PARENTS' MOTIVATIONS FOR INVOLVEMENT IN THEIR CHILDREN'S EDUCATION

by

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Abstract

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by

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This study sought to examine parents' motivations for involvement in the education of their 5th through 12th grade children. Using an online version of a questionnaire developed by Hoover-Dempsey, Sandler, and their colleagues (Hoover-Dempsey & Sandler, 2005; Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005), this study explored how well Hoover-Dempsey and Sandler's revised model of motivations for parent involvement (Hoover-Dempsey & Sandler, 2005) predicted parents' reports of their home-based and school-based involvement. Predictor variables included parents' perceived role construction for involvement; self-efficacy for helping their children succeed in school; perceptions of general school invitations, specific teacher invitations, and specific child invitations to involvement; and perceptions of personal skills and knowledge and personal time and energy for involvement.

Participants included 207 parents of 5th through 12th graders. Regression analysis confirmed that Hoover-Dempsey and Sandler's model (1995, 1997, 2005) significantly predicted parents' reports of both home-based and school-based involvement. Role construction and child invitations to involvement were significant predictors of parents' reports of both types of involvement. In addition, parents' perceptions of personal skills and knowledge for involvement significantly predicted reports of home-based involvement, and parents' perceptions of specific

teacher invitations to involvement as well as personal time and energy for involvement significantly predicted parents' reports of school-based involvement.

There was a trend toward lower levels of reported home-based and school-based involvement for parents of older students. Parents of older students also reported fewer perceived invitations from teachers to involvement, fewer perceived invitations from children to involvement, and lower perceptions of personal skills and knowledge for involvement. This study confirms the utility of Hoover-Dempsey and Sandler's model of motivations for parent involvement (1995, 1997, 2005) for predicting the involvement practices of parents of 5th through 12th graders.

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Chapter 1: Introduction

It is widely recognized that parent involvement has a positive effect on children's success in school. Stemming from the years of research in this area, Title I of the No Child Left Behind Act (NCLB) requires that local education agencies receiving federal funds "develop jointly with, agree on with, and distribute to, parents of participating children a written parent involvement policy" (NCLB, 2002, p. 1501) and put aside not less than 1% of the funds they receive for this purpose, "including [for programs] promoting family literacy and parenting skills" (p. 1502).

Research shows that parent involvement increases student achievement (e.g., Fan & Chen, 2001; Jeynes, 2003, 2005, 2007), motivation (Ibañez, Kuperminc, Jurkovic, & Perilla, 2004), and school attendance (Fan & Chen, 2001), as well as decreases dropout rates (Barnard, 2004; Blondal & Adalbjarnardottir, 2009; Englund, Egeland, & Collins, 2008; Jimerson, Egeland, Sroufe, & Carlson, 2000). Parents' involvement in their children's lives in general also improves emotional adjustment and behavior (Kerr, Beck, Shattuck, Kattar, & Uriburu, 2003; Schaefer & Briesmeister, 1989; Webster-Stratton, Reid, & Hammond, 2001). Englund et al. even found, through their longitudinal research, that students who are on a successful path both academically and behaviorally can potentially veer off this course without parental support.

Defining what constitutes parent involvement can be problematic, as research has shown that parents and school staff have only somewhat overlapping perceptions of the construct. Many teachers define parent involvement based on parents' presence at the school (Lawson, 2003), and many parents define parent involvement more broadly and consider that they are involved with their children's education even when it is "behind the scenes" at home, in the form of encouragement, moral support (Auerbach, 2007), and help with homework (e.g., Cooper, Lindsay, & Nye, 2000; Hoover-Dempsey, Battiato, Walker, Reed, DeJong, & Jones, 2001;

Walker, Hoover-Dempsey, Reed, & Jones, 2000). Walberg (1984) termed the latter type of involvement the "curriculum of the home" (p. 400) and indicated that parents create an overall home environment of support, discussions, supervision, and life lessons that support children both academically and personally. However, this type of involvement, although the evidence of it emerges repeatedly in the research literature (e.g., Jeynes, 2005; Pomerantz, Moorman, & Litwack, 2007), can go unnoticed by teachers (Lawson, 2003).

Many teachers report wanting parents to be involved at school (e.g., Lawson, 2003), but some parents believe that, unless they are personally invited to school by a teacher, they are interfering where they are not wanted. Hispanic families, for example, often keep their distance from school not because they do not want to be involved in their children's education but out of respect for the teachers (e.g., Wong & Hughes, 2006; Yan & Lin, 2005). In addition, although teachers may believe that they are, in fact, personally inviting parents to become involved in school, some parents may interpret these invitations simply as information about events or children's experiences in the classroom (Anderson & Minke, 2007). Parents and teachers seem to have different worldviews (Lawson, 2003), which may be especially true when they are from different cultural or ethnic backgrounds. To be sure, it is important to have a clear definition of parent involvement so that research is meaningful, and it is imperative to consider cultural issues in this area of research as well.

Defining Parent Involvement

The parent involvement guidelines of NCLB (2004) define parent involvement as, "the participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities" (p. 3). Unfortunately, this definition does not do much to clarify the meaning of parent involvement.

Broadly speaking, parent involvement refers to parents' roles in their children's everyday lives. It includes a wide variety of behaviors, such as the home-based activities of helping with homework, encouraging students in school and in other areas of their lives, and placing limits on how and with whom children spend their free time. School-based involvement includes parents' attendance at or engagement in the educational experiences their children have at school, such as activities or events at the school and communication with teachers (e.g., Auerbach, 2007; Blondal & Adalbjarnardottir, 2009; Jeynes, 2005). Further complicating the definition of parent involvement is that parents' roles change from the time children transition to school for the first time and make their way through elementary, middle, and eventually high school (e.g., Patall, Cooper, & Robinson, 2008).

Theoretical Approaches to Parent Involvement

There are several popular theories of parent involvement that explain how and why parents get involved in their children's education and much research regarding what effect this has on children's success in school and in life. Epstein and her colleagues (Epstein, 1992; Epstein, Coates, Salinas, Sanders, & Simon, 1997; Simon & Epstein, 2001) posited six types of parent involvement:

1. Parenting includes nurturing, child rearing practices, and other positive conditions that parents create in the home that support learning.
2. Communicating involves discussions between parents and teachers or school administrators regarding school activities.
3. Volunteering involves direct parent involvement in the school.
4. Learning at home includes helping with homework and other activities parents engage in at home to support learning.

5. Decision making refers to parents' involvement with school boards, advocacy organizations, and policies regarding school practices.
6. Collaborating with the community involves activities in the neighborhood or surrounding areas, but outside the home or school, that parents engage in to support their children's learning.

Epstein (1992) and Simon and Epstein (2001) also discussed four separate theories that may explain the value of parent involvement on student education. These include (a) the Separate Influence Theory, which states that children obtain different benefits from their experiences at home and at school; (b) the Sequential Influence Theory, which posits that parents are influential in the early years as they prepare their children for school and then, once children enter school, it is the school that carries the primary responsibility for education; (c) the Embedded Influence Theory, which is an ecological theory that states that students are influenced by many of the different systems in which they are involved; and (d) the Overlapping Influence Theory, another ecological theory, which states that these many spheres of influence overlap with one another and are influenced by time (developmental changes) and behavior.

DePlanty, Coulter-Kern, and Duchane (2007) differentiated among types of factors that influence how and why parents become involved in their children's education. For example, they wrote that parental factors including socioeconomic status (SES), parents' level of education, and parents' knowledge about specific academic subject areas influence parents' involvement. They also discuss school and teacher factors that influence parents' involvement, including how much encouragement the school provides for parents to become involved, teacher time constraints, and even teachers' sense of efficacy.

Another popular model in the literature on parent involvement is Hoover-Dempsey and Sandler's model (1995, 1997, 2005), which states that the extent to which parents become involved in their children's education depends on how parents define and perceive their role; how confident they are in assuming that role; whether they perceive that the school, teachers, and their children want them to be involved; and how they feel about challenges from life context variables such as skills and knowledge as well as time and energy. It is this model that this study of parent involvement followed.

Hoover-Dempsey and Sandler's revised model (2005), which applies to home- as well as school-based involvement, describes seven main constructs in three different categories concerning why parents become involved in their children's education (see Figure 1). In the first category, parents' motivational beliefs, there are two constructs: (a) parents' role construction, or how parents view and understand their roles and how that understanding affects which home- and school-based activities they believe necessitate their participation; and (b) parents' level of self-efficacy, or the belief parents have that, through their involvement, they have the ability to help their children learn and perform better in school. Next is parents' perceptions of invitations from others to involvement, which include general invitations from the school and specific invitations from teachers and children. Lastly, there are two life-context variables: (a) parents' perceptions of the skills and knowledge they have to help their children with their schoolwork and be involved with the school, and (b) parents' perceptions of the time and energy they have to be involved.

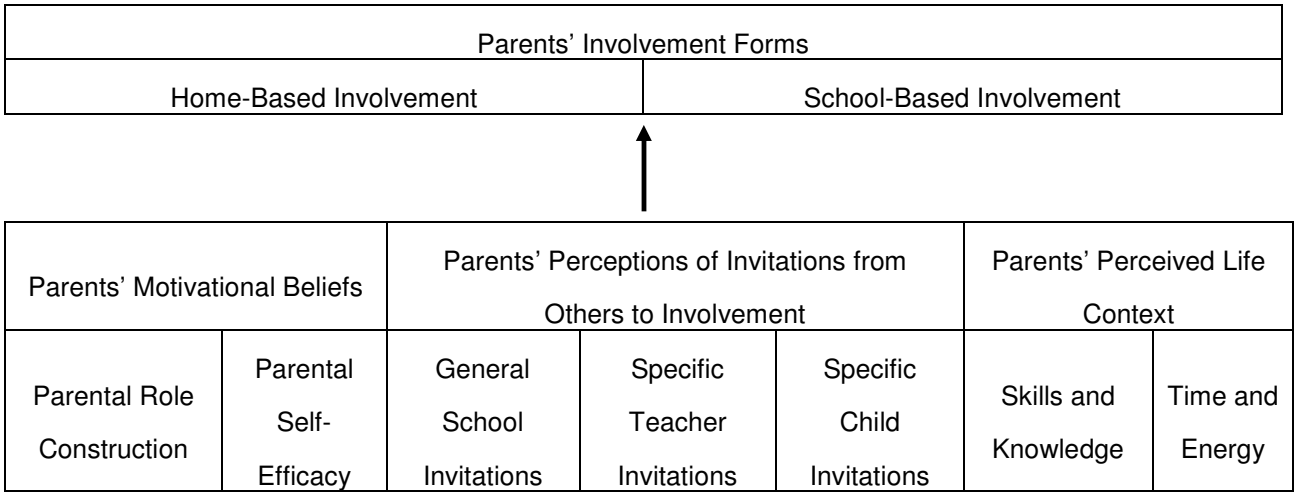

Figure 1. The first level of Hoover-Dempsey and Sandler's (2005) revised theoretical model of the parent involvement process (Green et al., 2007; Walker et al., 2005).

Hoover-Dempsey and Sandler (1995, 1997, 2005) further posit that role construction—what parents think they should do—is one of the most important predictors of parent involvement. This, they theorize, is followed in importance by self-efficacy, or how parents feel about their ability to do what they think they should do. The theory also states that self-efficacy may moderate how parents feel about their roles.

This Study

Researchers, educators, and other school professionals have little doubt that parent involvement in their children's education is important. What we are less sure of is what specific factors motivate parents to be involved. This study investigated how well parents' motivations for involvement, such as their beliefs and understanding of their roles and their ability to help their children succeed in school, predicted their reported levels of both home- and school-based involvement. Concentrating on the upper elementary, middle, and high school levels (5th through 12th grades), the study attempted to answer the basic question, "What motivates parents to become involved in their children's education?" Following Hoover-Dempsey and Sandler's

model (1995, 1997, 2005), this study measured parents' reports of home- and school-based involvement as well as motivators for this involvement, namely role construction; self-efficacy; perceived invitations to involvement from schools, teachers, and children; perceived skills and knowledge for involvement; and perceived time and energy for involvement.

Participants included 207 parents of 5th through 12th graders. Regression analysis confirmed that Hoover-Dempsey and Sandler's model (1995, 1997, 2005) significantly predicted parents' reports of both home-based and school-based involvement. Role construction and child invitations to involvement were significant predictors of parents' reports of both types of involvement. In addition, parents' perceptions of personal skills and knowledge for involvement significantly predicted reports of home-based involvement, and parents' perceptions of specific teacher invitations to involvement as well as their perceptions of their personal time and energy for involvement significantly predicted parents' reports of school-based involvement.

There was a trend toward lower levels of reported home-based and school-based involvement for parents of older students. Parents of older students also reported fewer perceived invitations from teachers to involvement, fewer perceived invitations from children to involvement, and lower perceptions of personal skills and knowledge for involvement.

The results of this study have implications for practice and future research. For example, it seems important to increase opportunities for children to invite parents to become involved as well as provide information to teachers on the importance of parent engagement. In addition, it would be valuable to examine developmental trends in parent involvement in longitudinal analyses in order to further examine the reported decrease in parent involvement as students progress in school.

Chapter 2: Literature Review

This chapter examines the research regarding the various ways parents can become involved in their children's education and how different types of involvement affect student achievement. It also presents an expanded view of several aspects of Hoover-Dempsey and Sandler's model of parent involvement (1995, 1997, 2005). Finally, it concludes with a discussion of the pilot study for this project and a rationale and research questions for this study.

The Effect of Parent Involvement on Student Achievement

Parent involvement and its impact on student achievement is a popular topic of study. There have been several large-scale studies examining the effect of parent involvement on achievement, and numerous individual studies have provided the bases of several statistical examinations of the literature. These investigations have drawn some similar and some differing conclusions regarding the effect of different features of parent involvement on student achievement.

Yan and Lin (2005) conducted a study using data from the National Education Longitudinal Study: 1988 (Ingels, Abraham, Rasinski, Karr, Spencer, & Frankel, 1990, as cited in Yan & Lin). They obtained complete data for 19,386 students. Constructs measured included: (a) family obligations, including participation in parent-teacher organizations, attendance at high school programs about future planning, and discussions with teens about school topics; (b) parent information networks, including contact with the school regarding students' performance and behavior, knowledge of students' schoolwork, and knowledge about their children's friends; and (c) family norms, including family rules, educational desires and expectations, and parent-child relationships.

Yan and Lin (2005) found that, overall, parents' expectations of their children's success in school was the strongest predictor of their 12th grade students' mathematics achievement. However, the four groups their study included (Asian American, Black, Hispanic, and White students) had differing results. Parents' educational expectations was the only significant predictor of Hispanic students' school achievement, whereas every measure of parent involvement except family rules showed significant impacts (some positive and some negative) on White students' mathematics achievement.

In a meta-analysis of 21 studies on the impact of parent involvement on the academic achievement of racial or ethnic minority children, Jeynes (2003) found that parent involvement overall had a significant, positive impact on students' achievement. However, he also found that various aspects of involvement affected different students in different ways. For example, parental attendance at school functions and parents' rules regarding children's school and/or leisure activities negatively affected students' achievement. However, parents' encouragement for students to read impacted positively on standardized test scores.

Jeynes (2003) also found that parent involvement affected various aspects of achievement, including both GPAs and standardized test scores. However, students' GPAs were more strongly affected by parent involvement than were their individual-subject standardized test scores. Jeynes (2003) noted that it was possible that teachers' perceptions of parent involvement accounted for this difference, meaning that teachers notice whether or not parents are involved and grade students accordingly. Standardized tests, of course, are not sensitive to level of parent involvement.

In addition, Jeynes (2003) found that Hispanic students benefited more from parent involvement than did Asian American students. He based this conclusion on the finding that, in

studies with combined Hispanic and Asian American populations, the students showed greater benefits than those in studies that included only Asian American students (there were no studies in this meta-analysis that included only Hispanic students). Jeynes (2003) hypothesized that Asian American students achieve as a result of other motivators that are not present for Hispanic students, which makes parent involvement even more important for Hispanic students.

Fan and Chen (2001) found similar results to those of Jeynes (2003) in their meta-analysis of parent involvement and academic achievement. First, like Jeynes (2003), they found that parent involvement had a stronger effect on overall measures of student achievement, such as GPA, than on individual subject measures, such as test scores in reading and mathematics. In addition, Fan and Chen found that parents' expectations for children's school success correlated strongest with students' achievement. Moreover, parents' supervision of their children at home had a weak relationship with achievement—although not a negative one, as in Jeynes's (2003) results.

Fan and Chen (2001) hypothesized that this last finding may be a result of poor school performance encouraging greater levels of parental supervision. That is, parents who supervised their children more closely may have been doing so because their children were already doing poorly in school. This also may explain the negative correlations Jeynes (2003) found for this aspect of involvement. This implies that, for these students, causation may be in the opposite direction than originally hypothesized. Because of the nature of most research in this area, it is difficult to know whether this causal direction holds for the relationships between other levels and areas of both parent involvement and achievement as well.

Jeynes (2005) conducted a meta-analysis of 41 studies on the relationship between parent involvement and achievement of urban elementary school children. Overall, considering a broad

definition of parent involvement, Jeynes (2005) found that the regression coefficients for the relationship to student achievement were approximately .70 ($p < .01$) to .75 ($p < .01$), supporting his earlier findings (2003), as well as those of Fan and Chen (2001). He found that, for urban elementary school students, parents' expectations for their children's success produced the largest effect size, with a regression coefficient of .58 ($p < .05$). Parenting style also had an effect on achievement ($r = .31$, $p < .01$). Parent participation, or attendance at school events, one of the most widely studied variables, yielded a regression coefficient of .21 ($p < .05$). Interestingly, parents helping their children with homework yielded a negative effect size, though it was weak and nonsignificant ($r = –.08$). In this investigation, Jeynes (2005) found no statistically significant difference in effect sizes when comparing studies with mostly racial or ethnic minority students to those with mostly White students.

In his most recent meta-analysis, Jeynes (2007) aggregated the results of 52 studies on the impact of parent involvement on urban secondary school children. Once again, he found that parent involvement had an overall positive effect on student achievement. However, in contrast to the regression coefficients of .70 to .75 he found for his meta-analysis involving urban elementary school children, the regression coefficients for the studies of urban secondary school children were .40 ($p < .01$) to .55 ($p < .0001$). Although still a significant impact, they are substantially lower than those for parents of elementary school students, which is understandable given the decreased overall involvement parents have in their children's lives as children get older (e.g., Drummond and Stipek, 2004; Green et al., 2007; Simon & Epstein, 2001). However, the statistics still show that parent involvement does make a difference.

Once again, as in his 2005 study, Jeynes (2007) found that parental expectations yielded the largest effect sizes. However, this regression coefficient of .88 ($p < .0001$) was much larger

than the coefficient of .58 he found for elementary school students, suggesting that as students get older their parents' expectations become even more important. Parenting style also yielded a higher effect size for secondary school students than for elementary school students (.40 versus .31). One of the most significant differences Jeynes (2007) found between these two meta-analyses was for helping with homework. Recall that for urban elementary school students, this effect was nonsignificant and negative. However, for urban secondary school students, the effect was .32 ($p < .05$), which can be considered a medium impact. As other investigations have found, the impact was significant for grades but not for standardized test scores. It should be noted that, just as the definition of parent involvement is often vague, it is not clear how each individual study defined help with homework. Although "involved' for some parents may have meant merely checking that homework was completed, other parents may have checked the accuracy of answers, and still others may have sat down with their children to help them complete assignments, possibly using homework time as an opportunity not only to help their children but also to work on additional learning or other interactive experiences.

In both of his more recent meta-analyses, Jeynes (2005, 2007) studied parent involvement programs which are, he wrote, "programs meant to encourage parental support in their child's schooling" (Jeynes, 2005, p. 260). He found these programs to have a positive impact on children's success in school for both elementary (2005) and secondary school students (2007). Jeynes (2005, 2007) noted that, although parents who help their children without the support of such programs tend to help their children more and, as a result, have a larger impact on children's success, parent involvement programs are nonetheless important. This is because they encourage parents who would not normally be involved in their children's schooling to get involved, and this involvement seems to have a positive impact on achievement. This is an

important finding that Jeynes (2005) wrote "suggests parent involvement can be a means of reducing the achievement gap between these students and those more advanced scholastically" (p. 261).

Jeynes (2005, 2007) also found that individual components of parent involvement were not as strongly related to achievement outcomes as parent involvement as a whole. The pilot study for this project (Jaspen & Tryon, 2009) obtained similar findings, the results of which helped shape the goals for this study. In addition, Jeynes (2005) noted that included in the most effective parent involvement components were what he calls "some of the more subtle aspects of family support" (p. 262), such as parental expectations and parenting style. He called these variables that create "a general atmosphere of involvement" (Jeynes, 2005, p. 262). He wrote that this finding is encouraging for several reasons. First, parents who do not have time (or who do not want) to volunteer at the school, for example, can have an impact on their children's success in less direct ways—ways with which they may be more comfortable. Second, parents who feel they are unable to help their children with their homework, either due to time restrictions or feelings of inadequacy, can be involved and have an impact on their children's education in different ways.

Overall, Jeynes's (2005, 2007) findings are promising, especially for urban parents who may not believe they have an impact on their children's education. These findings are also supported in other research, which has found that parenting style is a stronger predictor longitudinally of school dropout than is parent involvement in school activities (e.g., Blondal & Adalbjarnardottir, 2009).

Why and How Parents Are Involved in Their Children's Education

Parents can become involved in schools in many ways—from volunteering on school boards to assisting children with homework. Different types of involvement have differing effects on children's success in school. Pomerantz et al. (2007) reviewed two major types of models of parent involvement. The first are skill development models, which propose that parents' involvement helps children improve their academic and cognitive skills. Motivational development models, on the other hand, propose that parents' involvement enhances children's achievement through providing the message that school is important and, therefore, increasing motivation. Pomerantz et al. wrote, "It is likely that parents' involvement in children's schooling enhances children's achievement through both skill and motivational development" (p. 376). Indeed, skill and motivation are naturally related.

Pomerantz et al. (2007) also stressed that it is the manner and not the extent of parent involvement that has the potential to make an impact on children's success. Furthermore, the authors suggested that parents who are involved in their children's education are also likely involved in other areas of their children's lives. As such, there is an overall atmosphere of involvement in the home (Jeynes, 2005; Pomerantz et al., 2007; Walberg, 1984).

Smith, Wohlstetter, Kuzin, and De Pedro (2011) hypothesize that there is a continuum of parent involvement on one end and parent engagement on the other. In their qualitative study that included semistructured interviews with the administrators of 12 charter schools throughout the United States, the authors found that, on one end of the continuum, schools inform parents of what the school is doing. In the middle of the continuum, parents support children's learning by being involved both at home and at school. Finally, at the other end of the continuum, parents are

engaged, meaning that they are involved in educational programming and issues related to school governance and policy.

