* 467–480.

Froiland, J. M., Peterson, A., & Davison, M. L. (2013). The long-term effects of early parent involvement and parent expectation in the USA. *School Psychology International, 34,* 33–50. http://dx.doi.org/10.1177/0143034312454361

Frome, P. M., & Eccles, J. S. (1998). Parents' influence on children's achievement-related perceptions. *Journal of Personality and Social Psychology, 74,* 435–452. http://dx.doi.org/10.1037/0022-3514.74.2.435

Gest, S. D., Rulison, K. L., Davidson, A. J., & Welsh, J. A. (2008). A reputation for success (or failure): The association of peer academic reputations with academic self-concept, effort, and performance across the upper elementary grades. *Developmental Psychology, 44,* 625–636. http://dx.doi.org/10.1037/0012-1649.44.3.625

Gniewosz, B., Eccles, J. S., & Noack, P. (2015). Early adolescents' development of academic self-concept and intrinsic task value: The role of contextual feedback. *Journal of Research on Adolescence, 25,* 459–473. http://dx.doi.org/10.1111/jora.12140

Gonzalez-Pienda, J. A., Nunez, J. C., Gonzalez-Pumariega, S., Alvarez, L., Roces, C., & Garcia, M. (2002). A structural equation model of parental involvement, motivational and aptitudinal characteristics, and academic achievement. *Journal of Experimental Education, 70,* 257–287. http://dx.doi.org/10.1080/00220970209599509

Gunderson, E. A., Gripshover, S. J., Romero, C., Dweck, C. S., Goldin-Meadow, S., & Levine, S. C. (2013). Parent praise to 1- to 3-year-olds predicts children's motivational frameworks 5 years later. *Child Development, 84,* 1526–1541. http://dx.doi.org/10.1111/cdev.12064

Gut, J., Reimann, G., & Grob, A. (2013). A contextualized view on long-term predictors of academic performance. *Journal of Educational Psychology, 105,* 436–443. http://dx.doi.org/10.1037/a0031503

Halle, T. G., Kurtz-Costes, B., & Mahoney, J. L. (1997). Family influences on school achievement in low-income, African American children. *Journal of Educational Psychology, 89,* 527–537. http://dx.doi.org/10.1037/0022-0663.89.3.527

Harter, S. (1982). The perceived competence scale for children. *Child Development, 53,* 87–97. http://dx.doi.org/10.2307/1129640

Helmke, A. (1999). From optimism to realism? Development of children's academic self-concept from kindergarten to grade 6. In F. E. Weinert & W. Schneider (Eds.), *Individual development from 3 to 12: Findings from the Munich longitudinal study* (pp. 198–221). Cambridge, England: Cambridge University Press.

Hill, N. E. (2001). Parenting and academic socialization as they relate to school readiness: The roles of ethnicity and family income. *Journal of Educational Psychology, 93,* 686–697. http://dx.doi.org/10.1037/0022-0663.93.4.686

Hill, N. E., & Taylor, L. C. (2004). Parental school involvement and children's academic achievement: Pragmatics and issues. *Current Directions in Psychological Science, 13,* 161–164. http://dx.doi.org/10.1111/j.0963-7214.2004.00298.x

Hindman, A. H., Skibbe, L. E., Miller, A., & Zimmerman, M. (2010). Ecological contexts and early learning: Contributions of child, family, and classroom factors during head start, to literacy and mathematics growth through first grade. *Early Childhood Research Quarterly, 25,* 235–250. http://dx.doi.org/10.1016/j.ecresq.2009.11.003

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3,* 424–453. http://dx.doi.org/10.1037/1082-989X.3.4.424

Kim, C., Tamborini, C. R., & Sakamoto, A. (2015). Field of study in college and lifetime earnings in the united states. *Sociology of Education, 88,* 320–339. http://dx.doi.org/10.1177/0038040715602132