Parents' motivational beliefs. Just as parents involve themselves in differing ways in their children's education, they have different reasons for becoming involved. Hoover-Dempsey and Sandler (1995, 1997, 2005) have hypothesized and demonstrated through research (Hoover-Dempsey & Sandler, 2005; Reed, Jones, Walker, & Hoover-Dempsey, 2000; Walker et al., 2005) that parents' role construction is one of the most powerful predictors of parent involvement, followed by parents' self-efficacy for helping their children succeed in school.

***Role construction*.** Parental role construction for involvement is the first of the motivational beliefs that Hoover-Dempsey and Sandler (2005) hypothesized affect parents' involvement in their children's education, as well as in their lives in general. Previously defined as what parents think they should do in terms of involvement, role construction is, more elaborately, how parents view and understand their roles and how that understanding affects their involvement.

Role construction is grounded in role theory (Biddle, 1986), which presumes that human beings behave in differing and predictable ways depending on the situation and their personal identification. Role theory assumes that expectations, which are learned through experience, generate individuals' roles.

Walker et al. (2005) identified three patterns of role construction: parent-focused, school-focused, and partnership-focused. Parent-focused role construction includes parents' beliefs and behaviors that show that parents believe that they are responsible for their children's education. In contrast, school-focused role construction reflects parents' beliefs and behaviors that the school has that responsibility. Finally, partnership-focused role construction, as the name

suggests, is parents' idea that they share the responsibility for children's education with the school. Given these three scenarios, Walker et al. (2005) wrote, "Role construction functions as a motivator of parent involvement because it helps parents imagine and anticipate how they might behave in relation to a host of activities relevant to the child's educational success" (p. 89).

Self-efficacy. For decades, theorists and researchers have studied the effect of students' self-efficacy on their own achievement (e.g., Bandura, 1982; Schunk, 1989; Zimmerman & Schunk, 1989). The concept of self-efficacy originates from Bandura's (1982) social cognitive learning theory and Schunk's (1989) theory of self-efficacy for learning. According to social cognitive theory, self-efficacy refers to a person's beliefs about his or her ability to accomplish a task (Bandura, 1982). Self-efficacy is distinct from, but related to, both self-concept and self-esteem (Schunk, 2004).

Schunk (2004) defined self-concept as "one's collective self-perceptions formed through experiences with and interpretations of the environment" (p. 113). As such, he wrote, "Self-concept is one's general self-perception that includes efficacy in different areas" (p. 113). Self-efficacy theory posits that specific self-evaluations are more strongly related to outcomes than the more general self-concept judgments people make (Linnenbrink & Pintrich, 2003; Schunk, 2004).

Whereas self-efficacy is a nonemotional judgment of ability, Linnenbrink and Pintrich (2003) wrote, "Self-esteem involves individual's emotional reactions to their actual accomplishments" (p. 121). In sum, self-efficacy is your belief about whether or not you can accomplish something (Bandura, 1982), self-concept is your general perception of yourself (Schunk, 2004), and self-esteem is how you feel about yourself and your accomplishments (Linnenbrink & Pintrich, 2003).

Our feelings of self-efficacy can motivate us to take action or refrain from taking action, depending on whether we believe we can do something well (Schunk, 2004). Individuals who have low self-efficacy for a particular task—that is, those who believe they cannot execute a task successfully—may avoid that task, and those who believe they can execute a task with success are more likely to engage in the task. Thus, people's level of self-efficacy can help account for why those with similar knowledge and skills demonstrate different behaviors (Pajares & Schunk, 2001). This may help to explain why parents who have similar beliefs about the roles they are supposed to have in their children's education have differing levels of involvement.

Self-efficacy is related to the outcomes we expect to occur from our engagement in a task (Pintrich & Schunk, 2002). However, Bandura (1977) differentiated efficacy expectations from outcome expectations, theorizing, "An outcome expectancy is defined as a person's estimate that a given behavior will lead to certain outcomes. An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes" (p. 193). Thus, it is possible for parents to expect that their involvement will help their children succeed but doubt their ability to produce the expected result. Furthermore, Bandura (1977) hypothesized that the strength of self-efficacy determines persistence in the face of obstacles, which may include life context variables such as time and energy (e.g., Hoover-Dempsey & Sandler, 2005).

For parent involvement, self-efficacy refers to parents' beliefs about whether or not they have the ability, through their involvement, to help their children learn and perform better in school (Hoover-Dempsey & Sandler, 1995, 1997). These feelings of self-efficacy influence parents' level and frequency of involvement in their children's school experiences, as well as their persistence with such involvement, for example, as students get older, ask them not to be involved, otherwise rebel against their involvement, do poorly in school, or behave badly.

Research on motivational beliefs. In their study of 250 elementary school children from a primarily low-income, urban area, Reed et al. (2000) asked parents of prekindergarten through sixth graders to fill out questionnaires indicating how they were involved in their children's education and how they felt about their involvement. In order to assess parents' role construction, the researchers asked parents to respond to items regarding their perceived level of responsibility in terms of explaining difficult assignments to their child and completing and understanding homework with them, as well as about their communications with teachers, such as whether they believed their child's teacher ought to inform them about problems before they could do something about them, whether they found it helpful to talk with teachers, and how well their child's teacher knew them.

The authors measured parents' sense of self-efficacy for helping their children achieve in school by asking them to respond to items indicating whether they knew how to help their children do well and whether they believed they could get through to their children. They also asked parents how and how often their children's teachers asked them to get involved in homework and other school activities, such as visiting the classroom. Lastly, parents reported on the ways they had actually been involved, such as helping their children with homework and visiting the classroom (Reed et al., 2000).

Reed et al. (2000) confirmed Hoover-Dempsey and Sandler's hypothesized model of motivations for parent involvement (1995, 1997, 2005) that states that parents' role construction, self-efficacy, and perceived teacher invitations to involvement predict parents' level of involvement. However, in this study, instead of self-efficacy being a deciding factor of reported involvement, as Hoover-Dempsey and Sandler (1995, 1997, 2005) have theorized, the authors found that parents' role construction mediated parents' self-efficacy and their involvement, and

that role construction and perception of teacher invitations were the most important factors in predicting parents' reports of involvement in their children's education.

In a follow-up study to test their original theoretical model (Hoover-Dempsey & Sandler, 1995, 1997) as well as to pilot new survey instruments, Hoover-Dempsey and Sandler (2005) reported on the results of the parents of 877 children in kindergarten through sixth grade. Once again, they found that parents' role construction was the most significant variable in predicting overall reports of parent involvement. Specifically, they found that role construction predicted reports of school-based involvement and that both role construction and self-efficacy predicted reports of home-based involvement.

Hoover-Dempsey and Sandler (2005) concluded, "Role construction and efficacy both may be manifested in invitations to involvement and parents' perception thereof" (p. 40). Thus, once more, they found that these factors were interrelated for parent involvement for these younger students.

In a study designed to test Hoover-Dempsey and Sandler's expanded theory of parents' motivations for involvement in their children's education (2005), Green, Walker, Hoover-Dempsey, and Sandler (2007) analyzed responses of 853 parents of first through sixth graders. The authors found, all together, that the model constructs of parents' motivational beliefs (role construction and self-efficacy for helping their children succeed in school); parents' perceptions of invitations from the school, teacher, and child to become involved; and parents' perceptions of life context variables (skills and knowledge as well as time and energy for involvement) predicted a significant portion of the variance of reported parent involvement when controlling for SES.

The participants in Green et al.'s (2007) study included students attending schools in an economically and culturally diverse metropolitan area. Parents' role construction (role activity beliefs) was measured with a questionnaire that assessed parents' beliefs about what they believed they should do in terms of involvement by their responses to items on a six-point Likert-type scale ranging from *strongly disagree* to *strongly agree* (e.g., "It's my job to explain tough assignments to my child," and "I believe it is my responsibility to volunteer at the school."). In order to measure parents' self-efficacy, parents rated the extent to which they agreed with statements such as, "I feel successful about my efforts to help my child learn."

Parents also rated the extent to which they felt welcome in their child's school or were asked by their child or their child's teacher to become involved. Lastly, parents reported on their perceptions of their personal skills and knowledge germane to their involvement (e.g., "I know enough about the subjects of my child's homework to help him or her" and "I know about special events at my child's school") and whether they felt they had the time and energy to be involved in events at school (Green et al., 2007).

Green et al.'s (2007) results indicated that, for reported home-based involvement, parents' self-efficacy, parents' perceptions of child invitations to involvement, and parents' perceptions of time and energy predicted approximately 39% of the variance. With the addition of role construction and perception of teachers' invitations, these same variables (self-efficacy, child invitations, and time and energy) accounted for approximately 49% of the variance in reports of school-based involvement.

Although involvement was lower for parents of elementary school students (Grades 1–4) than for those of middle school students (Grades 5–6), the model's predictive power was maintained. For parents of elementary school students, the model predicted 27% of the variance

in reported home-based involvement and 47% of the variance in reported school-based involvement versus 48% of the variance for middle school parents' reports of home-based involvement and 36% of the variance in middle school parents' reports of school-based involvement (Green et al., 2007).

Using a similar survey with expanded questions on different types of role construction, Walker et al. (2011) surveyed 147 Hispanic parents of students in first through sixth grades in a large urban school district. Their results indicated that role construction and children's invitations to involvement motivated these parents to become involved at home, and that parents' perceptions of both teachers' invitations to involvement and their own time and energy motivated them to become involved directly at school.

For the parents in Green et al.'s (2007) study, these same factors, as well as some additional variables (self-efficacy and teacher invitations for reported home-based involvement, and child invitations for reported school-based involvement), were significant predictors of reports of home- and school-based involvement. However, for the parents in this study (Walker et al., 2011), these fewer predictor variables (role construction and children's invitations to involvement only) accounted for an even larger portion of the variance in parents' reported home-based involvement than in the Green et al. study (55% in this study versus 39% in Green et al., 2007) and a similar portion of the variance in reported school-based involvement (49% for this study and 48.8% in Green et al., 2007).

Overall, Walker et al. (2011) concluded that the Hoover-Dempsey and Sandler model of motivations for parent involvement (1995, 1997, 2005) was applicable to this population of Hispanic parents of public elementary and middle school students. This study showed that the model not only detected that parents believed that they were actively engaged in their children's

education in the home, as has been shown in other studies (e.g., De Gaetano, 2007), but also uncovered some of parents' motivations for this involvement.

Anderson and Minke (2007) used Hoover-Dempsey and Sandler's original model of motivations for parent involvement (1995, 1997) in order to examine the relationships among parents' reported levels of home- and school-based involvement and their role construction, self-efficacy, perceived resources, and perceptions of teacher invitations. The study included the surveys of 351 parents of kindergarteners through fifth graders in three low-income, urban elementary schools. The students were primarily Black (49%) and Hispanic (39%), and 77% reported receiving free or reduced-price lunch.

Anderson and Minke (2007) measured parents' role construction with a scale developed by Sheldon (2002, as cited in Anderson & Minke) that questioned parents about their beliefs about the role they are supposed to play in their children's education. This scale is similar to the one created by Hoover-Dempsey and Sandler (1995, 1997) and includes items such as, "It is parents' responsibility to help with homework" and "It is parents' responsibility to attend parent-teacher conferences." They rated the 18 items on a five-point Likert-type scale ranging from *strongly disagree* to *strongly agree*. In order to measure parents' self-efficacy, the authors used Hoover-Dempsey and Sandler's seven-item scale as described above.

In order to measure parents' perceptions of their personal time and energy for involvement, as studied by Hoover-Dempsey and Sandler (1995, 1997), Anderson and Minke (2007) used the Family Resource Scale (Dunst & Leet, 1987, as cited in Anderson & Minke, 2007), which contains 30 items related to both parents' perceptions of their time and energy and the sufficiency of their financial resources, rated on a five-point, Likert-type scale ranging from *not at all adequate* to *almost always adequate*.

Anderson and Minke (2007) measured parents' perceptions of specific teacher invitations with an adaptation of an unpublished scale created by Hoover-Dempsey, Sandler, and colleagues (2002, as cited in Anderson & Minke, 2007). Parents answered questions related to ongoing school activities (e.g., "My child's teacher asked me or expected me to help my child with homework") rated on a five-point scale from *never* to *almost every day* as well as questions related to more time-limited events (e.g., "My child's teacher asked me to attend an open house or back to school night") on a three-point scale with the following answer choices: *never*, *once*, and *more than once*.

In order to measure parent involvement practices at home and school, Anderson and Minke (2007) borrowed items from several existing scales. They separated items into two categories based on the frequency of involvement. Parent Involvement at School Ongoing included 15 activities that parents could potentially engage in everyday, such as helping their children with their schoolwork (answered on a five-point, Likert-type scale ranging from *never* to *almost every day*). Parent Involvement at School Events included six activities that are expected to occur less frequently throughout the school year, such as helping out in the classroom (answered on a three-point Likert-type scale with choices of *never*, *once*, and *more than once*).

Anderson and Minke's (2007) results are similar to those found in previous research (e.g., Green et al., 2007; Hoover-Dempsey & Sandler, 2005). Specifically, they found that parents' role construction was related to parents' report of their home- and school-based involvement, self-efficacy was related to parents' home-based involvement, and specific teacher invitations had the strongest relationship with parents' reports of their overall involvement behaviors. Moreover, resources did not influence involvement.

Upon an investigation of meditational variables, Anderson and Minke (2007) found that role construction had no direct effect on parents' reported home-based involvement. They theorize that parents' perceptions of invitations to involvement may influence parents' role beliefs, which may then influence their actual involvement. In addition, they posit that, given the mixed results regarding parents' sense of self-efficacy, this construct may be too complex for the current measures to assess accurately.

Efficacy beliefs and achievement. Bandura, Barbaranelli, Caprara, and Pastorelli (1996) conducted a longitudinal study regarding the network of psychosocial influences through which efficacy beliefs affect children's academic achievement. In their study, they included both parents' and children's efficacy beliefs, as well as many other factors. This report of the study will focus on their findings regarding parents' efficacy beliefs and their effect on involvement and children's achievement.

The participants in Bandura et al.'s (1996) study were 279 children ages 11 to 14 in the sixth and seventh grades at two schools in a socioeconomically diverse neighborhood near Rome. The mothers of 88% of these students also participated in the study. At the middle and end of the year, teachers graded students in each subject in order to represent a measure of academic achievement. The researchers measured parents' self-efficacy with an eight-item questionnaire that asked mothers, for example, how much influence they thought they could have over children's development and about their level of efficacy to encourage children's interest in school and help children with their schoolwork. In addition, they measured both parents' and children's academic aspirations by asking children about their own aspirations as well as the aspirations they believed their parents held for them. Mothers completed items about the value of academic activities and the educational aspirations they held for their children.

The researchers found that higher parental efficacy was associated with higher academic aspirations for children (as well as with other factors that are beyond the scope of this discussion). Further, both parental academic efficacy and parental educational aspirations for children were related to children's academic aspirations as well as other child factors. In turn, children's level of both academic efficacy and aspirations were associated with many factors, from behavioral problems (negative association) to academic achievement (positive association). Thus, although parents' self-efficacy was not directly related to their children's academic achievement, it affected it indirectly through children's self-efficacy. Bandura et al. (1996) conclude that these results "document the importance of the educational vision parents hold for their children and the parents' sense of efficacy that they can help their children realize those aspirations" (p. 1219).

Some research indicates that parents tend to be less involved with their children's science work than they are with math and reading (American Association for the Advancement of Science, 2001), and this may be due at least partially to low self-efficacy particularly related to science (Kaya & Lundeen, 2010). Parents often report that they do not possess enough science knowledge to help their children in this area (Cardoso & Solomon, 2002; Shymansky, Yore, & Hand, 1999; Solomon, 2003).

Following studies done by Cardoso and Solomon (2002), Shymansky et al. (1999), and Solomon (2003) on home-school science programs, Kaya and Lundeen (2010) conducted a study with parents after they attended an intervention called Family Science Night, which was intended to increase parents' involvement in children's science education. They surveyed 158 parents and interviewed a subset of 34 of them regarding their feelings about the intervention as well as about science in general. Family Science Night, an event that was implemented in two

elementary schools and designed for both students and parents, consisted of workshops and demonstrations using parents as co-learners and co-teachers in science. Many of the activities were meant to be fun as well as educational, and intended to show how children learn science in everyday life, using materials such as Alka-Seltzer, hardboiled eggs, and cornstarch.

The surveys from this descriptive study indicated that the event was successful in showing parents that science can, indeed, be enjoyable. Surveys also indicated that many parents "reported less than enthusiastic personal recollections of their own science instruction" (Kaya & Lundeen, 2010, p. 838). Parents acknowledged the importance of science learning, suggested that they would be interested in future home-school science events, and wanted to "break the cycle of non-interest and/or lack of proficiency in science subjects after experiencing science-friendly teaching and learning" (p. 838). This study, as well as the studies that came before it (i.e., Cardoso & Solomon, 2002; Shymansky et al., 1999; Solomon, 2003) also lend further support to the self-efficacy model of parent involvement—that is, that parents who do not believe they can successfully help their children in school (or in a particular subject) tend to be less involved.

In order to assess the influence of parents' self-efficacy on children's reading achievement, Lynch (2002) issued questionnaires regarding self-efficacy beliefs to parents of 66 students aged eight to nine years. For some children, both parents participated in the study, for a total of 92 parents (49 mothers and 43 fathers). Children's reading achievement was assessed as part of a larger family literacy project designed to help parents help their children read better. Lynch used the Test of Early Reading Ability (Reid, Hresko, & Hammill, 1989, as cited in Lynch, 2002), a standardized, individually administered instrument, to assess children's reading comprehension, alphabet knowledge, and knowledge of writing conventions. In addition, she

used the Reader Self-Perception Scale (Henk & Melnick, 1995, as cited in Lynch, 2002) to assess children's reader self-concept.

Lynch (2002) found no direct relationship between parents' self-efficacy beliefs and children's reading achievement. However, as earlier research has shown (e.g., Bandura et al., 1996), she found that parents' self-efficacy beliefs were related to children's reader self-perceptions which, in turn, were related to children's reading achievement.

Another study found that the effect of parents' self-efficacy on student achievement was mediated by yet another variable. Junttila, Vauras, and Laakkonen (2007) assessed the parenting self-efficacy of parents of 454 Finnish fourth graders as well as students' reading and math skills. Parents filled out the Self-Efficacy for Parenting Tasks Index (Coleman & Karraker, 2000, as cited in Junttila et al., 2007), which evaluates parents' self-efficacy for, among other dimensions, helping their children achieve academically. In order to assess students' math and reading achievement, the authors created their own standardized tests which, they wrote, are comparable to the Wide Range Achievement Test–Revised (Jastak & Wilkinson, 1984, as cited in Junttila et al., 2007).

Junttila et al. (2007) found that children's social competence mediated the relationship between parenting self-efficacy and children's academic achievement. Furthermore, they found that children's social competence also mediated the relationships between parents' self-efficacy and children's motivation.

Involvement outside of school. One of the most common ways that parents involve themselves in their children's education is through assistance with homework. In their review of the literature, Hoover-Dempsey et al. (2001) described several ways in which parents demonstrate involvement in their children's homework. For example, parents may (a) establish

environmental and psychological supports, (b) interact with the school or teacher regarding homework, (c) oversee the homework process, (d) comment on homework efforts or performance, or (e) engage actively in homework tasks.

Ingram, Wolfe, and Lieberman (2007) collected survey data from 220 parents of elementary age children in high-achieving, at-risk Chicago public schools. Because some studies have reported little to no effect and even negative effects of some types of parent involvement (e.g., Fan & Chen, 2001; Jeynes, 2003, 2005, 2007), Ingram et al. sought to determine which components of parent involvement were most frequent in high achieving schools.

The authors used the Family Involvement Questionnaire (Fantuzzo, Tighe, & Childs, 2000, as cited in Ingram et al., 2007), which is based on Epstein's (1992) framework and views parent involvement along three dimensions: home-based involvement, school-based involvement, and home-school conferencing. Parenting included providing for children's basic needs, such as food, clothing, and shelter, as well as providing school supplies and a place in the home for children to complete their work, limiting children's television viewing, and disciplining children. Learning at home included supervising and helping with homework, assisting in the development of children's social and other skills, taking children to cultural institutions such as zoos and museums, and even simply discussing the fun of learning with children. In addition, learning at home included discussing homework with teachers (Ingram et al., 2007).

Ingram et al. (2007) found that parents were significantly more likely to participate in parenting and learning at home than in the other activities that Epstein defines (communicating, volunteering, decision making, and collaborating with the community). Although the results by Ingram and her colleagues did not explain the potential effect these parent involvement activities had on children's achievement, this study was conducted at elementary schools that, despite

including a population of more than 50% low-income and more than 50% racial or ethnic minority students, were considered to be performing in the top third of the state of Illinois. It is helpful to study the activities in these schools as well as explore "how parents in high-achieving, at-risk schools define and interpret their roles" (p. 481) and examine the potential impact this has on children's achievement.

The impact of parent involvement in homework on achievement. In their review of the literature, Hoover-Dempsey et al. (2001) discussed why parents become involved in their children's homework, how they help, and the ways in which this help influences student outcomes. Investigating studies from early childhood through secondary school, they found, "parental involvement in children's homework appears to influence student outcomes because it offers modeling, reinforcement, and instruction that supports the development of attitudes, knowledge, and behaviors associated with successful school performance" (p. 203).

There are mixed reviews in the literature on the actual effect of parent involvement in homework on student achievement. One research team found, through their review of the literature, that the benefits of parent involvement in homework were seen for only elementary and high school students, and not for middle school students (Patall et al., 2008). The authors hypothesized that middle schoolers may be attempting to develop independence and did not want their parents' help.

Using a framework for general parenting styles developed by Grolnick and Ryan (1989, as cited in Cooper et al., 2000), Cooper and colleagues (2000) identified several patterns in parents' help with homework: (a) encouragement of independent problem solving and participation in decision making, (b) direct involvement, (c) elimination of distractions, and (d) parental interference (for older students). Thus, there are many different ways parents can

become involved in their children's homework, ranging from simply creating a space and time for children to do work to actively helping with work, or even discussing the work with teachers.

Cooper et al. (2000) surveyed 285 elementary school parents (Grades 2–5), 243 middle school parents (Grades 6–8), and 181 high school parents (Grades 9–12) in general education classes in three different school districts—one metropolitan, one suburban, and one rural. Approximately 10% of the sample was considered low-income. Through parent questionnaires, the authors inquired about student characteristics (age/grade and gender), family characteristics (economic resources, number of adults in the home, number of siblings, and time spent in the home by adults), parenting style (autonomy support, structure, direct involvement, and interferences), and amount of homework completed by the child (all, most, half, some, or none).

Cooper and colleagues (2000) measured student achievement through standardized achievement tests and teacher-assigned grades. Student questionnaires asked about their beliefs and attitudes toward homework, such as whether they thought homework helped them learn (for children in the lower grades) and whether homework helped them with their time management or study skills (for children in the upper grades).

Results showed that, although parents' support for their children's autonomy was positively related to student achievement when measured by both standardized tests and class grades, direct parent involvement was negatively associated with these same outcomes. Although these results were correlational and do not indicate causation, Cooper et al. (2000) suggested that they may be taken to mean that any type of parent involvement in homework is not always better than no involvement at all.

The same research team (Cooper, Jackson, Nye, & Lindsay, 2001) conducted a study with 428 second and fourth graders and their parents, as well as 28 of their teachers. They

examined the relationships among several variables: classroom grades, students' attitudes toward homework, homework completion, student ability, parent facilitation, and parent attitudes toward homework.

The authors collected background information, and students, their teachers, and their parents completed homework questionnaires. In addition, the researchers assessed students' ability, and teachers reported on classroom grades. Parents reported on how much they themselves enjoyed homework, the extent to which they thought it helped their children learn, and how much they thought it either increased or decreased children's interest in school. They also reported on how much they thought homework helped with study skills and time management skills. To assess home factors, parents reported on variables such as how often the child was alone while doing homework, how often the television was on, and how often they made the child set aside quiet time for homework completion. To assess parent help with homework, students and parents answered questions regarding how often the student asked for help with homework, how often someone's help made homework more difficult for the child, how often someone did some of the child's work for him or her, and how much someone helped the child finish homework faster than he or she could have on his or her own (Cooper et al., 2001).

Cooper and colleagues' (2001) results indicated that parents' and students' attitudes toward homework were associated with one another but that students' attitudes toward homework were not associated with either homework completion or grades. However, grades were positively associated with homework completion. Lastly, Cooper et al. (2001) investigated whether parent involvement acted as a mediating factor. They found that parent involvement significantly mediated the relationship between both student ability and grades as well as the

relationship between parents' attitudes toward homework and grades. Overall, these results demonstrate the important role that parents can have both in homework and on grades.

Walker et al. (2000) surveyed and interviewed 20 fourth graders (65% White, 35% Black) from one classroom in a low-to-middle-income metropolitan school. They also surveyed and interviewed parents and obtained report cards and standardized achievement test scores. Students responded with their perceptions of homework; their performance in school and how difficult they found their homework to be; and whether, how, and why their parents helped them with their homework. Parents answered the same questions from their own perspective and indicated how their children responded to their help with homework.

Results revealed that lower grades received and reported by children, as well as children's reports of greater difficulty with homework, were associated with higher levels of parent involvement with homework. Walker et al. (2000) wrote that these results likely indicated that parents helped their children with their homework because of the children's difficulty with the work and the children's perceptions of poor performance. They also concluded that this provides some validation for Hoover-Dempsey and Sandler's model (1995, 1997), which hypothesizes that parents become involved because they perceive that their children want or need them to become involved.

As discussed previously, in their separate meta-analyses examining the link between parent involvement and academic achievement, Fan and Chen (2001) and Jeynes (2003, 2005, 2007) found evidence supporting the conclusions made by Walker and colleagues (2000). Fan and Chen found a weak relationship between parental supervision of their children at home and academic achievement, and Jeynes (2003, 2005, 2007) found a negative relationship between these two dimensions, meaning that greater parent involvement, as measured by parental

supervision of children, was associated with lower grades. Like Walker et al. (2000), Fan and Chen hypothesized that these findings indicated that parents supervised their children more because they were already doing poorly in school and not because increased parental supervision had a negative impact on academic achievement.

Homework intervention studies and student achievement. There have been many intervention studies conducted with the goal of getting parents more involved in their children's homework. In a review of 14 studies that included parent training for homework involvement, Patall et al. (2008) found positive effects for higher rates of homework completion and lower rates of student problems with homework, and smaller positive effects for an increase in academic achievement.

In order to test the effects of "interactive homework," Van Voorhis (2003) conducted an 18-week intervention with 10 sixth- and eighth-grade science classes. Six classes (two low ability, two average ability, and two honors) were assigned homework that included letters to parents explaining the topics, skills, goals, and procedures of the assignments. The assignments included a space for parents' comments or questions for the teacher, and all parents signed the homework. The remaining four classes (two low ability and two honors) received "noninteractive homework" that consisted of the same assignment but with no prompts or instructions for the parents and no space for parents' comments, questions, or signatures.

Van Voorhis (2003) collected information on mothers' educational level, students' ability level, and demographic information. In addition, he obtained students' science grades and standardized reading and mathematics test scores from the previous year. Teachers collected and graded homework assignments and reported homework and course grades to the examiner. Lastly, students and parents completed surveys regarding family involvement with English,

mathematics, and science homework; time spent on homework for all subjects; and opinions and attitudes about science homework.

Results indicated that 80% of parents and over 80% of students in the noninteractive homework condition said they never, rarely, or sometimes helped or received help with science homework, and 90% of parents and 80% of students in the interactive homework condition said that they sometimes, frequently, or always helped or received help. Although honors students reported significantly more family involvement than other students, and sixth graders reported significantly more family involvement than eighth graders, Van Voorhis (2003) wrote that study condition (interactive or noninteractive) was the strongest predictor of family involvement, indicating that the interactive homework increased parent involvement in science homework.

After controlling for other variables that predicted higher science grades (White race, mother with a college degree, higher prior science grade, and higher homework completion rate), Van Voorhis (2003) found that students in the interactive homework condition still earned higher report card grades than students in the noninteractive homework condition. She concluded that this result is especially important because it suggests that children obtain higher grades not only by completing homework but also through the reinforcement of their skills from family involvement in homework.

In a related study on the effects of an interactive reading homework program, Bailey and colleagues (Bailey, Silvern, Brabham, & Ross, 2004; Bailey, 2006) found that second grade students showed improved inference responses after an interactive homework intervention. The authors hypothesized that *effective homework*, which they defined as homework that included parent participation, would improve children's abilities. The study included 84 children and parents from three schools in southeastern Alabama. Two of the experimental classes were

drawn from a failing school (School 1) in which 100% of the students qualified for free or reduced-price lunch. The other two experimental classes were drawn from a school (School 2) that had average ratings and in which 65% of the students qualified for free or reduced-price lunch. The last school, from which all three of the control classes were drawn, had an unreported academic reputation. In this school (School 3), 75% of the students qualified for free or reduced-price lunch.

The students in School 1 received interactive homework assignments, and their parents received instruction about the importance of completing homework with their children, how to tutor their children while they read, and other instructional methods. The students in School 2 received only interactive homework, and School 3 continued their regular program (Bailey, 2006).

Students were pretested to determine their ability to draw inferences from a selected reading. The intervention lasted for four weeks during which the students in Schools 1 and 2 received 20 interactive homework assignments that asked them to draw inferences from the readings. Students in School 1 were also asked to draw inferences from discussions with their parents about the homework. After four weeks, the students completed a posttest that paralleled the pretest. Parents also completed a survey regarding the amount of interaction they had with the target child (Bailey, 2006).

The results indicated that the interactive homework intervention (Schools 1 and 2) resulted in a significant increase in the amount of interaction between children and parents—from an average of 21 minutes to an average of 44 minutes per day (Bailey, 2006)—as well as significantly increased ability to draw inferences from readings (Bailey et al., 2004). In addition, children in School 1, whose parents received instruction on the importance of homework,

outperformed the students from School 2 on the reading posttest. In the meantime, the scores of the control group actually decreased slightly from pretest to posttest (Bailey et al., 2004). The authors, however, were careful not to attribute the increased interaction time to the intervention. Because interaction was not measured for the control group, it is possible that simply participating in the study and recording the amount of time spent interacting increased interaction times. To be sure, the intervention had a significant impact on students' reading test scores.

Cultural and socioeconomic influences. Collier, Brice, and Oades-Sese (2007) wrote that culture is "whatever it is one has to know or believe in order to operate in a manner acceptable to members of a group" (p. 355). Many believe that the educational system in the United States transmits only the dominant culture's ways of thinking, speaking, and behaving. This culture, which promotes competition, is difficult for many families whose culture does not emphasize this (De Gaetano, 2007).

Parent involvement in schools is less common for families of lower SES and educational attainment than for families of higher SES and educational attainment, and for Hispanic and Black families than for White (European American) families (U.S. Department of Education, 2006). However, regarding involvement with children's education at home, the same report indicated that, regardless of parents' SES, level of education, race, or ethnicity, approximately 70% of parents helped their children with homework. Moreover, Drummond and Stipek (2004) found in their survey of low-income parents that these parents rated the importance of helping their children with homework highly.

Drummond and Stipek (2004) conducted individual telephone interviews with 234 low-income Black, White, and Hispanic parents regarding the importance of helping their second and

third graders with their homework as well as of being familiar with what their children were learning. The participants in this study were part of a larger longitudinal study of children originally recruited through an early intervention program for low-income families.

Teachers of children in this study rated their students' reading and math skills based on age comparisons. They also reported whether or not they had suggested to parents that they get involved in the students' at-home learning for reading and/or math. Parents (90% mothers) answered questions not about actual involvement but about whether they thought they should be involved in various activities involving helping their children with homework in general, helping their children with reading specifically, helping their children with math specifically, and helping their children by instructing them in other areas related to school. Parents were also asked why they felt the way they did and specifically what they thought they should be doing to help their children (Drummond & Stipek, 2004).

Parents in this study rated involvement as high in importance in general, and they rated helping their children with reading as more important than helping their children with math. For reading, results revealed a modest correlation between beliefs about the importance of helping their second and third grade children and actual reports of helping these children. For math, however, beliefs about the importance of helping were correlated with helping behaviors for parents of second graders only. Further, for reading, lower achievement ratings were associated highly with higher parent importance of helping their children (Drummond & Stipek, 2004).

Importantly, teachers' recommendations to parents to help struggling children with reading were associated with parents' ratings of the importance of involvement. Although this was not true for math, and one cannot imply causation, it does suggest that teachers' recommendations to parents about their involvement affected parents' beliefs. Moreover, for the

few parents who reported not helping their children with their work, the most common reason was that their child was already doing well and did not need their help (Drummond & Stipek, 2004).

Drummond and Stipek (2004) hypothesized that parents did not help their struggling children as much in math as in reading because they believed they were not as qualified to help them. In addition, as parent involvement was slightly lower in third than in second grade, parents may have, again, felt less qualified to help their older children. This could be related to parents' low self-efficacy for helping their children, but it also could be due to the low level of education of the parents in this study. Either way, there are implications for interventions for these parents, even if these consist simply of teachers reinforcing parents' interest in helping their children.

It is clear that it is important to consider cultural influences when studying parent involvement, because if parents do not speak English, their children are not likely to invite them to school. In addition, even if teachers and schools invite parents to attend functions and help their children at home, if there are language barriers or other cultural issues, parents will likely not become involved. Furthermore, some research has shown that racial or ethnic minority parents are more likely to demonstrate involvement not in the school but at home, in conversations with their children about school, jobs, and careers; help with homework; moral support; and their expressions of expectation for success (Auerbach, 2007).

Wong and Hughes (2006) examined parent involvement practices as reported by 481 parents and 179 teachers of first-grade children. They separated participants into four groups: White, Black, English-speaking Hispanic, and Spanish-speaking Hispanic. The authors conducted the study in three diverse school districts in Texas using a sample that they drew from

a larger sample of participants in a longitudinal study investigating the effect of grade retention on students' academic achievement.

For parents, Wong and Hughes (2006) used a questionnaire that measured parent involvement as well as parents' perceptions about school, parents' perceptions of their communication with teachers, and parents' perceptions of parent-teacher shared responsibilities. Teachers answered questions about parent-teacher alliance, perceptions of parent involvement, and initiation of parent contact.

Controlling for SES (as measured by parent education and employment status) and acculturation (as measured by language use, ethnicity of social network, country in which parents spent their childhood, and pride in Hispanic heritage), Wong and Hughes (2006) found that there was, in fact, a lower rate of involvement among Hispanic families, but there were also large within-group differences. Hispanic parents reported feeling more trusting of, but less comfortable with, teachers and schools and, therefore, more deferential to both. In addition, Hispanic parents who spoke more English reported a greater feeling of responsibility for their children's success than did parents who spoke primarily Spanish. The researchers concluded that this finding may be related to Spanish-speaking parents' decreased ability (and self-efficacy) for helping their children with their homework or communicating with school staff, which follows from their inadequate English-language skills. They also hypothesized that these families may have been in the United States for less time, so they may have been even less familiar with the American educational system than were other Hispanic families. Interestingly, teachers in this study reported significantly lower involvement ratings for Black parents than for either Hispanic or White parents, although Hispanic parents also received significantly lower ratings than White parents (Wong & Hughes, 2006).

Auerbach (2007) conducted a qualitative case study to examine the beliefs, goals, and practices of 16 working-class Black and Hispanic parents whose children were juniors and seniors in a college preparation program at a diverse metropolitan high school in Los Angeles. The parents' education ranged from no formal schooling to one semester of college, and their occupations were mostly in the skilled labor, sales, and clerical areas.

Using an in-depth, semistructured parent interview based on Hoover-Dempsey and Sandler's model of parent involvement (1995, 1997), Auerbach (2007) found a high rate of parent involvement, although much of that involvement was not in the form of academic help or attendance at school functions. Rather, many parents reported that they provided moral support to their children, encouraged them to continue with their studies, and even brought them to work with them in fields and factories to show them how hard they themselves worked. Auerbach wrote that, far from uninvolvement, this type of parenting reflects many Hispanic cultural values, including the importance of family and respect for teachers (conveyed as not interfering with the education teachers are trying to give their children).

Auerbach (2007) found that the majority of parents had limited knowledge of the American school system, but there was much within-group variation in responses. She was able to separate the parents into three groups based on the type of support they gave to their children: Moral Supporters, Struggling Advocates, and Ambivalent Companions. The Moral Supporters were involved mostly at home, as the name suggests, giving their children moral support. They showed trust both in their children and in the American school system, although they had the least knowledge of the system. The Struggling Advocates were the most involved with the school, even initiating discussions with school counselors, despite their children's resistance and their own hesitations because of limited knowledge. These parents showed less moral support

and more monitoring of their children at home, less trust in their children to succeed on their own, and a lack of trust in the school to help their children succeed.

In between these two groups in terms of direct involvement with the school were the Ambivalent Companions. These parents (all single mothers of girls) provided their children with strong emotional support and had occasional direct contact with the school. They were called "ambivalent" because they expressed to their daughters mixed messages about school and college. They wanted the opportunities for their children that they knew college would provide, but they also feared losing their close mother-daughter relationships should their daughters go away to college (Auerbach, 2007).

Most of the parents in Auerbach's (2007) study took cues from their children as to how involved they should be at school. If the students were performing well, seemed motivated, and were not requesting their parents' involvement, they provided only at-home support. Interestingly, the students of the Struggling Advocates—the group of parents who were most directly involved with the school—had lower GPAs than other students in the study. It is possible that this indicates that the moral support the parents in the other groups gave their children, along with the trust they showed in their children to succeed on their own, was more helpful for these students in terms of achievement. However, it is also possible that these parents were more involved at school because their children were doing poorly already and, perhaps, if the Struggling Advocates had not been involved, their children would have achieved even less well.

Auerbach's (2007) research contributes to what is known about Hispanic parents' involvement—that is, their involvement is more likely to be in less traditionally American forms (such as moral support for their children's education at home) than in the form of direct

involvement with the school. In addition, most parents in Auerbach's study who were uninvolved directly with the school stated that they were responding to the school in some way because they felt unwelcome there and slighted by teachers and administrators.

In another qualitative study, Larrotta and Yamamura (2011) found that the 10 Mexican mothers in their sample wanted to help their children succeed in school and responded well to an intervention designed to foster involvement in literacy activities. In this study, the researchers, using the framework of an emancipatory learning theory and a community cultural wealth theory, created a family literacy program and implemented it in a school in Texas in which 47% of the families are Hispanic, 90% are low-SES, and 50% of the students are English language learners. The researchers met parents and one second through fifth grader of each parent at the school for 12 two-hour sessions. Parents were assigned readings to encourage them to discuss their cultural and life experiences with one another, and the children read about animals, adventures, and other similar topics in culturally relevant and age-appropriate works.

Parents met at the school and worked first as a group, then in pairs with other parents, and then with their children, learning and then practicing reading comprehension strategies such as Preview-View-Review and concept mapping. Data collection included questionnaires, interviews, and journals that the parents wrote in both before and after each session. The authors collected all data in Spanish and translated it into English (Larrotta & Yamamura, 2011).

Larrotta and Yamamura (2011) found that parents wanted to help their children succeed in school and wanted their children to have more opportunities than they had. In addition, they found that their program encouraged parents to share information with one another as well as with their families. Parents discussed, among other topics, where to find free English classes that were given while their children were in school and where to learn how to use the Internet.

Mothers shared their past experiences in Mexico with their children and reported that they felt that their communication skills and relationships with their husbands and other children improved as well. Thus, although the focus of this intervention was on the parents' experiences only, Larrotta and Yamamura concluded that it benefitted not only the participants but also their families. Additionally, being at the school for the program, parents had the opportunity to interact with the teachers who were volunteering their time to help with the project, either by donating their classrooms or providing child care during the parents' private lessons, thus expanding what is often a one-way communication system (school to home) and strengthening their relationships with both teachers and the school.

Citing the importance of fathers in Hispanic culture, Ortiz (2004) reviewed the literature on Hispanic fathers' involvement in literacy activities with their children. He found that the majority of fathers were engaged in literacy activities with their young children, although some of this activity may be considered nontraditional. Involvement ranged from helping children with homework to reading school lunch menus to reading directions of board games. He also found that, as a way of uniting the family, fathers were likely to share religious materials and/or written information about their work, such as pamphlets and brochures.

Ortiz (2004) concluded that Hispanic fathers' literacy activities were more about communication than they were about instruction. He wrote that these fathers "engaged in literacy activities with their children because it served a function in their daily lives" (p. 175). Thus, these fathers were involved in their children's education but in what may be considered a practical or functional manner. These findings have important implications for working with Hispanic populations.

In their exploratory study of 129 U.S.-born Hispanic high school students in a large public school near Atlanta, Ibañez et al. (2004) found that parent involvement (defined as assisting with homework, attending extracurricular activities, and helping with selection of classes) was positively correlated with students' achievement motivation (measured by school aspirations and expectations, and the perceived importance of schooling). Interestingly, for students who were less acculturated, the importance they reported placing on school was similar whether their parents were highly involved or not. However, for students who were more acculturated, school importance was significantly higher if their parents were highly involved in school.

There has long been an achievement gap not only between White and non-White students but also between high- and low-income students. In their longitudinal analysis of the impact of parent involvement on low-income children's literacy achievement, Dearing, Kreider, Simpkins, and Weiss (2006) found that this achievement gap did not exist for students whose parents showed high levels of involvement. This study was part of a larger, federally funded study throughout 21 sites across the United States, which included an intervention for children (high-quality preschool) and parents (education and job training) in the experimental group. The authors followed the children from birth through kindergarten entry, and the study included the results of a follow-up analysis at three of the sites when the children were in fifth grade. There were available data from 281 children and their mothers for this analysis.

Dearing et al. (2006) used demographic data collected during recruitment, and mothers reported about their involvement in the children's education in kindergarten, third grade, and fifth grade. The questionnaires included items about attending conferences; visiting their children's classrooms; going on field trips; and attending other events, such as open houses and

school performances. The authors also assessed children's literacy level through standardized achievement tests at these same time points.

The researchers found that, although average family involvement in school was significantly negatively associated with maternal education, family involvement was not associated with either average literacy performance or change in literacy performance. However, there was a significant positive relationship between average involvement levels and average literacy performance for children whose mothers were less educated. As such, an achievement gap that existed between children of more and less educated mothers with low parent involvement did not exist in the group of children whose parents had higher levels of involvement. Moreover, Dearing et al. (2006) found that increases in parent involvement were positively associated with increased literacy performance. The authors concluded that their findings add to existing evidence that parent involvement in education improves the achievement of children who are most at risk due to a combination of being low-income and having parents with low education.

Dearing and colleagues (Dearing, McCartney, Weiss, Kreider, & Simpkins, 2004) also investigated children's feelings about literacy and found that children with mothers with higher levels of both education and parent involvement had consistently more positive feelings about literacy than other children. Included in this analysis were 167 of the children from the original study.

For this portion of the study, the authors used a literacy subscale from a questionnaire about feelings about school. A path model indicated that higher levels of parent involvement led to more positive feelings about literacy among students, which led to better literacy performance. This was especially true for children whose mothers had lower levels of education. In addition,

change in feelings about literacy was positively associated with performance, so that students who expressed more positive feelings about reading as the study progressed also showed increasingly better performance (Dearing et al., 2004). This study adds an important dimension to the research on academic achievement, as it provides evidence that students' level of success is associated with their level of enjoyment of their work.

Parenting style and parent-child relationships. The way in which parents become involved or show their involvement, and not simply the fact that they are involved, has been shown to have a positive impact on students (e.g., Pomerantz et al., 2007). As discussed previously, Jeynes (2005) found that some of the most effective components of parent involvement included family support variables such as parents' expectations and parenting style.

In a longitudinal study of two successive cohorts of 2,453 students in seven public middle schools in Maryland, Simons-Morton and Chen (2009) found that, from sixth grade to ninth grade, school engagement and adjustment declined along with authoritative parenting practices (such as monitoring and expectations), while problem behaviors, such as substance use and behavioral issues, increased. Relationships between variables indicated that "authoritative parenting practices may encourage school engagement by fostering adjustment and discouraging the development of problem-behaving friends" (p. 20).

Simons-Morton and Chen (2009) described authoritative parenting as "demanding and responsive" (p. 5), based on a widely accepted model of parenting styles. These parents had high expectations of their children, monitored their behavior, supported them, and remained involved in their daily lives. This parenting style is commonly recognized as a protective factor for children and adolescents (e.g., Baumrind, 1991, as cited in Simons-Morton & Chen, 2009). Research has shown that children and adolescents with parents who have an authoritative style

are less likely to engage in problem behavior and more likely to perform better in school than are those with parents who adopt another style of parenting, such as authoritarian (Blondal & Adalbjarnardottir, 2009; Simons-Morton & Chen, 2009).