Kohl, G. O., Lengua, L. J., & McMahon, R. J., & the Conduct Problems Prevention Research Group. (2000). Parent involvement in school: Conceptualizing multiple dimensions and their relations with family and demographic risk factors. *Journal of School Psychology, 38,* 501–523. http://dx.doi.org/10.1016/S0022-4405(00)00050-9

Li-Grining, C. P., Votruba-Drzal, E., Maldonado-Carreño, C., & Haas, K. (2010). Children's early approaches to learning and academic trajectories through fifth grade. *Developmental Psychology, 46,* 1062–1077. http://dx.doi.org/10.1037/a0020066

Little, T. D. (2013). *Longitudinal structural equation modeling*. New York, NY: Guilford Press.

Loughlin-Presnal, J. E., & Bierman, K. (in press). Gains in parent academic expectations mediate child outcomes in a home-visiting program targeting school readiness. *Journal of School Psychology*.

Marcon, R. A. (1999). Positive relationships between parent school involvement and public school inner-city preschoolers' development and academic performance. *School Psychology Review, 28,* 395–412.

Marsh, H. W., & Martin, A. J. (2011). Academic self-concept and academic achievement: Relations and causal ordering. *British Journal of Educational Psychology, 81,* 59–77. http://dx.doi.org/10.1348/000709910X503501

McClelland, M. M., Acock, A. C., & Morrison, F. J. (2006). The impact of kindergarten learning-related skills on academic trajectories at the end of elementary school. *Early Childhood Research Quarterly, 21,* 471–490. http://dx.doi.org/10.1016/j.ecresq.2006.09.003

McDermott, P. A., Green, L. F., Francis, J. M., & Stott, D. H. (1999). *Learning Behaviors Scale*. Philadelphia, PA: Edumetric and Clinical Science.

McDermott, P. A., Rikoon, S. H., & Fantuzzo, J. W. (2016). Transition and protective agency of early childhood learning behaviors as portents of later school attendance and adjustment. *Journal of School Psychology, 54,* 59–75. http://dx.doi.org/10.1016/j.jsp.2015.10.003

McWayne, C., Hampton, V., Fantuzzo, J., Cohen, H. L., & Sekino, Y. (2004). A multivariate examination of parent involvement and the social and academic competencies of urban kindergarten children. *Psychology in the Schools, 41,* 363–377. http://dx.doi.org/10.1002/pits.10163

Nagengast, B., Marsh, H. W., Scalas, L. F., Xu, M. K., Hau, K. T., & Trautwein, U. (2011). Who took the "x" out of expectancy-value theory? A psychological mystery, a substantive-methodological synergy, and a cross-national generalization. *Psychological Science, 22,* 1058–1066. http://dx.doi.org/10.1177/0956797611415540

Neuenschwander, M. P., Vida, M., Garrett, J. L., & Eccles, J. S. (2007). Parents' expectations and students' achievement in two western nations. *International Journal of Behavioral Development, 31,* 594–602. http://dx.doi.org/10.1177/0165025407080589

Parsons, J. E., Adler, T. F., & Kaczala, C. M. (1982). Socialization of achievement attitudes and beliefs: Parental influences. *Child Development, 53,* 310–321. http://dx.doi.org/10.2307/1128973

Pesu, L., Viljaranta, J., & Aunola, K. (2016). The role of parents' and teachers' beliefs in children's self-concept development. *Journal of Applied Developmental Psychology, 44,* 63–71. http://dx.doi.org/10.1016/j.appdev.2016.03.001

Phillips, D. A. (1987). Socialization of perceived academic competence among highly competent children. *Child Development, 58,* 1308–1320. http://dx.doi.org/10.2307/1130623

Phillipson, S., & Phillipson, S. N. (2007). Academic expectations, belief of ability, and involvement by parents as predictors of child achievement: A cross-cultural comparison. *Educational Psychology, 27,* 329–348. http://dx.doi.org/10.1080/01443410601104130