Through surveys filled out by general education students, Simons-Morton and Chen (2009) evaluated school engagement, school adjustment, parenting practices, substance use, conduct problems, and number of friends with problem behaviors. In addition, the authors collected demographic background information. They defined school engagement as students' motivation to do well and school adjustment as how the students believed they were doing compared to other students with regard to their school work as well as following rules, staying out of trouble, making friends, and getting along with others. In order to measure achievement, the authors asked students to report their grades on their last report cards for math, science, language arts, and social studies. They inquired about use of cigarettes and alcohol (substance use) as well as how many times the students had been in physical fights, bullied others, carried weapons, or stolen something (conduct problems). To measure peer influences, they asked the students how many of their five closest friends engaged in problem behaviors such as bullying, cheating, fighting, and lying to parents.

The authors measured parent involvement by asking the students how much their parents knew about their friends, interests, activities, school, leisure time, and health habits. Simons-Morton and Chen (2009) measured parental monitoring by asking the students if their parents would know if they had misbehaved in school, if they checked to see if they had done what their parents told them to do, and if they believed that their parents believed in having rules and sticking to them. Lastly, they measured parental expectations by asking the students how upset they believed their parents would be if they found out that they smoked cigarettes, drank alcohol,

were sent to the office for misbehavior, did poorly on a test, were disrespectful to a teacher, or got into a physical fight at school.

As expected, Simons-Morton and Chen (2009) found that school engagement correlated significantly over time with grades. Although average school engagement and school adjustment declined slightly from sixth to eighth grades, it increased slightly in the ninth grade. Also as expected, substance use, conduct problems, and number of problem-behaving friends increased over time and, accordingly, parent involvement, parental monitoring, and parent expectations declined over time.

As other research has shown (e.g., Blondal & Adalbjarnardottir, 2009), Simons-Morton and Chen (2009) found positive relationships over time between authoritative parenting practices and school engagement. However, they also found that these relationships were fully mediated by school adjustment and partially mediated by number of problem-behaving friends. The authors wrote that this suggests that "authoritative parenting practices provide both direct and indirect effects on school engagement" (p. 20). In addition, they wrote, "despite increases in peer influence and independence from family, the positive influence of authoritative parenting practices remains substantial during adolescence" (p. 20).

Blondal and Adalbjarnardottir (2009) found that an authoritative parenting style had a positive influence on student success long-term. In their longitudinal study, they found that parenting style was a stronger predictor of school dropout than parent involvement in school activities. Their study is part of a larger longitudinal study, which is ongoing in Iceland. The main study includes 1,010 students aged 14 years. In the subset of the study discussed here, the researchers classified 427 of these students into one of four parenting style groups (authoritative,

authoritarian, indulgent, or neglectful) based on the students' responses to a questionnaire regarding their parents' affection, responsiveness, limit setting, supervision, and other factors.

The students also answered questions regarding their perceptions of parent involvement, including how willing their parents were to help them with their homework, how much parents showed interest in the students' schooling, and the extent to which their parents encouraged them to obtain further education. Blondal and Adalbjarnardottir (2009) also measured academic achievement (grades and standardized test scores), SES, student temperament, and school dropout (measured as noncompletion of school by age 22 with no registration at the time of data collection).

The researchers found that the variables that correlated the strongest with other study variables were parenting style and parent involvement. Unsurprisingly, adolescents who had indicated that their parents were authoritative or indulgent perceived the most involvement from their parents, and adolescents with neglectful parents perceived the least involvement. Further, adolescents who characterized their parents as authoritative at age 14 were most likely to have completed school by age 22. Neither parent involvement nor student temperament predicted school completion. Thus, parenting style was related more strongly to school dropout than was parent involvement.

Furthermore, Blondal and Adalbjarnardottir (2009) found that parenting style predicted school dropout even when they controlled for academic achievement, SES, and gender. The authors noted that, together with the three latter variables, which are normally strong predictors of school dropout, parenting style explained 48% of the variance in school dropout. They conclude, "Parenting style still predicts school dropout even though academic achievement partially mediates this relationship" (p. 140).

Lastly, Blondal and Adalbjarnardottir (2009) looked for mediating effects of achievement on the relationship between parenting style and school dropout. Their findings suggest "that parenting style has an effect on the odds of dropping out, in part because it influences adolescents' academic achievement" (p. 138). This is an important finding, as much research has focused on how parent involvement affects achievement and does not consider the atmosphere of the home—that is, parenting style. Thus, it may be useful to consider a more extensive definition of parent involvement that includes parenting style as well as the nature of the parent-child relationship.

Englund et al. (2008) also conducted a longitudinal study, following participants from before birth through age 23. They examined adult-child relationships, academic achievement, and behavioral issues, and classified participants into categories based on whether they were expected to graduate from high school. They examined what differentiated those participants who were expected to drop out of high school and did drop out (expected dropouts) to those who were expected to drop out but ended up graduating (unexpected graduates), and those who were expected to graduate and did graduate (expected graduates) to those who were expected to graduate but ended up dropping out (unexpected dropouts).

The original study began with 267 low-income mothers and their first-born children. Most mothers were single (60%), European American (67%), and had not completed high school at the time of the baby's birth (36%). In addition, 46% were teen mothers who "had experienced a high degree of life stress" (Englund et al., 2008, p. 81). This portion of the study included 179 of the original child participants, 128 of whom had graduated from high school.

The measures used to predict dropout status included academic achievement at ages 12 and 16, as measured by standardized achievement testing, and behavioral problems at these same

ages, as measured by teacher report via a standardized checklist. In addition, Englund and colleagues (2008) measured parent-child relationships in early childhood (age 42 months), middle childhood (ages 7 through 9 years), and early adolescence (age 13 years). They also measured teacher-child relationships, the results of which are beyond the scope of this discussion.

In early childhood, Englund et al. (2008) videotaped mother-child pairs interacting with one another solving a developmentally appropriate task. Independent raters coded the interactions based on the mothers' quality of instruction (ability to structure the situation and synchronize their behavior with their children's), emotional support, limit setting, and expressions of negative responses toward their children, such as anger or rejection.

In middle childhood, the researchers interviewed teachers in order to gauge the level of parent involvement. Lastly, in early adolescence, they once again videotaped mother and child pairs working on a problem-solving task. Independent raters coded the interactions based on three balance scales that indicated (a) avoidance versus confidence, (b) detrimental versus enhancing relationship, and (c) inability to complete the task versus a productive and enjoyable process involving teamwork (Englund et al., 2008).

Although the results indicated that adult relationships did not explain why adolescents who were expected to drop out remained in school, there were significant differences between adolescents who were predicted to graduate and, instead, dropped out. The authors wrote, "Parenting behavior differentiated children who would stay on a trajectory of academic success from those who were the exceptions to the prediction of high school graduation" (Englund et al., 2008, p. 88). That is, parents who had good relationships with their children and whom teachers rated as being involved in their children's education were more likely to have children who

remained on the path toward graduation. In contrast, children who did well academically and behaviorally but who had poor relationships with their parents were more likely to drop out of school despite their personal success than were successful students with better relationships with their parents. It is this finding that is most troublesome, as it indicates that poor parent-child relationships can, for some students, prevail over their personal attempts and predispositions toward success.

Jimerson et al.'s (2000) investigation of 143 participants from this same longitudinal study (Englund et al., 2008) looked at early predictors of school dropout. In this subset of the study, 100 of the participants had graduated from high school by age 19. The researchers looked at mother-child interactions when the children were 6, 12, 18, and 42 months old; conducted interviews with the mothers when their children were 30 months old to gauge quality of the home environment; and interviewed teachers when the children were in first and sixth grades regarding the parents' involvement activities. They also assessed child intelligence and achievement, problem behaviors, and peer competence.

Jimerson et al. (2000) observed mother-infant pairs during two feeding situations and one play situation when the children were six months old. Observers created sensitivity ratings based on the mothers' understanding of and appreciation for their infants' signals, and appropriate and timely responses to these signals.

At ages 12 and 18 months, the researchers assessed the mother-child attachment relationship through the "Strange Situation" (Ainsworth & Wittig, 1969, as cited in Jimerson et al., 2000). The Strange Situation involves a series of brief separations of mother and child, reunions between the pair, and interactions between the child and a stranger. The infant's reactions to the separation, reunion, and contact with the stranger provide the assessment bases

of the quality of the attachment relationship. The researchers classified the attachment relationship as either (a) secure, meaning the infant relied appropriately on the mother to reduce stress; (b) insecure-avoidant, in which case the infant actively avoided the mother when stressed; or (c) insecure-resistant, meaning the infant sought contact with the mother when stressed but showed anger toward her and/or was not comforted by her.

The interaction at 42 months was the same as in the study discussed above by Englund et al. (2008). Mother-child pairs participated in four problem-solving situations that required them to work together, and independent raters coded their interactions. They were to build a series of blocks, name items with wheels, match colors and shapes, and trace a pattern through an Etch A Sketch maze. Jimerson et al. (2000) used the scores on structure and limit setting as well as quality of instruction, indicating that the mother kept the child on task during the problem-solving situation.

Jimerson and colleagues (2000) conceptualized two models of the relative predictive power of school dropout from their results. In the first model, behavior problems in sixth grade was the most important predictor variable, followed by quality of early caregiving. Parent involvement, peer competence, gender, and SES were also important variables for this model, although academic achievement and IQ were not.

In the second model, parent involvement in sixth grade and problem behaviors in first grade were the most important variables, along with quality of early caregiving and achievement in first grade. Overall, the authors concluded, “The data from this study provide evidence supporting the proposal that the child’s early home environment and the quality of early caregiving are important for predicting elementary school predictors of students who drop out of

high school" (Jimerson et al., 2000, p. 543). Thus, dropping out of high school can be seen as a developmental process that starts before children even enter school.

Dissertation Pilot Study

The purpose of the dissertation pilot study (Jaspen & Tryon, 2009) was to better understand parents' involvement at home and directly at school, and how this related to students' achievement. Furthermore, the pilot study investigated how teachers' level of experience related to their view on parents' level of involvement, given the research that shows that parent involvement has a stronger relationship with grades than with standardized test scores (e.g., Jeynes, 2003, 2007).

Sample and Data Collection. Data for this study were obtained from the Early Childhood Longitudinal Study—Kindergarten Cohort (ECLS–K). Sponsored by the U.S. Department of Education, National Center for Education Statistics (NCES), the ECLS–K was a multisource, multimethod study that began while the participants were in kindergarten and followed them through the eighth grade (NCES, 2004). Thus, the ECLS–K provided multifaceted and longitudinal data on children's home and school environments as well as on their cognitive, academic, and social-emotional growth.

The authors of the ECLS–K selected a nationally representative sample of students using a multilevel sampling system. They divided the United States into 100 primary sampling units based on geographic location and selected schools randomly within each primary sampling unit. They also selected students randomly within each school. The longitudinal data used for the pilot study were collected beginning in kindergarten and ending in the spring of the third grade year, as this was the most complete data set available. Non-longitudinal data concentrated on the third grade, as this was the most recent assessment point for this set of data (NCES, 2004).

The study began with a sample of approximately 22,000 children attending kindergarten in the United States during the 1998–1999 school year (NCES, 2004). A number of the ECLS–K data files have been released publicly. Included in these files are the third grade data file and the longitudinal kindergarten-third grade data file. These files include the data that were analyzed for the pilot study.

The ECLS–K used multiple formats for data collection, including personal and telephone interviews and self-administered paper and pencil questionnaires. The ECLS–K included all sampled children and their families to the greatest extent possible and used materials in other languages and translators whenever possible (NCES, 2004).

Hypotheses and research questions. The purpose of the pilot study (Jaspen & Tryon, 2009) was to conduct an exploratory analysis on key parent involvement variables in order to identify the specific variables that were related to children's school achievement in third grade. The hypotheses and research questions were as follows:

H01: Children's cognitive test scores in kindergarten will predict their grades and cognitive test scores in later years.

H02: Teachers' perceptions of parent involvement will predict students' grades but not their standardized achievement scores.

Research Question 1: What is the relationship between levels of parent reported involvement and students' grades versus the relationship of involvement to standardized test scores?

Research Question 2: Does parent involvement in school (e.g., fundraising) versus outside of school (e.g., help with homework) impact students' achievement as measured by grades and/or standardized test scores?

Research Question 3: What is the relationship between teacher qualification variables and their perceptions of parent involvement?

Measures. The ECLS–K included many measures. The pilot study focused on student achievement, as measured by math and reading cognitive scores and teacher ratings; parent interviews to measure demographic variables and parent involvement; and a teacher questionnaire to measure teachers' perceptions of parent involvement.

Cognitive and academic achievement scores. The cognitive scores in both kindergarten and third grade were separated into math and reading skills. Thus, we used the children's math and reading cognitive scores from the fall of their kindergarten year to predict their math and reading achievement scores in the spring of their third grade year. Further, teachers rated children's math and reading achievement using an Academic Rating Scale (ARS).

Parent interview. Trained study personnel conducted most parent interviews on the phone. They asked parents about facts such as their race, income, and job status, as well as about information regarding their family structure, discipline practices, and parent involvement.

We chose several parent involvement variables for analysis as part of the pilot study. However, unlike in previous studies, we did not create a parent involvement composite. Rather, we chose to explore the relationship between individual variables and children's third grade cognitive and ARS scores in order to investigate the relative importance of each type of involvement.

Teacher questionnaire. In addition to reporting on children's academic achievement, teachers also answered questions regarding their perceptions of parent involvement and their educational background and teaching experience.

Data analysis. We used multiple regression analysis in order to determine the relationships among the variables used in the study while controlling for race and SES. Because of a complex sample design, the ECLS–K data are weighted in order to better represent the U.S. population. The ECLS–K manual provides a description of the appropriate weights for use, depending on the data to be analyzed.[1]

Selecting the sample and specifying variables. For the first hypothesis, longitudinal data were available for 17,401 students. There were 1,699 students with no kindergarten cognitive data, 2,869 more with no Grade 3 cognitive data, an additional 2,415 with no Grade 3 ARS scores, and 7,294 more with missing data weights. This left 3,124 children—only about 18% of the original sample. We used this entire sample of 3,124 children for the analysis of H01.

For Hypothesis 2 and the research questions, the Grade 3 sample consisted of 15,305 children. Of these, 890 had missing reading or math cognitive scores, an additional 2,690 had no ARS scores, and 120 more had missing teacher questionnaires. Further, 1,350 children had missing responses to whether their parents attended an open house. Of the remaining sample, 12 children had missing data weights. This left a total of 10,243 children. We used a random sample of 10% of these cases for the analysis of each of Hypothesis 2 and the research questions.

Results

Hypothesis 1. As predicted, children's cognitive scores in reading and math predicted both their Grade 3 cognitive scores and their Grade 3 ARS scores. For reading, kindergarten cognitive scores explained 23% of the variance in Grade 3 cognitive scores, $N = 3{,}124$, $F(1, 3122) = 431.82$, $R^2 = .23$, $p < .001$. Controlling for race and SES added approximately 6% to the

[1] We used variable weight C5CWO for Hypothesis 2 and Research Question 3, and variable weight C5PWO for Research Questions 1 and 2.

explanation of scores, $N = 3{,}029$, $F(3, 3025) = 193.79$, $R^2 = .29$, $p < .001$. For math, kindergarten cognitive scores explained 42% of the variance of Grade 3 cognitive scores, $N = 3124$, $F(1, 3122) = 531.30$, $R^2 = .42$, $p < .001$, with race and SES adding less than 3% to the explanation of scores, $N = 3{,}029$, $F(3, 3025) = 282.72$, $R^2 = .45$, $p < .001$.

Kindergarten cognitive scores were also important in predicting Grade 3 ARS scores in both math and reading (even when controlling for race and SES), although little of the variance was explained in these models (for reading: $N = 3{,}029$, $F(3, 3025) = 20.28$, $R^2 = .02$, $p < .001$; for math: $N = 3{,}029$, $F(3, 3025) = 10.38$, $R^2 = .01$, $p < .001$).

Hypothesis 2. Analyzing each parent involvement variable separately, it seems that teachers' perceptions of whether parents return teachers' calls or attend informal meetings at the school were significantly related to neither students' grades nor their cognitive scores in Grade 3. However, teachers' perceptions of the amount parents volunteered in the school were negatively associated with students' Grade 3 cognitive scores in reading only ($N = 1{,}014$, $F(1, 1012) = 5.37$, $R^2 = .01$, $p < .05$).

Research Questions 1 and 2. There were no significant relationships between parent involvement variables and students' ARS scores. However, there were several significant relationships between parent involvement variables—involvement both inside and outside of school—and students' Grade 3 cognitive test scores.

Regarding parent involvement in school, parental attendance at an open house in school was significantly negatively related to students' reading and math cognitive scores (for reading: $N = 1{,}015$, $F(3, 1011) = 41.34$, $R^2 = .18$, $p < .05$; for math: $N = 1{,}015$, $F(3, 1011) = 41.47$, $R^2 = .22$, $p < .05$). There was no significant relationship between this involvement variable and students' grades.

Regarding parent involvement in the home, higher cognitive reading scores (but not higher reading ARS) were significantly related to how often parents reported reading to their children, $N = 1{,}015$, $F(3, 1011) = 42.58$, $R^2 = .19$, $p < .001$. Moreover, math cognitive scores, but not math ARS scores, were significantly related to mothers (but not fathers) reporting helping with math homework, $N = 1{,}015$, $F(3, 1011) = 49.87$, $R^2 = .22$, $p < .05$.

Research Question 3. Lastly, there were no significant relationships between teachers' years of experience or highest degree completed and their perceptions of parent involvement.

Discussion

As expected, children's scores from the fall cognitive test in both reading and math predicted the respective cognitive scores in the spring of third grade as well as the respective Grade 3 spring ARS scores. This was true both when controlling for race and SES and when not controlling for these variables. However, some of the results regarding the relationships between parent involvement variables and students' achievement were surprising.

As discussed, years of research has shown that parent involvement increases students' achievement and even helps decrease behavior problems and other issues. However, it is clear from this analysis that, when considering parent involvement and how it affects achievement, we must look at not just one variable but at involvement as a whole. That is, simply reading to children without being involved in other ways, or attending parent-teacher conferences without being involved in other ways, is likely not going to affect children's achievement.

It seems as though it is a "package" of parent involvement variables that helps children succeed. This conclusion is supported by Jeynes (2005, 2007), who found in his meta-analyses that individual components of parent involvement were not as strongly related to achievement

outcomes as parent involvement as a whole. Thus, parents must become involved in multiple aspects of their children's lives in order to see an impact in the classroom.

It is also helpful to view parent involvement as part of a theoretical framework, such as whether parents believe they should be involved (role construction) and how they feel about the potential impact of their involvement (self-efficacy). Hoover-Dempsey and Sandler theorize (1995, 1997, 2005) and have found in research (e.g., Hoover-Dempsey & Sandler, 2005; Reed et al., 2000) that parents' role construction and level of self-efficacy influence their level of involvement.

Further, Deslandes and Bertrand (2005) found in their research that parents' perceptions of their children's invitations to involvement was the strongest predictor of parent involvement at home. Green et al. (2007) and Walker et al. (2011) have also found this to be an important factor in parent involvement. Thus, we must consider children's invitations to their parents for involvement.

The result regarding the negative impact of parents attending school functions on children's achievement had been demonstrated in prior research as well (Auerbach, 2007; Fan & Chen, 2001; Jeynes, 2003). Fan and Chen hypothesized that it could be that these children were already struggling academically and that is why their parents became involved.

Jeynes (2003) and Fan and Chen (2001) also found in their meta-analyses that parent involvement had a larger effect on students' GPAs than on their grades in specific, individual classes. As the pilot study explored parent involvement's effect only on reading and math scores, this could have influenced the results.

The impact of teacher qualification (years of experience and level of highest degree) was explored in order to investigate the differential impact parent involvement has on students'

grades versus their standardized test scores, as has been found in some research (e.g., Jeynes, 2003, 2007). We did not find a difference, however, and the fact that these variables did not, on their own, account for teachers' perceptions of parent involvement is encouraging, as teachers should not allow their perceptions of parent involvement to influence their grading.

Teachers have the potential to influence student achievement as well as parent involvement. It is teachers who invite parents into classrooms and make them feel welcome in the school or, on the other side, can contribute to parents' feelings that they are unwelcome in the school. Additionally, teacher expectations, just like parent expectations, can have a tremendous impact on students' motivation and their subsequent accomplishments (Yan & Lin, 2005). Moreover, teachers may help in increasing parents' self-efficacy related to helping their children in school (Kaya & Lundeen, 2010).

Rationale for This Study

Overall, parent involvement, especially when examined as a whole, clearly has a positive influence on student achievement as well as on social and emotional variables. However, despite our knowledge of barriers to parent involvement, such as economic and cultural factors, what motivates parents to become involved remains somewhat unclear. This is necessary information to have in order to investigate how to increase the level of parent involvement as well as to advance the current theoretical models of parent involvement (Cucchiara & Horvat, 2009).

This study sought to extend the results in Green et al.'s (2007) study, which included first through sixth graders, investigating parents' motivations for involvement with older elementary, middle, and high school students. This is an important area of study, as parent involvement typically decreases as students get older (e.g., Drummond and Stipek, 2004; Green et al., 2007; Simon & Epstein, 2001). If we know the motivations of parents' involvement for older students,

we may be able to develop informed interventions that keep parents involved in their children's education as they progress in school. Thus, this study sought to parse out the motivations for involvement for parents of younger versus older students.

Research Questions and Hypotheses

Through this study, an extension of Green et al.'s study (2007), which was conducted with elementary and lower middle schoolers (Grades 1–6), I attempted to fill a gap in the literature by conducting an investigation with older elementary, middle, and high schoolers (Grades 5–12) using the same parent questionnaire from the aforementioned study. Thus, because that study used Hoover-Dempsey and Sandler's model of motivations for parent involvement (1995, 1997, 2005), I used the same framework for this study.

In Green et al.'s study (2007), the authors found that the significant predictors for reported home-based involvement for parents of elementary school students (Grades 1–4) were role construction, self-efficacy, perceived child invitations, and perceived time and energy. Each of these also emerged as a significant predictor for parents of middle school students (Grades 5–6), with the exception of role construction, which was nonsignificant. Regarding school-based involvement, the significant predictors for parents of elementary school students were teacher invitations, child invitations, and time and energy. Again, each of these emerged as significant predictors for parents of middle school students. However, role construction was an additional significant predictor for parents of middle school students.

In this study, I explored the same model, seeking to answer the following research question:

Research Question 1: Which independent variables (parents' perceived role construction for involvement; parents' self-efficacy for helping their children succeed in school;

parents' perceived invitations to involvement from the school, teachers, and children; parents' perceptions of personal skills and knowledge for involvement; and parents' perceptions of personal time and energy for involvement) will predict greater levels of each reported home- and school-based involvement for parents of older elementary, middle, and high school students?

Further, I investigated the relationship between the variables in the main model (Research Question 1) and parental demographic variables (SES, employment status, educational level, and race).

Additionally, I hypothesized that the level of reported home- and school-based involvement would be higher for parents of students in lower grades:

H01: The level of home-based involvement reported by parents will be higher for parents of elementary schoolers than for parents of middle schoolers and for parents of middle schoolers than for parents of high schoolers.

H02: The level of school-based involvement reported by parents will be higher for parents of elementary schoolers than for parents of middle schoolers and for parents of middle schoolers than for parents of high schoolers.

Along the lines of H01 and H02, I investigated the following research questions:

Research Question 2: What is the relationship between grade level (elementary, middle, or high school) and parents' perceived role construction for involvement?

Research Question 3: What is the relationship between grade level (elementary, middle, or high school) and parents' self-efficacy for helping their children succeed in school?

Research Question 4: What is the relationship between grade level (elementary, middle, or high school) and parents' perceptions of general school invitations to involvement?

Research Question 5: What is the relationship between grade level (elementary, middle, or high school) and parents' perceptions of specific teacher invitations to involvement?

Research Question 6: What is the relationship between grade level (elementary, middle, or high school) and parents' perceptions of specific child invitations to involvement?

Research Question 7: What is the relationship between grade level (elementary, middle, or high school) and parents' perceptions of personal skills and knowledge for involvement?

Research Question 8: What is the relationship between grade level (elementary, middle, or high school) and parents' perceptions of personal time and energy for involvement?

Chapter 3: Methodology

This chapter presents the methodology of the study that examined parents' motivations for involvement in the education of their older elementary, middle, and high school children (5th through 12th graders). The study explored the relationship between these factors and parents' reported level of home- and school-based involvement as well as the relationships between these variables and various demographic variables. This chapter begins with a description of the selection of participants. This is followed by a description of the survey instrument that was used and the study procedures. The chapter concludes with a section on data analysis.

Participant Selection

After receiving approval from the Institutional Review Board of the City University of New York, Graduate School and University Center, I solicited participation from parents of students in 5th through 12th grades. Because effect sizes in similar studies are small to medium, I used a range of methods of recruitment in order to attempt to obtain a larger sample.

First, I sent an e-mail (see Appendix A) to my personal contacts asking those who have a child in 5th through 12th grades for their participation and/or asking them to forward my message to their contacts. My personal contacts included family members, friends, and neighbors, many of whom are parents and professionals in various fields. The e-mail contained a link to my anonymous survey on SurveyMonkey (http://www.surveymonkey.com). I also posted the following message on Facebook (http://www.facebook.com) for my personal contacts to see:

> I am looking for parents of 5th–12th graders to fill out an anonymous survey on parent involvement for my dissertation research. Please click the link to check out my survey and/or pass it along to those you know who may be interested. Thank you!
>
> http://www.surveymonkey.com/s/SurveyForParents2011

In addition, I created a public Twitter account (http://twitter.com/parent_survey) and posted a link to the survey at that account. Because Twitter limits the number of characters that can be posted to 140, I posted the following abbreviated message: "Parents of 5^{th}–12^{th} graders: Please check out my anonymous survey on parent involvement: http://www.surveymonkey.com/s/SurveyForParents2011."

I also created a flier (see Appendix B), which I posted on public bulletin boards in laundromats, supermarkets, and other public areas where fliers are allowed, in New York City and Westchester County, New York. In addition to these methods, I communicated with the administrators of a school district in Westchester County who distributed my survey information to parents in the district's middle and high schools.

Because of the nature of my sampling procedure, I expected to obtain a fairly restricted sample with a high level of parent involvement. I tested my statistical model both controlling for demographic variables and not controlling for these variables in order to explore differences in the results.

Surveys were anonymous. I did not collect any identifying data from the participants. I asked participants to enter the city, state, and country in which they reside, which I used to identify possible trends in parent participation among urban, suburban, or rural areas. I do not know which of my contacts read the e-mails I sent, who forwarded my survey, or who saw my Facebook or Twitter posts. I also do not know who clicked the link to the survey or who completed the survey, as I set my SurveyMonkey account so that it did not collect IP addresses from the computers used to look at or complete the surveys.

I needed at least 102 participants in order to detect a medium effect size at the $p < .05$ level of significance. This is the sample size needed to detect such an effect size for a study with

seven independent variables (Cohen, 1992). A total of 226 people began the survey by filling out the first screen (after the introductory screen), which asked demographic questions about their oldest child. The next screen, which contained questions about self-efficacy and specific teacher invitations to involvement, had 216 responses, followed by 213 responses for the third screen, which contained questions about parents' role construction. Then, 210 people filled out the next two screens of questions regarding personal skills and knowledge and time and energy, and reported school and home involvement. The final screen of questions, which asked about school and child invitations to involvement, was completed by 209 participants. Finally, 205 people completed the last screen of demographic information. Thus, approximately 91% of those who started the survey completed it.

Of the 209 participants who answered all of the questions about the study variables, two indicated that they homeschool their children. I deleted them from the analysis, as their answers are not considered relevant to the research questions and hypotheses of this study. Thus, the final *N* for the study is 207. I used this sample for the analyses that did not use demographic information as control variables. I obtained demographic information for 203 of these participants. Of these 203 participants, 16 people did not answer the question about income. Therefore, I have complete surveys from 191 participants (84.5% of those who started the survey), and this is the sample that I used for the main model (Research Question 1).

Characteristics of Respondents

Table 1 shows the information on participant demographic variables. The majority of participants are White, reside in suburban areas, and have two or more children. Most are employed at least part-time, have at least a bachelor's degree, and have a spouse or partner who is also employed at least part-time and has at least a bachelor's degree. The race and education

status of this sample differ significantly from the population of the United States, as reported by the U.S. Census Bureau for 2010, with 63.7% of the U.S. population reporting that they are White (U.S. Census Bureau, 2011) and only 28.2% of the population age 25 or higher reporting the completion of a bachelor's degree or higher (U.S. Census Bureau, n.d.a).

Table 1

Demographic Information for Parent Participants (N = 207)

Variable	*n*	%
Family status		
Two-parent family	184	88.9
Single-parent family	17	8.2
Missing	6	2.9
Gender of person filling out form		
Female	175	84.5
Male	28	13.5
Missing	4	1.9
Parent education[a]		
High school or GED	5	2.4
Some college/2-year college/vocational	33	15.9
Bachelor's degree	66	31.9
Some graduate work	12	5.8
Master's degree	65	31.4
Doctoral degree	22	10.6
Missing	4	1.9
Spouse/Partner education		
No spouse/partner	17	8.2
High school or GED	15	7.2
Some college/2-year college/vocational	30	14.5
Bachelor's degree	54	26.1
Some graduate work	5	2.4
Master's degree	57	27.5
Doctoral degree	23	11.1
Missing	6	2.9

(continued)

Table 1 (continued)

Variable	*n*	%
Family income[b]		
Qualify for free or reduced-price lunch	13	6.3
Do not qualify	178	86.0
Missing	16	7.7
Number of children in the home		
1	47	22.7
2	94	45.4
3 or more	62	30.0
Missing	4	1.9
Number of hours respondent works per week[c]		
0–5	35	16.9
6–20	26	12.6
21–40	66	31.9
40 or more	76	36.7
Missing	4	1.9
Number of hours spouse/partner works per week		
0–5	5	2.4
6–20	10	4.8
21–40	31	15.0
40 or more	138	66.7
No spouse/partner	17	8.2
Missing	6	2.9
Race[d]		
Asian/Asian American	3	1.4
Asian/Indian	3	1.4
Biracial/Multiracial (non-Hispanic)	6	2.9
Black/African American	8	3.9
Hispanic/Hispanic American	8	3.9
Native Hawaiian/Pacific Islander	3	1.4
White	169	81.6
Missing	7	3.4

(continued)

Table 1 (continued)

Variable	*n*	%
Type of area		
Rural	12	5.8
Suburban	150	72.5
Urban	41	19.8
Missing	4	1.9

[a] For the analysis, this variable was collapsed into two groups: One parent has at least a bachelor's degree (*n* = 182; 87.9%) and Neither parent has at least a bachelor's degree (*n* = 18; 8.7%). [b] This variable was obtained from reported income data, reported family size, reported state or country of residence, and the accompanying eligibility requirements for free or reduced-price lunch. [c] For the analysis, this variable was collapsed into two groups: One parent is home at least 20 hours per week (*n* = 74; 35.7%) and Neither parent is home more than 20 hours per week (*n* = 127; 61.4%). [d] For the analysis, this variable was collapsed into two groups: White (*n* = 169; 81.6%) and Non-White (*n* = 31; 15.0%).

Table 2 shows the student characteristics. There are about an equal number of male and female students and a relatively even distribution of 5th through 12th graders. Parents reported that most students are considered to be in middle or high school and attend public school. Building size ranges from 70 to 5000 with a mean of 990 and a median of 800.

I measured SES through a combination of reported family size, income, and state or country of residence, and the free or reduced-price meal eligibility guidelines (for participants in the United States; Income Eligibility Guidelines for Free and Reduced Price Meals, 2009) or median income guidelines (for participants living in other countries; Central Bureau of Statistics [Israel], 2010; Statistics Austria, 2010; Statistics Canada, 2011). As outlined in Table 1, most families in this sample do not qualify for free or reduced-price lunch. This is significantly different from the population of the United States in which, as reported in the 2010 U.S. Census, 15.3% of people reported living below the poverty level (U.S. Census Bureau, n.d.b).

Table 2

Demographic Information for Students (N = 207)

Variable	*n*	%
Student gender		
Male	104	50.2
Female	103	49.8
Grade		
5[a]	23	11.1
6[b]	29	14.0
7[c]	28	13.5
8[d]	25	12.1
9	20	9.7
10	29	14.0
11	26	12.6
12	25	12.1
Ungraded middle schooler[e]	2	1.0
Grade level		
Elementary	22	10.6
Middle	76	36.7
High	109	52.7
Type of school[f]		
Charter	3	1.4
Magnet	1	0.5
Private/Independent	12	5.8
Public	178	86.0
Religious/Parochial	13	6.3
Building size (*M*)	990	
Median	800	
Interquartile range	450–1400	

[a] 16 elementary school, 7 middle school. [b] 3 elementary school, 26 middle school. [c] 1 elementary school, 25 middle school, 2 high school. [d] 1 elementary school, 18 middle school, 6 high school. [e] 1 elementary school, 1 high school. [f] For the analysis, this variable was collapsed into two groups: Public (*n* = 178; 86.0%) and Non-Public (*n* = 29; 14.0%).

As discussed, I did not have income information for 16 participants. As a result, I deleted these 16 participants from analysis of the main model (Research Question 1) and included them only in the analysis of the hypotheses for which SES was not entered as a potential control variable.

Instrument

I used an online version of a questionnaire (see Appendix C) that Hoover-Dempsey, Sandler, and their colleagues developed (Hoover-Dempsey & Sandler, 2005; Walker et al., 2005) and have used in some research (e.g., Hoover-Dempsey & Sandler, 2005). I obtained permission to use this survey from K. V. Hoover-Dempsey (personal communication, September 10, 2009).

This study is an extension of the study by Hoover-Dempsey and her colleagues (Green et al., 2007), which was conducted with elementary and middle school students (first through sixth grades), and used the same survey. The questionnaire includes 51 items (not including demographic questions) across 10 scales: (a) parents' perceived role construction for involvement, (b) parents' self-efficacy for helping their children succeed in school, (c) parents' perceptions of general school invitations to involvement, (d) parents' perceptions of specific teacher invitations to involvement, (e) parents' perceptions of specific child invitations to involvement, (f) parents' perceptions of personal skills and knowledge for involvement, (g) parents' perceptions of personal time and energy for involvement, (h) report of home-based involvement, (i) report of school-based involvement, and (j) demographic information. The questionnaire measures assess the broader topics of parents' motivational beliefs for involvement, perceptions of invitations to involvement from others, perceptions of life context variables that may prohibit involvement, and reports of home-based and school-based involvement practices.

The first page of the questionnaire explained the study. I considered each participant's decision to complete the questionnaire that participant's informed consent. The first page also explained that the study was anonymous and collected no identifying information. This precluded the need to code the data for confidentiality. Despite, this, I designed the online version of the survey so that the respondents were not required to report their annual income, as this tends to be a sensitive question. I asked participants to complete the survey about their oldest 5th through 12th grader, in case they have more than one child (Green et al., 2007; Hoover-Dempsey & Sandler, 2005).

Parents' motivational beliefs for involvement. Parents' role construction for involvement and parents' self-efficacy for involvement are the two constructs that fall under parents' motivational beliefs. Some parents, particularly those from certain cultures, do not believe that it is their role to be involved in their children's education (e.g., Wong & Hughes, 2006; Yan & Lin, 2005). Others, even when they believe their role is to be involved, do not believe they can make a difference (e.g., Hoover-Dempsey & Sandler, 2005; Reed et al., 2000). Parents responded to statements reporting how much they agreed or disagreed with each. There were six choices on a Likert-type scale, ranging from *disagree very strongly* to *agree very strongly*.

Parents' role construction for involvement. Parents' role construction includes how parents view and understand their roles and how that understanding affects which home-based and school-based activities they believe necessitate their participation (Hoover-Dempsey & Sandler, 1995, 1997, 2005). This scale (see Appendix D) includes 10 items. The alpha reliability for this scale was .81 for this study. Examples include, "I believe it's my responsibility to

volunteer at my child's school" and "I believe it's my responsibility to help my child with homework."

Parents' self-efficacy for helping their children succeed in school. Parents' sense of self-efficacy includes the belief parents have that, through their involvement at home, they have the ability to help their children learn and perform better in school (Bandura, 1977; Hoover-Dempsey & Sandler, 1995, 1997, 2005). This scale (see Appendix E) includes five items related to home-based involvement, such as, "I know how to help my child do well in school" and "I feel successful about my efforts to help my child learn" ($\alpha = .81$ for this study). Three of the items on this scale are reverse-scored (e.g., "I don't know if I'm getting through to my child").

Parents' perceptions of invitations to involvement from others. Additional motivators for parent involvement include who, if anyone, asks the parent to become involved at home and at school, as some parents will not become involved in their children's education unless they are invited by the school or teachers (e.g., Wong & Hughes, 2006; Yan & Lin, 2005). In addition, it is to be expected that the extent to which children ask parents to be involved influences some parents' involvement.

There are two types of questions in this scale. For the first type, parents responded to statements reporting how much they agree or disagree with each. Again, there were six choices on a Likert-type scale, ranging from *disagree very strongly* to *agree very strongly*. For other statements, parents reported how often each activity occurred, with six choices ranging from *never* to *daily*.

Parents' perceptions of general school invitations to involvement. These items asked parents the extent to which the school staff and the general school environment or climate make the parent feel that he or she contributes to the child's education and is welcome in the school

(Green et al., 2007; Hoover-Dempsey & Sandler, 1995, 1997, 2005). This scale (see Appendix F) includes six items, such as "Teachers at my child's school are interested and cooperative when they discuss my child" and "I feel welcome at my child's school" (α = .82 for this study).

Parents' perceptions of specific teacher invitations to involvement. The items in this scale (see Appendix G) asked parents to report the extent to which teachers provide specific invitations to either involvement in school-based activities or helping their child at home. Five items are included, such as, "My child's teacher(s) asked me or expected me to help my child with homework" and "My child's teacher(s) asked me to attend a special event at school." Alpha reliability for this scale was .70 for this study.

Parents' perceptions of specific child invitations to involvement. These items include requests to parents made by children for help with schoolwork or invitations to school-based involvement. This scale (see Appendix H) contains five items, including, "My child asked me to explain something about his or her homework" and "My child asked me to attend a special event at his or her school" (α = .75 for this study).

Parents' perceptions of life context variables that may prohibit involvement. The two constructs in the area of life context variables are parents' perceptions of personal skills and knowledge and their perceptions of their time and energy for involvement. Parents may be motivated and feel they can make a difference through their involvement in their children's education but may be hindered by their life circumstances, such as lack of formal education or work schedules (Green et al., 2007; Hoover-Dempsey & Sandler, 2005). Once again, parents responded to statements reporting how much they agree or disagree with each. There were six choices on a Likert-type scale, ranging from *disagree very strongly* to *agree very strongly*.

Parents' perceptions of personal skills and knowledge for involvement. This scale (see Appendix I) focuses on parents' perceptions of their own ability to help their children with schoolwork at home or be involved in school activities based on the skills and knowledge they believe they possess that would help them help their child succeed. It assumes that parents will be involved if they believe they have the skills and knowledge to make a difference in those areas (Hoover-Dempsey & Sandler, 2005). The scale ($\alpha = .80$ for this study) consists of six items, such as, "I know how to explain things to my child about his or her homework" and "I have the skills to help out at my child's school."

Parents' perceptions of personal time and energy for involvement. This scale (see Appendix J) contains items that tap into parents' perceptions of the demands on their time and energy that may prevent them from being involved in their child's education both at home and at school. Items included, "I have enough time and energy to help out at my child's school" and "I have enough time and energy to help my child with his or her homework." The scale, which consists of five items, had an alpha reliability of .79 for this study.

Reports of home-based and school-based parent involvement practices. Parent involvement is complex and multidimensional (e.g., Anderson & Minke, 2007; Fan & Chen, 2001), and researchers often differentiate between two types of involvement: home-based and school-based (e.g., Green et al., 2007). On a six-point scale ranging from *never* to *daily*, parents reported about the frequency of their involvement both at home and at their child's school.

Parents' report of home-based involvement. Parents reported the extent to which they or someone in their family participated in the child's education during activities that typically take place in the home. Questions in this scale (see Appendix K) include, "Someone in this family talked with my child about the school day" and "Someone in this family helped my child study

for a test." There are a total of four items in this scale (α = .76 for this study). The original survey (Green et al., 2007; Hoover-Dempsey & Sandler, 2005) included a total of five items. However, one of the items, "Someone in this family reads with this child," is specifically geared toward younger children. Because this study included parents of children who are in fifth grade and above, I eliminated this item.

Parents' report of school-based involvement. Parents also reported the extent to which they or someone in their family participated in activities at the school by responding to five items. Examples in this scale (see Appendix L) include, "Someone in this family helped out at my child's school" and "Someone in this family attended a PTA meeting." Alpha reliability for this scale was .54 for this study.

This low reliability may, in part, be due to some deleted responses. To the item "Someone in this family went to the school's open house," I deleted nine responses of "daily" and "a few times a week," as these events do not occur that often. To the item "Someone in this family attended a special event at my child's school," I deleted 16 responses of "daily" and "a few times a week" for the same reason.

Demographic information. In this section of the questionnaire, participants completed questions about the study child and their school (see Appendix M), such as what grade their oldest elementary, middle, or high schooler is in, how many students attend school in the child's building, the type of school the child attends, and the child's gender. In addition, parents answered questions pertaining to their personal backgrounds (Appendix N), including the highest degree they have earned, the number of hours they work per week, their annual family income, and their race or ethnicity. As family income per year is a sensitive question, even with the survey being anonymous, I did not require a response to this question.

Procedure

As the principal investigator of this study, I sought approval from the Institutional Review Board of the City University of New York, Graduate School and University Center. After I obtained this approval, I sought participation from my personal contacts through e-mail (see Appendix A) and posted links to the survey on Facebook and Twitter, as detailed above. In addition, I posted fliers in laundromats, supermarkets, and other public billboards around New York City and Westchester County, New York. I also sent an e-mail to an administrator at each school district in Westchester County to ask for their participation. The administrators at one school district distributed my questionnaire to parents of middle and high school students.

Participants completed the research questionnaire online. I estimated that the questionnaire would take participants approximately 10 minutes to complete. I provided my contact information at the beginning and end of the survey in case questions arose and so that participants who were interested could obtain a copy of the results of the study. Four participants contacted me for this purpose.

When participants submitted their survey responses, they were brought to a separate web site where they had the option of entering their e-mail addresses to enter a random drawing to receive one of two $25 Amazon.com gift cards. This ensured anonymity of responses, as e-mail addresses were in no way tied to participant responses. A total of 141 people chose to submit their e-mail addresses, and I distributed to the gift cards to the winners. I downloaded the responses of the completed questionnaires into a spreadsheet, which I then transferred into statistical software in order to analyze the responses.

Data Analysis

I used various statistical methods to test the research questions and hypotheses in this study. In addition, I collected demographic information, as shown in Tables 1 and 2.

I used multiple regression analysis and analysis of variance (ANOVA) to analyze the results of the survey. I ran the main model (Research Question 1) both controlling for race, SES, education, and employment status and not controlling for those variables in order to test whether these variables influenced the results. In addition, I obtained partial correlations for the study variables in order to determine the strength of significant relationships while controlling for the other variables. Lastly, I conducted some supplementary analyses with additional ANOVAs.

Chapter 4: Results

The primary aim of this study was to examine the predictive power of Hoover-Dempsey and Sandler's model of motivations for parent involvement (1995, 1997, 2005) for parents of older elementary, middle, and high school students. Another goal was to examine other factors that may contribute to the main study variables, such as parent demographic variables, student grade level, and school size. This chapter provides the results for the research questions and hypotheses for this study as well as the results of the additional analyses.

Data Exploration

As a first step to data analysis, I explored the data for the assumptions of the statistical tests I would be using. It should be noted that I did not utilize a random sample of the population for this study. In addition, as has been discussed, the sample for this study included individuals from a relatively restricted range on several demographic variables. Therefore, care should be taken in the application of the results of this study to populations that are different from this sample.

In order to investigate the sample, I first explored the frequency distributions of the data. I then explored the data for multicollinearity and found that the predictor variables are not highly correlated with one another. During a visual exploration of the data using scatterplots and histograms, I discovered that the data are linear and seem to follow a mostly normal distribution. I also plotted residuals and predicted values. Although I found that there are some outliers in the data, particularly for general school invitations to involvement, the data in general do not appear to be violating most assumptions of multiple regression. There is some heteroscedasticity and, in addition, there are some large and uneven standard deviations and sample sizes among different

groups. These issues with the data will be discussed in Chapter 5 in relation to the results of the ANOVAs.

The mean reported level of home-based involvement of 4.34 translates to parents being involved at home with their children at least once per week. This is similar to the mean of 4.95 reported by Green et al. (2007). The means for reported school-based involvement for the two studies are also similar, with a value of 1.95 for this study and 2.17 for Green et al.'s (2007) study. This indicates that parents in this study reported being involved in school activities approximately two times per year.