Pomerantz, E. M., Moorman, E. A., & Litwack, S. D. (2007). The how, whom, and why of parents' involvement in children's academic lives: More is not always better. *Review of Educational Research, 77,* 373–410. http://dx.doi.org/10.3102/003465430305567

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Purtell, K. M., & McLoyd, V. C. (2013). Parents' participation in a work-based anti-poverty program can enhance their children's future orientation: Understanding pathways of influence. *Journal of Youth and Adolescence, 42,* 777–791. http://dx.doi.org/10.1007/s10964-012-9802-7

Reynolds, A. J. (1992). Comparing measures of parental involvement and their effects on academic achievement. *Early Childhood Research Quarterly, 7,* 441–462. http://dx.doi.org/10.1016/0885-2006(92)90031-S

Rutchick, A. M., Smyth, J. M., Lopoo, L. M., & Dusek, J. B. (2009). Great expectations: The biasing effects of reported child behavior problems on educational expectancies and subsequent academic achievement. *Journal of Social and Clinical Psychology, 28,* 392–413. http://dx.doi.org/10.1521/jscp.2009.28.3.392

Sacker, A., Schoon, I., & Bartley, M. (2002). Social inequality in educational achievement and psychosocial adjustment throughout childhood: Magnitude and mechanisms. *Social Science & Medicine, 55,* 863–880. http://dx.doi.org/10.1016/S0277-9536(01)00228-3

Sameroff, A. J., & Haith, M. M. (1996). *The five to seven year shift: The age of reason and responsibility*. Chicago, IL: University of Chicago Press.

Simpkins, S. D., Fredricks, J. A., & Eccles, J. S. (2015). Parent beliefs to youth choices: Mapping the sequence of predictors from childhood to adolescence. *Monographs of the Society for Research in Child Development, 80,* 1–151.

Skaalvik, E. M., & Hagtvet, K. A. (1990). Academic achievement and self-concept: An analysis of causal predominance in a developmental perspective. *Journal of Personality and Social Psychology, 58,* 292–307. http://dx.doi.org/10.1037/0022-3514.58.2.292

Sy, S. R., & Schulenberg, J. E. (2005). Parent beliefs and children's achievement trajectories during the transition to school in Asian American and European American families. *International Journal of Behavioral Development, 29,* 505–515. http://dx.doi.org/10.1177/01650250500147329

Tamborini, C. R., Kim, C., & Sakamoto, A. (2015). Education and lifetime earnings in the United States. *Demography, 52,* 1383–1407. http://dx.doi.org/10.1007/s13524-015-0407-0

Torgesen, J. K., Wagner, R. K., & Rashotte, C. A. (1999). *Test of word reading efficiency*. Austin, TX: Pro-Ed. Publishing.

Tynkkynen, L., Tolvanen, A., & Salmela-Aro, K. (2012). Trajectories of educational expectations from adolescence to young adulthood in Finland. *Developmental Psychology, 48,* 1674–1685. http://dx.doi.org/10.1037/a0027245

Williams, J., & MacKinnon, D. P. (2008). Resampling and distribution of the product methods for testing indirect effects in complex models. *Structural Equation Modeling, 15,* 23–51. http://dx.doi.org/10.1080/10705510701758166

Yamamoto, Y., & Holloway, S. D. (2010). Parental expectations and children's academic performance in sociocultural context. *Educational Psychology Review, 22,* 189–214. http://dx.doi.org/10.1007/s10648-010-9121-z

Yen, C., Konold, T. R., & McDermott, P. A. (2004). Does learning behavior augment cognitive ability as an indicator of academic achievement? *Journal of School Psychology, 42,* 157–169. http://dx.doi.org/10.1016/j.jsp.2003.12.001

Received September 21, 2016
Revision received April 3, 2017
Accepted April 11, 2017 ■

This document is copyrighted by the American Psychological Association or one of its allied publishers.
This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.