The alpha reliabilities for the scales ranged from .54 (for school-based involvement) to .82 (for general school invitations). All but one (school-based involvement) were between .70 and .82, which is considered acceptable to good for psychological research (Nunnally & Bernstein, 1994). In addition, although there are some large ranges and standard deviations for the scales, these seem to be typical for this type of research and are not dissimilar to the statistics reported by Green et al. (2007).

Correlations Among Study Variables

I calculated the zero-order correlations among all the variables in order to examine bivariate relationships. Table 3 shows these correlations and the descriptive statistics for the model variables. Most of the study variables are significantly correlated with one another, but there is no evidence of multicollinearity. Report of home-based involvement is significantly correlated with each variable that asks about home activities (all but general school invitations), and report of school-based involvement is significantly correlated with each variable that asks about school-based activities (all but self-efficacy). Table 4 presents a summary of the number of questions in each scale that are related to each outcome variable.

Table 3

Summary of Zero-Order Correlations and Descriptive Statistics for Model Variables (N = 207)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Motivational Beliefs									
1. Role Construction	—								
2. Self-Efficacy	.19**	—							
Invitations to Involvement									
3. General School Invitations	.29**	.29**	—						
4. Specific Teacher Invitations	.25**	–.07	.18*	—					
5. Specific Child Invitations	.24**	.04	.03	.38**	—				
Life Context Variables									
6. Skills and Knowledge	.45**	.41**	.30**	.28**	.37**	—			
7. Time and Energy	.52**	.32**	.29**	.14*	.03	.44**	—		
Reported Involvement Behaviors									
8. Home-Based Involvement	.39**	.14*	.08	.32**	.65**	.49**	.20**	—	
9. School-Based Involvement	.40**	.10	.15*	.33**	.43**	.32**	.36**	.30**	—
M	4.44	4.77	4.81	1.72	2.16	4.66	4.49	4.34	1.95
SD	0.71	0.87	0.81	0.65	0.80	0.79	0.83	1.04	0.55
Possible range	1–6	1–6	1–6	1–6	1–6	1–6	1–6	1–6	1–6
Skewness	–0.67	–1.10	–1.23	1.23	1.35	–0.93	–0.80	–0.24	2.01
Kurtosis	0.97	1.44	3.40	1.70	3.33	1.75	1.36	–0.72	7.96
α	.81	.81	.82	.70	.75	.80	.79	.76	.54

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

Table 4

Summary of Number of Questions Related to Each Outcome Variable

Variable	Number of Questions Related to Home-Based Involvement	Number of Questions Related to School-Based Involvement
Role construction	4	6
Self-efficacy	5	0
School invitations	0	6
Teacher invitations[a]	2	2
Child invitations	2	3
Skills and knowledge	3	3
Time and energy	2	3

[a] One additional item is related to neither home- nor school-based involvement.

As part of the multiple regressions run for Research Question 1, I also explored partial correlations (see Table 5). These indicate that, when controlling for all other study variables, role construction and specific child invitations are significantly correlated with parents' reports of both home-based involvement ($r = .20$, $p = .006$ and $r = .53$, $p < .001$, respectively) and school-based involvement ($r = .15$, $p < .05$ and $r = .33$, $p < .001$, respectively). In addition, report of home-based involvement is significantly correlated with skills and knowledge ($r = .27$, $p < .001$), and report of school-based involvement is significantly correlated with specific teacher invitations ($r = .22$, $p = .003$) and time and energy ($r = .26$, $p < .001$). Lastly, neither outcome variable is significantly correlated, on its own, with either self-efficacy or general school invitations.

Table 5

Summary of Partial Correlations for Outcome Variables (n = 191)

Variable	Home-Based Involvement	School-Based Involvement
Motivational Beliefs		
1. Role Construction	.20**	.15*
2. Self-Efficacy	.01	.06
Invitations to Involvement		
3. General School Invitations	–.09	–.04
4. Specific Teacher Invitations	.02	.22**
5. Specific Child Invitations	.53***	.33***
Life Context Variables		
6. Skills and Knowledge	.27***	–.03
7. Time and Energy	–.02	.26***

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

Demographic Control Variables

As has been found in previous research (e.g., Jimerson et al., 2000; Wong & Hughes, 2006), I hypothesized that race and SES would be associated with parents' reported level of home-based and school-based involvement. In addition, I hypothesized that parents' level of education and/or their work status would be associated with the outcome and predictor variables. I recorded these demographic variables as follows.

Race. As described earlier, parents reported on their racial or ethnic status in the demographic portion of the online questionnaire. Because of the narrow range of responses, for the analysis, the non-White and non-Hispanic categories were collapsed into one variable.

SES. Parents reported their income, family size, and state or country of residence so that eligibility for free or reduced-price lunch could be established. As mentioned earlier, the question about income was optional, and 16 out of the 207 participants did not select a response.

I performed a sensitivity analysis in order to determine whether the answers to this question had an effect on the analysis. First, I ran the model with all reported answers, which dropped those 16 people from the analysis. Then, I ran the model with all missing responses set to eligible for free or reduced-price lunch and again with all missing responses set to not eligible. Based on a comparison of the Beta weights and significance levels in the results, I determined that it was possible that whether the participants were eligibility for free or reduced-price lunch had an effect on one of the variables (specific teacher invitations) for one of the outcome variables (report of school-based involvement). Therefore, for the regression analysis, I did not include in the analysis the 16 people who are missing income information.

Parental education. Parents reported about their own level of education as well as their spouse or partner's level of education. I created a variable that indicated whether at least one parent in each home had a bachelor's degree, as this seemed to be an indicator of average education. I used this variable as one of the demographic control variables.

Parental work status. Parents reported the number of hours per week that both they and their spouse or partner work. As both home-based and school-based involvement depend upon a parent having the time to be involved (and not simply the perception of having the time to be involved), I created a variable based on whether at least one parent worked less than half-time (20 hours per week) and used this variable as one of the demographic control variables.

Predicting Home-Based and School-Based Parent Involvement: Results of the Multiple Regression Analyses

The main model for this study (Research Question 1) asked which independent variables (role construction; self-efficacy; perceptions of invitations to involvement from the school, teachers, and children; perceptions of skills and knowledge; and perceptions of time and energy)

would predict greater levels of each reported home- and school-based involvement for parents of older elementary, middle, and high school students. I used multiple regression analysis to examine the predictive power of these seven variables for both home-based and school-based involvement. First, I ran the full model for both outcomes with only the seven predictor variables. Then, I ran the model controlling for demographic variables.

Models with demographic variables. The results of the multiple regressions of the full models with control variables are represented in Appendices O and P. Because the control variables were all nonsignificant and did not significantly help explain the model (control variables explained only an additional 0.7% of the variance in home-based involvement and an additional 2.6% of the variance in school-based involvement), I will discuss only the model with the seven independent variables as predictors.

Report of home-based involvement (model without demographic variables). Table 6 presents a summary of the regression analysis predicting parents' reported home-based involvement. The constructs as a whole accounted for a significant portion of the variance, $F(7, 183) = 30.20$, $MSE = 0.53$, $p < .001$, $R^2 = .54$ (also see Figure 2). Specifically, role construction, perceptions of specific child invitations to involvement, and perceptions of personal skills and knowledge for involvement predicted significant amounts of the variance in reported home-based involvement. Parents' perceptions of general school invitations to involvement was not a significant predictor of the variance in parents' report of home-based involvement, nor was it significantly correlated with this outcome (see Table 3). However, although parents' self-efficacy for helping their children succeed in school, parents' perceptions of teacher invitations to involvement, and parents' perceptions of personal time and energy for involvement were

significantly correlated with reported home-based involvement, they were not significant predictors of the variance in this outcome.

Table 6

Summary of Multiple Regression Analysis for Variables Predicting Home-Based Involvement (n = 191)

Variable	*B(SE(B))*	*t*	*Sig.*
Motivational Beliefs			
1. Role Construction	0.27(0.10)	2.81**	.006
2. Self-Efficacy	0.01(0.07)	0.13	.900
Invitations to Involvement			
3. General School Invitations	–0.09(0.08)	–1.21	.229
4. Specific Teacher Invitations	0.03(0.10)	0.28	.779
5. Specific Child Invitations	0.67(0.08)	8.51***	.001
Life Context Variables			
6. Skills and Knowledge	0.34(0.09)	3.77***	.001
7. Time and Energy	–0.02(0.08)	–0.25	.807

$R^2 = .54$. $F(7, 183) = 30.20$***.

** $p < .01$. *** $p < .001$.

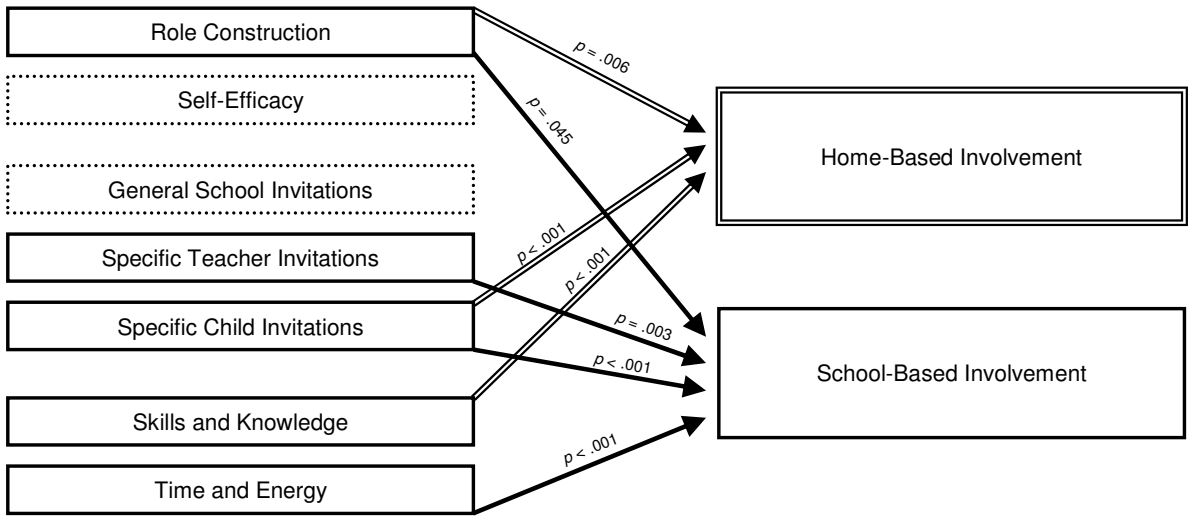

Figure 2. Summary of significant predictors of home-based and school-based involvement.

Report of school-based involvement (model without demographic variables). Table 7 presents a summary of the regression analysis predicting parents' level of school-based involvement (also see Figure 2). The constructs as a whole accounted for a significant portion of the variance, $F(7, 183) = 16.48$, $MSE = 0.15$, $p < .001$, $R^2 = .39$, though less than for the report of home-based involvement. Again, parents' role construction for involvement and parents' perceptions of specific child invitations to involvement predicted significant amounts of the variance in reported school-based involvement. However, parents' perceptions of personal skills and knowledge for involvement, although significantly correlated with report of school-based involvement, dropped out as a predictor. Additional significant predictors include parents' perceptions of specific teacher invitations to involvement and parents' perceptions of personal time and energy for involvement. Parents' perceptions of general school invitations to

Table 7

Summary of Multiple Regression Analysis for Variables Predicting School-Based Involvement (n = 191)

Variable	*B(SE(B))*	*t*	*Sig.*
Motivational Beliefs			
1. Role Construction	0.10(0.05)	2.02*	.045
2. Self-Efficacy	0.03(0.04)	0.84	.405
Invitations to Involvement			
3. General School Invitations	–0.02(0.04)	–0.48	.629
4. Specific Teacher Invitations	0.15(0.05)	3.01**	.003
5. Specific Child Invitations	0.20(0.04)	4.72***	.001
Life Context Variables			
6. Skills and Knowledge	–0.02(0.05)	–0.38	.708
7. Time and Energy	0.16(0.04)	3.65***	.001

$R^2 = .39$. $F(7, 183) = 16.48$***.

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

involvement was also significantly correlated with the outcome variable but did not predict a significant portion of the variance. Parents' self-efficacy for helping their children succeed in school was neither significantly correlated with report of school-based involvement nor a significant predictor of the outcome.

Student Grade-Level Differences and Reported Parent Involvement Activities

According to findings in Green et al.'s (2007) study, I hypothesized that parents' reported level of home- and school-based involvement would be significantly greater for elementary schoolers than for middle schoolers and for middle schoolers than for high schoolers, To examine these hypotheses, I first ran a one-way ANOVA to detect any mean differences in reported involvement practices. I found a significant difference in reports of home-based involvement, $F(2, 204) = 22.44$, $MSE = 0.90$, $p < .001$, $\eta^2 = .18$ (see Table 8 and Figure 3). To determine group differences and the size of the effect, I used Tukey post-hoc comparisons and calculated an effect size (Cohen's *d*) for each significant difference in means. I found that elementary school parents reported significantly higher levels of home-based involvement than did both middle school parents, Mean Difference = 0.67, $SE = 0.23$, $p = .011$, ES = 0.80, and high school parents, Mean Difference = 1.32, $SE = 0.22$, $p < .001$, ES = 1.34. Middle school parents also reported higher levels of home-based involvement than did high school parents, Mean Difference = 0.65, $SE = 0.14$, $p < .001$, ES = 0.66. Thus, H01, which stated that the level of home-based involvement reported by parents would be higher for parents of elementary schoolers than for parents of middle schoolers and for parents of middle schoolers than for parents of high schoolers, was fully supported.

I also found significant differences in reported school-based involvement among grade levels, $F(2, 204) = 9.58$, $MSE = 0.28$, $p < .001$, $\eta^2 = .09$ (see Table 8 and Figure 3). I found that

elementary school parents reported significantly higher levels of school-based parent involvement than both middle school parents, Mean Difference = 0.52, *SE* = 0.13, $p < .001$, ES = 1.00, and high school parents, Mean Difference = 0.52, *SE* = 0.12, $p < .001$, ES = 0.88. However, there was no significant difference in the levels of school-based involvement reported by parents of middle and high schoolers. In fact, the mean reported school-based involvement for parents of both middle and high schoolers was the same (1.89). These results show partial support for H02, which stated that the level of reported school-based involvement would be higher for parents of elementary schoolers than for parents of middle schoolers and for parents of middle schoolers than for parents of high schoolers.

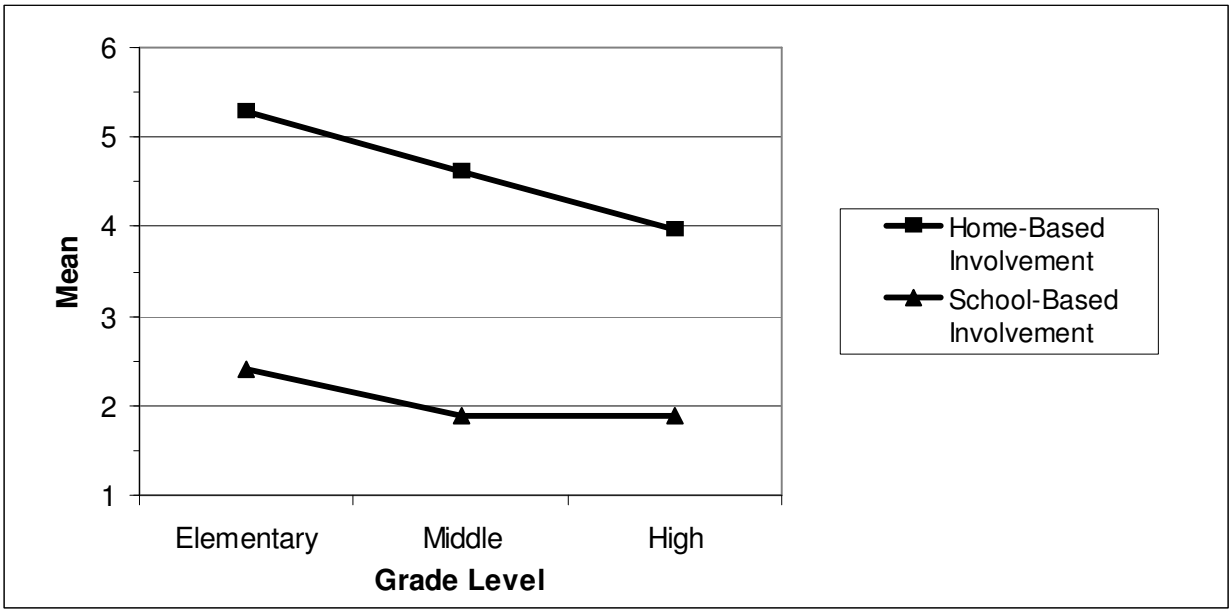

Figure 3. Home-based and school-based involvement by grade level.

Table 8

ANOVA Table of Grade-Level Differences and Study Variables (N = 207)

Variable	Sum of Squares		*df*	Mean Square	*F*	*Sig.*
Role Construction	Between Groups	0.46	2	0.23	0.45	.637
	Within Groups	102.66	204	0.50		
	Total	103.12	206			
Self-Efficacy†	Between Groups	0.88	2	0.44	0.57	.566
	Within Groups	156.79	204	0.77		
	Total	157.67	206			
General School Invitations†	Between Groups	0.87	2	0.44	0.67	.514
	Within Groups	132.92	204	0.65		
	Total	133.79	206			
Specific Teacher Invitations†	Between Groups	11.09	2	5.55	14.75***	.001
	Within Groups	76.72	204	0.38		
	Total	87.81	206			
Specific Child Invitations†	Between Groups	23.79	2	11.90	22.74***	.001
	Within Groups	106.73	204	0.52		
	Total	130.52	206			
Skills and Knowledge	Between Groups	14.84	2	7.42	13.17***	.001
	Within Groups	114.93	204	0.56		
	Total	129.77	206			

(continued)

Table 8 (continued)

Variable	Sum of Squares		*df*	Mean Square	*F*	*Sig.*
Time and Energy	Between Groups	0.53	2	0.27	0.39	.678
	Within Groups	139.98	204	0.69		
	Total	140.51	206			
Home-Based Involvement[†]	Between Groups	40.50	2	20.25	22.44***	.001
	Within Groups	184.15	204	0.90		
	Total	224.65	206			
School-Based Involvement[†]	Between Groups	5.28	2	2.64	9.58***	.001
	Within Groups	56.25	204	0.28		
	Total	61.53	206			

*** $p < .001$.

[†]Group variances are considered unequal based on Levene's test for equality of variances.

Student Grade-Level Differences and Motivations for Parent Involvement

Next, I investigated the relationship between grade level and the seven predictor variables that constitute parents' motivations for involvement. There were no significant differences between grade level and role construction (Research Question 2), self-efficacy (Research Question 3), general school invitations (Research Question 4), or time and energy (Research Question 8). However, there were significant differences for the other variables (see Table 8 and Figure 4).

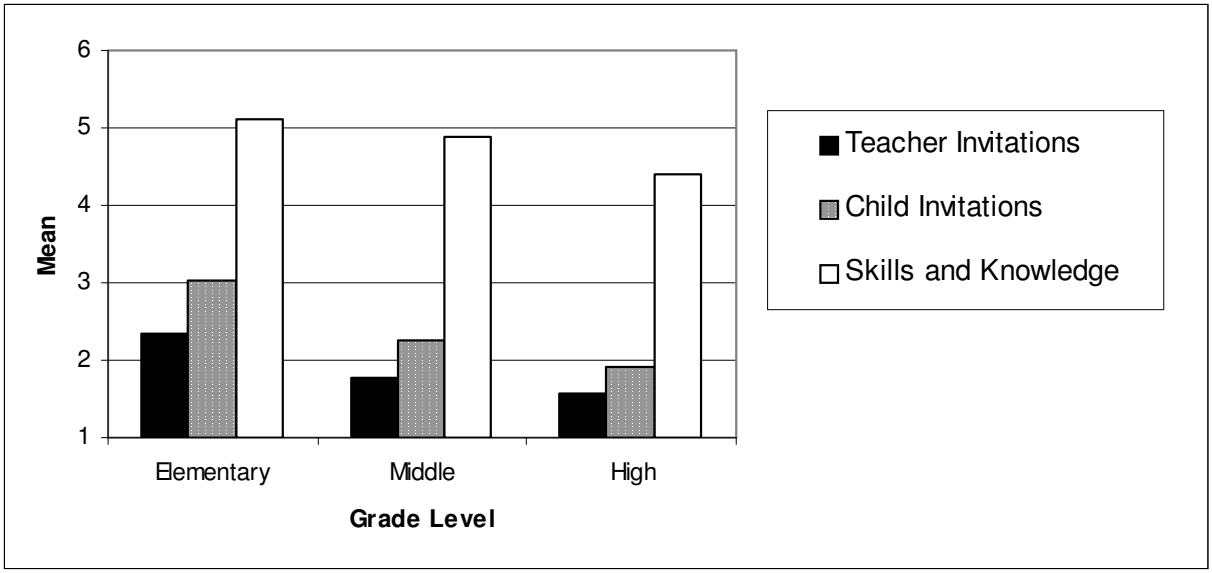

Figure 4. Grade-level differences among predictor variables.

Research Question 5 explored the differences of specific teacher invitations perceived by parents of elementary, middle, and high school students. I found significant differences among the groups, $F(2, 204) = 14.75$, $MSE = 0.38$, $p < .001$, $\eta^2 = .13$, and, once again, used Tukey post-hoc comparisons and Cohen's *d*s to further investigate the group differences and effect sizes. I found statistically significant differences between elementary and middle school parents' perceived teacher invitations to involvement, Mean Difference = 0.55, $SE = 0.15$, $p < .001$, ES =

0.80, and between elementary and high school parents' perceptions of these invitations, Mean Difference = 0.77, $SE = 0.14$, $p < .001$, ES = 1.22. However, the differences between elementary and high school parents' perceived invitations from teachers was only marginally significant, Mean Difference = 0.21, $SE = 0.09$, $p = .052$, ES = 0.38.

Research Question 6 asked about the relationship between grade level and perceptions of specific child invitations to involvement. I found significant differences among the grade levels, $F(2, 204) = 22.74$, $MSE = 0.52$, $p < .001$, $\eta^2 = .18$. Tukey post-hoc comparisons revealed significant differences among the specific child invitations perceived by parents of children in all three grade levels: elementary and middle, Mean Difference = 0.74, $SE = 0.18$, $p < .001$, ES = 0.86, elementary and high, Mean Difference = 1.10, $SE = 0.17$, $p < .001$, ES = 1.63, and middle and high, Mean Difference = 0.36, $SE = 0.11$, $p = .003$, ES = 0.54.

Lastly, Research Question 7 asked about the relationship between grade level and perceptions of personal skills and knowledge for involvement. The initial group comparison revealed a significant difference among the groups, $F(2, 204) = 13.17$, $MSE = 0.56$, $p < .001$, $\eta^2 = .11$. Further analysis through Tukey post-hoc comparisons showed a difference between middle and high school levels, Mean Difference = 0.47, $SE = 0.11$, $p < .001$, ES = 0.62, and, thus, also between elementary and high school levels, Mean Difference = 0.70, $SE = 0.18$, $p < .001$, ES = 0.83. The difference between perceived skills and knowledge for parents of elementary versus middle schoolers was not significant.

Additional Analyses

Differences based on building size. There was a large range in building size among the sample. Parents reported that their child's school building contained anywhere from 70 to 5,000 students ($M = 990$, $Mdn = 800$). Results of the ANOVA (see Appendix Q) indicated that the

number of students per building was not related to either reported home-based involvement or school-based involvement.

Further analysis of the seven independent variables indicated that there was a significant relationship between building size and parents' perceptions of general school invitations to involvement, $F(57, 149) = 1.71$, $MSE = 0.54$, $p = .005$. A graphical analysis of these data (see Figure 5) indicated a trend toward fewer perceived invitations as school size increased. However, there were many outliers.

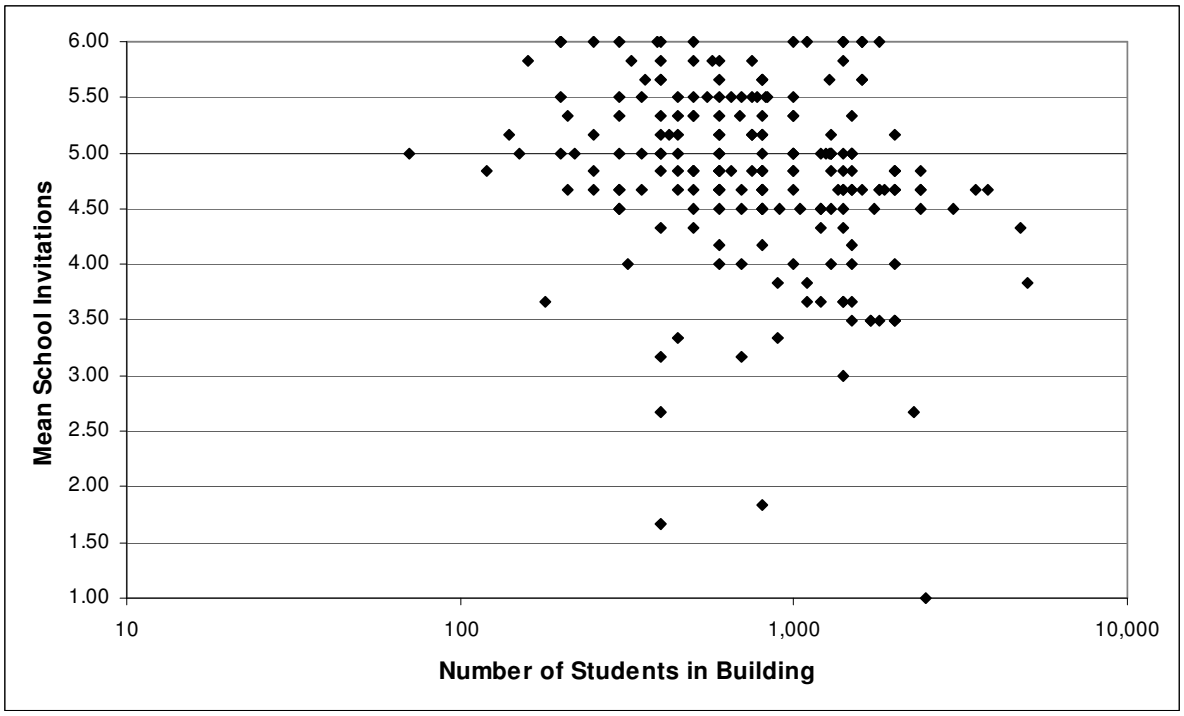

Figure 5. Scatterplot of building size differences and mean school invitations (using a logarithmic scale for number of students in building).

Differences by grade. I used ANOVAs to explore mean differences in parent reports by grade (see Appendix R). Although there is a general trend toward lower means for parents of students in higher grade levels for all of the variables, not surprisingly, the significant differences follow very similar patterns as the significant grade-level differences.

In addition, despite the varying distribution of grades among school districts (e.g., there are 23 fifth graders, 16 of whom are in elementary school and 7 of whom are in middle school), there are similar differences among grades as among grade levels. Notably, the variables that have significant differences by grade are the same as those that indicated significant grade-level differences: home-based involvement, $F(8, 198) = 7.84$, $MSE = 0.86$, $p < .001$, school-based involvement, $F(8, 198) = 2.78$, $MSE = 0.28$, $p = .006$, teacher invitations, $F(8, 198) = 3.41$, $MSE = 0.39$, $p = .001$, child invitations, $F(8, 198) = 7.64$, $MSE = 0.50$, $p < .001$, and skills and knowledge, $F(8, 198) = 4.47$, $MSE = 0.56$, $p < .001$.

I further explored any differences among the fifth, sixth, seventh, and eighth graders who are in different grade levels. The only significant differences that emerged were between eighth graders who are in middle school versus eighth graders who are in high school. Parents of eighth grade middle schoolers reported significantly greater self-efficacy for helping their children succeed in school, $F(1, 22) = 6.07$, $MSE = 0.60$, $p = .022$, significantly greater perceptions of general school invitations to involvement, $F(1, 22) = 4.63$, $MSE = 0.34$, $p = .043$, and significantly greater perceptions of time and energy for involvement, $F(1, 22) = 13.13$, $MSE = 0.58$, $p = .022$. However, given the number of students in each sample (18 middle schoolers and six high schoolers), these results should be interpreted with caution.

Differences among type of geographic area. I was interested in exploring whether there were significant differences in reported parent involvement practices or motivations among rural, suburban, and urban areas. The ANOVAs I ran (see Appendix S) detected significant differences in child invitations, $F(2, 200) = 5.53$, $MSE = 0.61$, $p = .005$, and time and energy, $F(2, 200) = 3.53$, $MSE = 0.67$, $p = .031$. Tukey post-hoc tests, although unreliable because of the unevenness of the group sample sizes, revealed that parents in urban areas may perceive significantly more

invitations from their children than parents in either suburban (Mean Difference = 0.41, *SE* = 0.14, *p* = .01, ES = 0.51) or rural (Mean Difference = 0.67, *SE* = 0.26, *p* = .03, ES = 0.82) areas and that parents in suburban areas perceive that they have more time and energy for involvement than do parents in urban areas (Mean Difference = 0.37, *SE* = 0.14, *p* = .03, ES = 0.44).

Public versus non-public school. I explored mean differences among the nine main study variables (the seven independent variables and two dependent variables) and school type (public or non-public). The only significant difference (see Appendix T) was for parents' perceptions of general school invitations, *F*(1, 205) = 3.90, *MSE* = 0.64, *p* = .05, with parents of non-public school students perceiving more school invitations than parents of public school students. However, given the mean difference (0.32 on a 6-point scale), the significance level (*p* = .05), and the large number of comparisons, this difference could have been found due to chance.

Summary of Findings Related to Main Study Research Questions and Hypotheses

Table 9 presents a summary of the main study research questions and hypotheses. Two of the investigations were fully supported, three were partially supported, and three were not supported.

Multiple regression analysis showed that, as a whole, the main model significantly predicted parents' reported home- and school-based involvement. In addition, some of the independent variables predicted significantly greater levels of reported home- and school-based involvement on their own. Specifically, role construction and perceptions of child invitations to involvement predicted both reported home- and school-based involvement, perceptions of skills and knowledge also predicted reported home-based involvement, and specific teacher invitations and perceptions of time and energy also predicted reported school-based involvement.

ANOVA and Tukey post-hoc tests confirmed that elementary school parents reported significantly higher levels of home-based parent involvement than did both middle and high school parents and that elementary school parents reported significantly higher levels of school-based involvement than did high school parents. However, there were no significant differences among the three grade levels for parents' role construction for involvement, parents' self-efficacy for helping their children succeed in school, parents' perceptions of general school invitations to involvement, or parents' perceptions of personal time and energy for involvement.

ANOVA and Tukey post-hoc tests confirmed statistically significant differences for perceptions of specific teacher invitations between parents of elementary and middle school students and parents of elementary and high school students. The difference between perceptions of parents of middle and high school students was marginally significant.

ANOVA and Tukey post-hoc tests also confirmed statistically significant differences for parents' perceptions of specific child invitations to involvement for all three grade levels. Further, ANOVA and Tukey post-hoc tests revealed significant differences in perceptions of personal skills and knowledge for involvement between elementary and high school parents and middle and high school parents. However, there was no significant difference between perceptions of skills and knowledge between parents of elementary and middle schoolers.

Table 9

Summary of Main Study Research Questions and Hypotheses

RQ/H0 Number	Research Question/Hypothesis	Evidence For/Against	Supported/ Not Supported
RQ1	Which independent variables (role construction; self-efficacy; invitations to involvement from the school, teachers, and children; skills and knowledge; and time and energy) will predict greater levels of each reported home- and school-based involvement for parents of older elementary, middle and high school students?	Multiple regression analysis showed that, as a whole, the model did predict reported home- and school-based involvement. Individually, role construction, child invitations, and skills and knowledge significantly predicted higher levels of reported home-based involvement, and role construction, teacher invitations, child invitations, and time and energy predicted higher levels of reported school-based involvement.	Partially supported
H01	The level of home-based involvement reported by parents will be higher for parents of elementary schoolers than for parents of middle schoolers and for parents of middle schoolers than for parents of high schoolers.	ANOVA and Tukey post-hoc tests confirmed that elementary school parents reported significantly higher levels of home-based parent involvement than did both middle and high school parents and that middle school parents reported significantly higher levels of parent involvement than did high school parents.	Fully supported

(continued)

Table 9 (continued)

RQ/H0 Number	Research Question/Hypothesis	Evidence For/Against	Supported/ Not Supported
H02	The level of school-based involvement reported by parents will be higher for parents of elementary schoolers than for parents of middle schoolers and for parents of middle schoolers than for parents of high schoolers.	ANOVA and Tukey post-hoc tests confirmed that elementary school parents reported significantly higher levels of school-based parent involvement than did middle school parents. However, there was no significant difference in the levels of reported school-based involvement for middle and high school parents.	Partially supported
RQ2	What is the relationship between grade level (elementary, middle, or high school) and parents' role construction for involvement?	ANOVA revealed no significant differences among the three grade levels for parents' role construction for involvement.	Not supported
RQ3	What is the relationship between grade level (elementary, middle, or high school) and parents' self-efficacy for helping their children succeed in school?	ANOVA revealed no significant differences among the three grade levels for parents' self-efficacy for helping their children succeed in school.	Not supported
RQ4	What is the relationship between grade level (elementary, middle, or high school) and parents' perceptions of general school invitations to involvement?	ANOVA revealed no significant differences among the three grade levels for parents' perceptions of general school invitations to involvement.	Not supported

(continued)

Table 9 (continued)

RQ/H0 Number	Research Question/Hypothesis	Evidence For/Against	Supported/ Not Supported
RQ5	What is the relationship between grade level (elementary, middle, or high school) and parents' perceptions of specific teacher invitations to involvement?	ANOVA and Tukey post-hoc tests confirmed a statistically significant difference between perceptions of specific teacher invitations between parents of elementary and middle school students and parents of elementary and high school students. The difference between perceptions of parents of middle and high school students was marginally significant.	Partially supported
RQ6	What is the relationship between grade level (elementary, middle, or high school) and parents' perceptions of specific child invitations to involvement?	ANOVA and Tukey post-hoc tests confirmed a statistically significant difference in parents' perceptions of specific child invitations to involvement for all three grade levels.	Fully supported

(continued)

Table 9 (continued)

RQ/H0 Number	Research Question/Hypothesis	Evidence For/Against	Supported/ Not Supported
RQ7	What is the relationship between grade level (elementary, middle, or high school) and perceptions of personal skills and knowledge for involvement?	ANOVA and Tukey post-hoc tests revealed significant differences in parents' perceptions of personal skills and knowledge for involvement between parents of elementary and high school students and parents of middle and high school students. However, there was no significant difference in the perceived skills and knowledge of parents of elementary and middle schoolers.	Partially supported
RQ8	What is the relationship between grade level (elementary, middle, or high school) and perceptions of personal time and energy for involvement?	ANOVA revealed no significant differences among the three grade levels for parents' perceptions of personal time and energy for involvement.	Not supported

Chapter 5: Discussion

This chapter presents and discusses the key findings resulting from the statistical analyses in this study. This is followed by a discussion of the implications of the findings, limitations of the study, and directions for future research.

Key Findings

The purpose of this study was to add to the scant research literature on parents' motivations for involvement in their older elementary, middle, and high school children's education. Because parent involvement is so essential for children's success in school (e.g., Fan & Chen, 2001; Jeynes, 2003, 2005, 2007), it is important to investigate what motivates parents to become involved so that we can use this information to promote involvement.

Factors affecting reported home-based parent involvement. In their study, Green et al. (2007) found that Hoover-Dempsey and Sandler's model of parent involvement (1995, 1997, 2005) significantly predicted parents' reports of home-based involvement for parents of first through sixth graders. Specifically, they found that parents' self-efficacy, their perceptions of invitations from their children to involvement, and their perceptions of their personal time and energy for involvement were the strongest predictors of this involvement.

In this study, the model significantly predicted reports of home-based involvement for parents of 5th through 12th graders. However, although parents' perceptions of child invitations to involvement was a significant predictor, for these parents of older children, self-efficacy and perceptions of time and energy were not. Instead, parents' role construction and their perceptions of their personal skills and knowledge for involvement were the other significant predictors of reported home-based involvement.

Grade-level differences in significant predictors. Although the reported level of home-based involvement was significantly lower for parents of middle schoolers versus elementary schoolers and for parents of high schoolers versus middle schoolers (and, therefore, for parents of high schoolers versus elementary schoolers), parents' role construction did not differ significantly for parents of students in different grade levels. That is, although parents of students in higher grades reported significantly less involvement at home, parents' belief that they should be involved was similar regardless of the grade level of their children. This supports the theory (Hoover-Dempsey & Sandler, 1995, 1997, 2005) and research (Hoover-Dempsey & Sandler, 2005; Reed et al., 2000; Walker et al., 2005) that role construction is one of the most important motivations for parent involvement. In addition, we can conclude that, for the population in this study, the lower levels of home-based involvement reported by parents of older students must be due to other factors.

Parents' perceptions of invitations from children to involvement as well as their perceptions of their personal skills and knowledge for involvement differed across the grade levels, with reports of children's invitations being lower for parents of middle schoolers versus elementary schoolers and for parents of high schoolers versus middle schoolers (and, therefore, for parents of high schoolers versus elementary schoolers). This indicates that this may be a reason why reports of home-based involvement were lower for parents of children in the upper grades. As children get older, they begin to seek independence and likely do request parents' involvement less (e.g., Patall et al., 2008). Therefore, although we cannot assume causation, it is reasonable to suppose that parents respond to their children's decreasing invitations by being less involved.

In addition, parents' perceptions of their skills and knowledge was significantly lower for parents of high schoolers than for parents of middle schoolers. This seems another likely factor of the difference in home-based involvement between lower and higher grades. As children progress in school, their work becomes more difficult. Even though many parents studied the same subjects that their children are learning, they nonetheless may not feel confident in, for example, helping their children with advanced mathematics or a high level of a foreign language.

Readers will note that study data are cross-sectional rather than longitudinal. Therefore, although they suggest decreasing home-based parent involvement and parental perceptions of their skills and knowledge as well as fewer invitations to involvement from their children as they progress through school, longitudinal data would provide greater support for these assertions. In addition, the number of participants was not sufficient to explore interactions among grade-level differences in motivations for involvement and type of involvement (home-based versus school-based).

Moreover, the racial demographics of the parents in the Green et al. (2007) study are quite different than those of the parents in this study. In the Green et al. study, a higher percentage of parents were Asian, Black, or Hispanic. Thus, the differences in the results of the two studies may not be due to grade-level differences alone.

Factors affecting reported school-based parent involvement. In their study of first through sixth graders, Green et al. (2007) found that Hoover-Dempsey and Sandler's model of parent involvement (1995, 1997, 2005) significantly predicted parents' reports of school-based involvement. Specifically, they found that parents' role construction, self-efficacy, perceived invitations from teachers and their children to involvement, and perceptions of their personal time and energy for involvement were the strongest predictors of this involvement.

In this study of parent involvement for parents of 5th through 12th graders, the model also significantly predicted parents' reports of school-based involvement. Each of the variables that predicted reports of school-based involvement in Green et al.'s (2007) study (role construction, teacher invitations, child invitations, and time and energy) except self-efficacy also predicted reports of school-based involvement for these parents of older students. In their own study, Anderson and Minke (2007) found mixed results regarding parents' sense of self-efficacy, and this conflicting result with the Green et al. (2007) study may support Anderson and Minke's conclusion that self-efficacy may be too complex a construct for current measures to assess accurately.

Grade-level differences in significant predictors. Reported school-based involvement was significantly lower for parents of middle and high schoolers than for parents of elementary schoolers, but parents of middle and high schoolers did not report statistically significant different levels of involvement. Once again, parents' role construction did not differ across the grade levels, indicating that, although parents of older students reported that they are significantly less involved directly at school than did parents of younger students, the belief of parents of older students that they should be involved did not differ. Thus, once again, role construction remains an important variable in predicting parent involvement and, for the population in this study, the reported differences in school-based involvement across the grade levels must be due to other factors than parents' belief of whether or not they should be involved.

Parents' reports of their perceived time and energy for involvement also did not differ across grade levels. This indicates that the reason that parents of older students are less involved is not because of a perceived lack of time or energy.

However, as discussed, parents of high schoolers reported significantly fewer invitations to involvement from their children than did parents of middle schoolers, who reported significantly fewer invitations from their children than parents of elementary schoolers. In addition, parents' reports of their perceived invitations from teachers to become involved were significantly lower for parents of middle schoolers versus elementary schoolers and for parents of high schoolers versus middle schoolers (and, therefore, for parents of high schoolers versus elementary schoolers). Thus, it is reasonable to assume, while still keeping in mind that data are cross-sectional rather than longitudinal and that interactions may exist, that a perceived decrease in invitations from children and teachers by parents of students in progressively higher grade levels contributed to older students' parents' reports of lesser school-based involved.

Results of Additional Analyses

Although this study did not find that parents' perceptions of general school invitations to involvement was a significant predictor of reported home-based or school-based involvement, school invitations has emerged as a significant predictor in previous studies (e.g., Hoover-Dempsey & Sandler, 2005; Reed et al., 2000). In this study, parents' perceptions of general invitations from the school is the only variable that seemed to be affected by the size and type of the school. That is, parents who reported larger school building sizes also reported significantly fewer invitations from the school to become involved. In addition, school invitations was the only variable that differed significantly between public and non-public schools, with parents of public school students reporting significantly fewer invitations to involvement from the schools.

Perceived school invitations also emerged as significantly different between parents of eighth grade middle schoolers and eighth grade high schoolers, with parents of eighth graders who are considered to be in middle school reporting significantly more perceived invitations

from their children's schools. In addition, parents of middle school eighth graders reported significantly greater self-efficacy for helping their children succeed in school and significantly greater perceptions of personal time and energy for involvement than parents of eighth graders who are considered to be in high school. Although these results should be interpreted with caution because of the small and uneven sample sizes (18 eighth graders in middle school and six in high school), they appear to be a further indication of the true differences in the roles parents feel they play in the educational lives of their students as they progress through school.

There were several differences among reports from parents based on whether they live in rural, suburban, or urban areas. It should be noted that the sample sizes among these groups differ significantly. However, the results seem to indicate that parents in urban areas perceive significantly more invitations to involvement from children than parents in either rural or suburban areas. This is counter-intuitive, as it would be logical to assume that urban children are more independent than students from other areas in which, for example, parents are needed to drive children to and from school and other activities. However, this could be the result of the proximity of schools to homes in some urban areas. That is, it is possible that parents in urban areas have more opportunities to be involved in schools if the schools are closer to their homes. On the other hand, it is also possible that urban parents perceive more invitations from their children than those in other areas because suburban and rural parents are more involved already—perhaps their children do not have to ask them to be involved.

Another finding is that parents in suburban areas perceive more time and energy for involvement than parents in urban areas. If we think about city life as more hectic, this result makes some sense. However, in order to draw conclusions about both of these findings, more research and larger samples are needed.

Correlations and Partial Correlations Among Study Variables

Report of home-based involvement was significantly correlated with each predictor variable that asked questions about home involvement (every variable except general school invitations), and report of school-based involvement was significantly correlated with each predictor variable that asked about school involvement (every variable except self-efficacy). However, when controlling for all other variables (examining the partial correlations), report of home-based involvement was no longer significantly correlated with self-efficacy, teacher invitations, or time and energy. Similarly, the partial correlations for reported school-based involvement show that, when controlling for all other variables, this outcome variable was no longer significantly correlated with school invitations and skills and knowledge. This indicates that the zero-order correlations of these variables are influenced by other predictor variables.

It is interesting that, when controlling for all other variables, reported home-based involvement was not significantly correlated with self-efficacy and that reported school-based involvement was not correlated with school invitations. As discussed earlier, all five questions on the self-efficacy scale asked about home-based involvement, and all six questions on the school invitations scale asked about school-based involvement. In this study, neither of these predictor variables emerged as significant in either model, whereas they have been useful predictors in previous research. In fact, Hoover-Dempsey and Sandler (1995, 1997, 2005) theorize that, after role construction, self-efficacy is the most important predictor of parent involvement, and that feelings of self-efficacy may even moderate parents' role construction. Moreover, both research (e.g., Hoover-Dempsey & Sandler, 2005; Reed et al., 2000) and logic dictate that parents are likely to become more involved in schools the more they are invited by the schools to participate.

This study does support Hoover-Dempsey and Sandler's (1995, 1997, 2005) theory that role construction is an important factor in parent involvement. However, for this sample, when controlling for all other variables, parents' perceptions of their children's invitations to involvement is the variable that is most significantly related to parents' reports of both home-based and school-based involvement.

Implications for Practice

This study has the potential to help schools and teachers in working with parents as partners in children's education. Given that parents' perceived teacher invitations are important in predicting parents' reports of school-based involvement, it may be that increasing teacher invitations would increase parents' school-based involvement, which is significantly lower than their reported home-based involvement in this study as well as in others (e.g., Green et al., 2007; Walker et al., 2011).

Interventions such as Family Science Night (Kaya & Lundeen, 2010) can be used to increase not only parents' interest in helping their children but also children's interest in involving their parents. When children see that having parents involved is fun (and beneficial to their success in school), they may be more inclined to invite their parents to become involved through such activities. Given that child invitations have been found to be significantly related to both home- and school-based involvement in this study as well as in others (e.g., Deslandes & Bertrand, 2005; Green et al., 2007), it seems reasonable to assume that increasing opportunities for children to invite their parents would almost certainly increase involvement.

Moreover, Cucchiara and Horvat (2009) found that involving parents in group activities—what they refer to as a collective approach to parent involvement—had a more positive impact on children's educational experiences than did individual parent involvement.

They also concluded that the collective approach is more sustainable than individual involvement. Similarly, the majority of the charter schools in the study by Smith et al. (2011), as a strategy to get parents more involved, provided services at the schools, such as GED or English classes, an employment office, and help with housing or food needs. The schools also offered suggestions to parents on how to get involved, such as what to do on class trips and what types of questions to ask at the school—which Smith and her colleagues hypothesized also served to increase parents' sense of self-efficacy for involvement.

Furthermore, getting parents involved can benefit the school as a whole. For example, Sui-Chu and Willms (1996) found that the academic achievement of eighth graders "did not depend so much on whether his or her own parents participated, but on the average level of participation of all parents at the school" (p. 236).

Hoover-Dempsey, Sandler, and their colleagues have found that it is important for schools to stress in-service teacher training for parent involvement (e.g., Hoover-Dempsey, Walker, Jones, & Reed, 2002). However, one study (Hornby & Witte, 2010) found that only eight out of 22 rural New Zealand elementary schools surveyed made such trainings available. This was an especially concerning finding, as none of the schools had written parent involvement policies[2], so much of the responsibility for involving parents was placed on the teachers.

There are several good in-service programs for teachers (e.g., Balli, Demo, & Wedman, 1998; Epstein & Van Voorhis, 2001), some of which are intended to assist teachers in promoting parents' educational interactions with children at home, specifically targeting parents' role

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[2] The authors note that parent involvement is listed as an educational priority by the New Zealand government but, unlike in the United States, a written parent involvement policy is not part of New Zealand's education law.

construction and self-efficacy (Hoover-Dempsey et al., 2002). This could also increase involvement, as this study showed that role construction is a motivating factor for parents for both home- and school-based involvement.

In addition, teachers can potentially be important figures in increasing parents' perceptions of their own skills and knowledge for helping their children at home—and even for helping parents actually improve their skills so that they are better able to help their children. Teacher invitations are seemingly more influential for parents' involvement activities than are general invitations from the school, and Anderson and Minke (2007) write that teacher invitations are also easier to control. Thus, teachers are in a unique position to increase parents' levels of involvement at home and at school as well as their feelings about that involvement.

Limitations of This Study

Although the findings of this study make important contributions to the fields of school psychology and education as a whole, there are several limitations. First, the sample size is relatively small, and the sample is mostly White, highly educated, and higher SES. This is likely due, at least in part, to the recruitment procedure and the online-only response method. In addition, as a result of the small sample size and restricted range of demographics, I collapsed the non-White racial categories, which is potentially problematic, as previous research has shown differences in the involvement practices of groups of racial minority parents both when compared to one another and when compared to White parents (e.g., Wong & Hughes, 2006).

Moreover, the data in this study, likely at least partially due to small sample size, have large ranges and standard deviations, and there are uneven sample sizes among comparison groups. There were also several outliers in the data that may have contributed to the large standard deviations. At the same time, it should be noted that other studies that use the same or

similar surveys—some with much larger sample sizes (e.g., Green et al., 2007) and some with smaller sample sizes (e.g., Walker et al., 2011)—have similarly large standard deviations. Thus, this may be due to the survey itself and not to the sample for this study.

Additionally, this study asked parents to report about their own home-based and school-based involvement activities. There may be a degree to which parents answer about what they know they are supposed to do rather than about what they are, in fact, doing. It is therefore necessary to keep in mind that this study did not measure actual parent involvement practices but rather parents' reports of their educational involvement. In fact, some research has shown that both involved and uninvolved parents report that they are actively involved in their children's education (Lawson, 2003).

Moreover, this study did not assess parents' reasons for being involved or not being involved. For example, it is unclear whether some parents are involved because their children are not doing well in school (e.g., Fan & Chen, 2001) and, similarly, if others are not involved because their children are doing well and/or specifically request that they not be involved (as opposed to simply fail to invite them to be involved).

Finally, this study was cross-sectional rather than longitudinal. Although it suggests trends in parental behaviors and beliefs as children progress in school, no definitive developmental statements can be made.

Directions for Future Research

As found in the pilot study for this project (Jaspen & Tryon, 2009), it seems that, when considering parent involvement, we must look at not just one variable but at involvement as a whole. In addition, children's invitations have emerged in several studies as a highly important

factor for parent involvement (e.g., Green et al., 2007; Walker et al., 2011), and this study confirms the finding that considering children's opinions about parent involvement is important.

Both Green et al.'s (2007) study and this study found that the Hoover-Dempsey and Sandler model of motivations for parent involvement (1995, 1997, 2005) predicted parents' reports of both home-based and school-based involvement. In addition, Green at al. wrote, "the model's differential ability to explain levels of home-based and school-based involvement reveals the importance of carefully defining types of parental involvement" (p. 541). In fact, it may be prudent for future research to revise the model (and the questionnaire) even further and separate questions within each scale so that they are related to only home-based or only school-based involvement.

Further revisions to the questionnaire may also be needed. For example, in other studies (e.g., Green et al., 2007), self-efficacy has been found to be a significant factor in predicting parent involvement, but skills and knowledge has not. I theorized that this difference was due to the greater difficulty of the work in the higher grades and parents' lack of belief that they have the skills to help their children. However, this finding could be due to a confusion of the two constructs. It would be prudent for future researchers to examine the items in these two scales more closely as well as conduct a factor analysis in order to ensure that these subscales are measuring two distinct constructs.

Another change to the questionnaire that seems necessary is the number of answer choices for some of the questions about parents' school-based involvement. The current questionnaire allows parents to respond that they attended an open house or a special event at their child's school *daily* or *several times per week*. As this is not possible, I deleted these responses from the data set for this study, but this could have had an effect on the results. In their

study, Anderson and Minke (2007) revised the answer choices to the questions about school-based involvement so that they were based on a three-point Likert-type scale with choices of *never*, *once*, and *more than once*. These answer choices better reflect the opportunities parents have for this type of involvement.

Finally, when measuring reported levels of parent involvement, it may also be important to assess whether parent involvement is required by the school and whether the parent is an educator. Both of these situations may serve to increase parent involvement and potentially even create a culture in which parents are overinvolved.

As discussed, this study did not assess parents' reasons for being involved or not being involved. Previous researchers (e.g., Fan & Chen, 2001) have hypothesized that higher levels of parent involvement may be the result of the academic needs of a struggling child. Thus, information about the reasons for involvement becomes especially important when examining the influence of parent involvement on student achievement.

Larger sample sizes are needed in order to determine interactions among the variables, some of which may be moderator variables rather than predictors. For example, Hoover-Dempsey and Sandler (1995, 1997, 2005) theorize that self-efficacy may moderate parents' role construction. While parents' self-efficacy did not emerge as a significant predictor in this study, it may have served as a moderator for parents' beliefs about their involvement and affected their involvement practices. Further, Anderson and Minke (2007) hypothesize that parents' perceptions of invitations to involvement may influence their role construction and self-efficacy, which then influences their level of involvement. In addition, as Pajares and Schunk (2001) theorize that self-efficacy may account for why those with similar skills and knowledge behave

differently, self-efficacy may moderate skills and knowledge. It may be that a path analysis could explain the direct and indirect influence these variables have on one another.

It also continues to be important to examine the predictive power of this model across cultural groups and school types as well as replicate this study for this developmental group. This study is only the first step in confirming that Hoover-Dempsey and Sandler's model of motivations for parent involvement (1995, 1997, 2005) is generalizable to older students. Future studies should use a longitudinal design to follow possible changes in parents' motivation for involvement over the course of their children's education.

Moreover, the participants in this study and in Green et al.'s (2007) study reported relatively high levels of home-based parent involvement overall. It would be interesting to investigate factors that influence home-based parent involvement for parents who report being less involved. However, while parents who are uninvolved often think of themselves as being actively involved (Lawson, 2003) and are difficult to study simply because of their uninvolvement (Anderson & Minke, 2007), this would require alternative methods of data collection, such as qualitative research, individual case studies, and information from additional sources. Qualitative studies may also be used to investigate questions about, for example, what types of involvement are most helpful for different groups of children.

It may also be useful to ask teachers about parents' school-based involvement, not only for an additional measure of this variable but also given the low alpha reliability of the school-based involvement scale for this study. Further, by asking teachers and even children about parents' actual involvement and their own invitations to parents to become involved, future studies may be able to parse out any effect of answers given based on social desirability.

It would also be beneficial to ask teachers about the nature of their invitations to parents to involvement given Anderson and Minke's (2007) finding that parents may be misinterpreting what teachers think of as invitations as merely information about school activities. Furthermore, asking parents what types of communication from teachers are most effective can help teachers address parents' confusion about teachers' invitations (Anderson & Minke, 2007). Qualitative studies that focus on these issues (and increased collaboration between parents and teachers in general) would benefit students.

Finally, in the past, studies on parent involvement concentrated on the link between involvement and achievement. Now that more solid theories, such as Hoover-Dempsey and Sandler's (1995, 1997, 2005), are more established, it seems a good time to investigate the link between involvement and achievement with a theoretical model in mind. For example, it would be interesting to investigate how these seven independent variables interact with parent involvement practices to affect student achievement. In these studies, asking both parents and teachers about the reasons for involvement or the requests for parents to become involved may help researchers differentiate between parents who are involved because their children are struggling and those who are involved for other reasons. Moreover, conducting such studies in high-achieving schools that serve low-income, at-risk populations, as Ingram and her colleagues (2007) did in the Chicago public schools, may uncover additional information about the role parents play in helping their children overcome difficulties and succeed in school.

Conclusion

This study sought to examine the generalizability of the predictive power of Hoover-Dempsey and Sandler's model of motivations for parent involvement (1995, 1997, 2005) to older elementary, middle, and high school students. In addition, differences among these grade levels

were explored. Overall, this study demonstrated that the model maintained its predictive power for students in 5th through 12th grades. It also confirmed that parents' perceptions of their children's invitations to involvement are among the most important determinants of parents' home- and school-based involvement. In addition, as Hoover-Dempsey and Sandler (1995, 1997, 2005) theorize, parents' role construction remains important in influencing the level of reported home- and school-based involvement. Moreover, teachers' invitations to involvement also play a role in parents' involvement practices, as do parents' perceptions of life context variables.

The steady predictive power of parents' role construction and parents' perceived invitations from their children to involvement found in this study may be related to what some researchers and theorists (Jeynes, 2005; Pomerantz et al., 2007; Walberg, 1984) have observed as an overall home environment of caring, support, and encouragement. It may be, as Pomerantz et al. wrote, that it is the manner in which parents are involved that has the biggest impact on children's success. Parents who both believe it is their role to be involved and respond to the requests they perceive from their children to be involved may have better success motivating their children and helping them succeed in school than parents who are involved for other reasons (such as that researchers think they should be).

This investigation revealed important factors for parents, teachers, and schools in increasing parent involvement, and for researchers in further investigating this important topic. Additional research that is both quantitative and qualitative in nature in addition to longitudinal studies are needed to more thoroughly examine the specific factors that influence parents' motivations and beliefs as well as the variables that potentially moderate parents' involvement in their children's education and in their lives in general.

Appendix A

E-mail to Contacts

As many of you know, I am working on my doctorate in educational psychology. For my dissertation, I am studying the topic of parent involvement in education. My study involves the completion of an anonymous survey for parents of 5th through 12th graders.

The survey takes only 10 minutes to complete and will add to the research literature on this important topic. If you choose to complete the survey, you may enter to win one of two $25 Amazon.com gift cards.

I would be grateful if you would fill out my survey and/or forward this e-mail to parents you know who may be interested. The survey can be found at the following link:

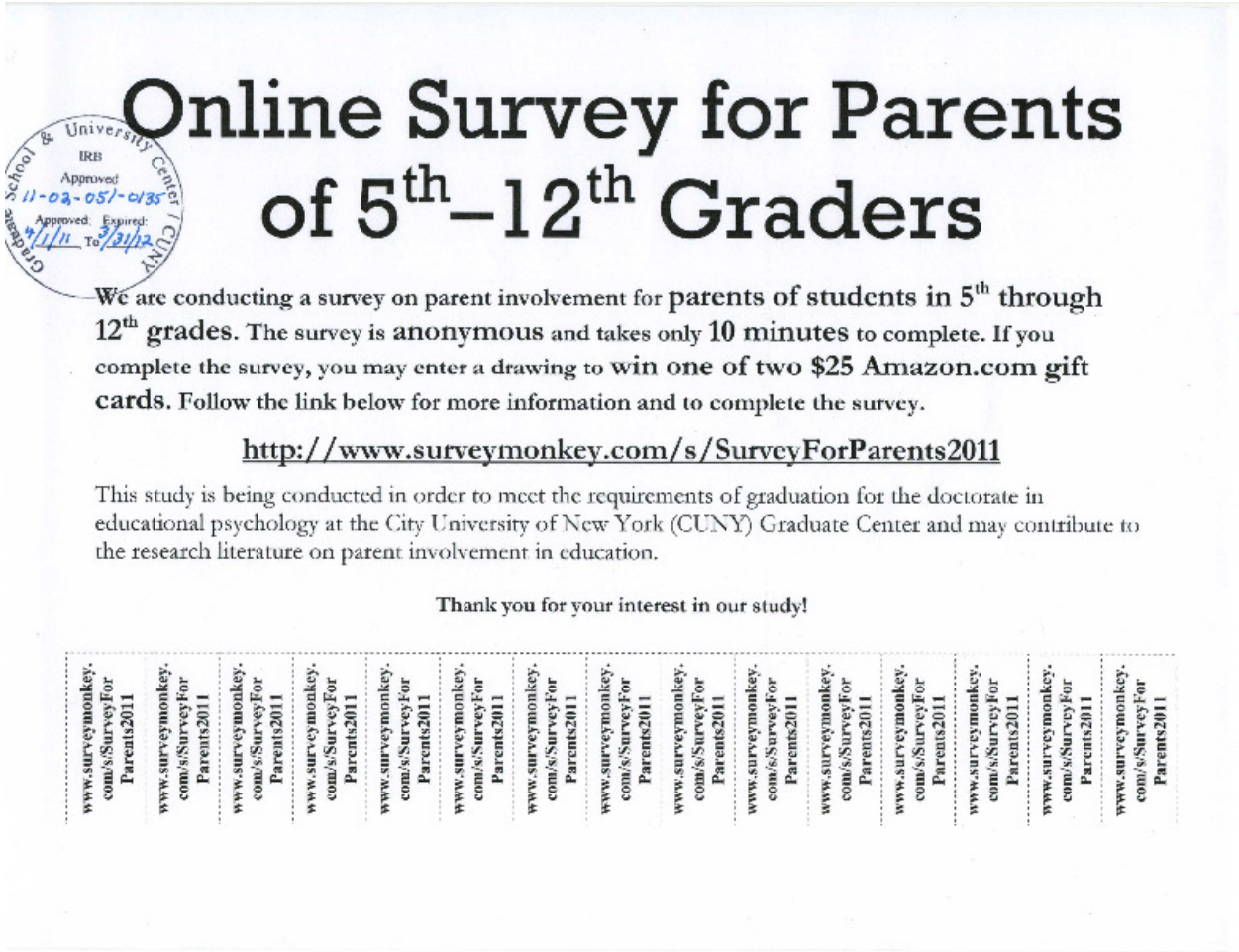
http://www.surveymonkey.com/s/SurveyForParents2011

If you have any questions about this research, you may contact me at djaspen@gc.cuny.edu or (718) 432-1231. You may also contact my advisor, Dr. Georgiana Tryon, at gtryon@gc.cuny.edu or (212) 817-8293. If you have questions about your rights as a participant in this study, you may contact Kay Powell, Institutional Review Board (IRB) Administrator, CUNY Graduate Center, at kpowell@gc.cuny.edu or (212) 817-7525.

Thank you so much.
Deborah Jaspen

Appendix B

Flier



Online Survey for Parents of 5th–12th Graders

We are conducting a survey on parent involvement for **parents of students in 5th through 12th grades.** The survey is **anonymous** and takes only **10 minutes** to complete. If you complete the survey, you may enter a drawing to **win one of two $25 Amazon.com gift cards.** Follow the link below for more information and to complete the survey.

http://www.surveymonkey.com/s/SurveyForParents2011

This study is being conducted in order to meet the requirements of graduation for the doctorate in educational psychology at the City University of New York (CUNY) Graduate Center and may contribute to the research literature on parent involvement in education.

Thank you for your interest in our study!

www.surveymonkey.com/s/SurveyForParents2011

Appendix C

Research Questionnaire

Information about this study

My name is Deborah Jaspen, and I am a graduate student in the Educational Psychology Ph.D. Program at the Graduate Center of the City University of New York (CUNY). I am the Principal Investigator of this project, a research study on the topic of parent involvement in education.

Participation in this study involves completing a questionnaire, which takes about 10 minutes. There are no risks to you in taking part, and you do not have to provide your name or any other identifying information. Taking part is voluntary. You may choose not to complete the questionnaire.

I would like you, as the parent or guardian of one or more students in grades 5 through 12, to fill out this survey about the ways in which you assist your OLDEST 5th-12th grader with academic tasks at home, the ways you are involved with this child's school, and other factors related to your involvement. I expect about 100 parents to complete the survey.

This questionnaire is being used with permission from Kathleen V. Hoover-Dempsey and Howard M. Sandler.

If you would like a copy of the results of this study, please email me your mailing or email address, and I will send you a copy in the future. In addition, if you choose to complete the study, you may enter your email address at the end of the questionnaire to be entered into a drawing to receive one of two $25 Amazon.com gift cards. Email addresses will not be tied to participants' responses after their completion of the questionnaire.

If you have any questions about this research, you may contact me at djaspen@gc.cuny.edu or (718) 432-1231. You may also contact my advisor, Dr. Georgiana Tryon, at gtryon@gc.cuny.edu or (212) 817-8293. If you have questions about your rights as a participant in this study, you may contact Kay Powell, Institutional Review Board (IRB) Administrator, CUNY Graduate Center, at kpowell@gc.cuny.edu or (212) 817-7525. IRB Number 11-02-051-0135.

Thank you very much for your participation in this study!

Deborah Jaspen

Remember to answer these questions about your OLDEST elementary, middle, or high school student.

Grade level of your oldest elementary, middle, or high school student:

◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9 ◯ 10 ◯ 11 ◯ 12 ◯ ungraded middle schooler ◯ ungraded high schooler

This child is considered to be in:

◯ Elementary School ◯ Middle School ◯ High School

In this child's school district, the school levels are as follows:

	Lowest Grade	Highest Grade
Elementary School		
Middle School		
High School		

This child's school BUILDING contains the following grades (please check all that apply):

☐ K ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☐ 12

About how many students attend school in this child's school building? (Please make a guess, even if you are not sure.)

What type of school does this child attend?

◯ charter ◯ public
◯ magnet ◯ religious or parochial
◯ private or independent
◯ Other (please specify)

This child's gender:

◯ Female ◯ Male

Remember to answer these questions about your OLDEST elementary, middle, or high school student.

Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about THE CURRENT SCHOOL YEAR as you consider each statement.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
I know how to help my child do well in school.	◯	◯	◯	◯	◯	◯
I don't know if I'm getting through to my child.	◯	◯	◯	◯	◯	◯
I don't know how to help my child make good grades in school.	◯	◯	◯	◯	◯	◯
I feel successful about my efforts to help my child learn.	◯	◯	◯	◯	◯	◯
I don't know how to help my child learn.	◯	◯	◯	◯	◯	◯

Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

	Never	1 or 2 times this year	4 or 5 times this year	Once a week	A few times a week	Daily
My child's teacher(s) asked me or expected me to help my child with homework.	◯	◯	◯	◯	◯	◯
My child's teacher(s) asked me to talk with my child about the school day.	◯	◯	◯	◯	◯	◯
My child's teacher(s) asked me to attend a special event at school.	◯	◯	◯	◯	◯	◯
My child's teacher(s) asked me to help out at the school.	◯	◯	◯	◯	◯	◯
My child's teacher(s) contacted me (for example, sent a note, phoned, e-mailed).	◯	◯	◯	◯	◯	◯

Remember to answer these questions about your OLDEST elementary, middle, or high school student.

Parents have many different beliefs about their level of responsibility in their children's education. Please respond to the following statements by indicating the degree to which YOU BELIEVE you are responsible for the following.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
I believe it's my responsibility volunteer at my child's school.	◯	◯	◯	◯	◯	◯
I believe it's my responsibility to communicate with my child's teacher(s) regularly.	◯	◯	◯	◯	◯	◯
I believe it's my responsibility to help my child with homework.	◯	◯	◯	◯	◯	◯
I believe it's my responsibility to make sure the school has what it needs.	◯	◯	◯	◯	◯	◯
I believe it's my responsibility to support decisions made by my child's teacher(s).	◯	◯	◯	◯	◯	◯
I believe it's my responsibility to stay on top of things at my child's school.	◯	◯	◯	◯	◯	◯
I believe it's my responsibility to explain tough assignments to my child.	◯	◯	◯	◯	◯	◯
I believe it's my responsibility to talk with other parents from my child's school.	◯	◯	◯	◯	◯	◯
I believe it's my responsibility to make the school better.	◯	◯	◯	◯	◯	◯
I believe it's my responsibility to talk with my child about the school day.	◯	◯	◯	◯	◯	◯

Remember to answer these questions about your OLDEST elementary, middle, or high school student.

Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about THE CURRENT SCHOOL YEAR as you consider each statement.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
I know about special events at my child's school.	○	○	○	○	○	○
I know enough about the subjects of my child's homework to help him or her.	○	○	○	○	○	○
I know how to supervise my child's homework.	○	○	○	○	○	○
I know about volunteering opportunities at my child's school.	○	○	○	○	○	○
I know how to explain things to my child about his or her homework.	○	○	○	○	○	○
I have the skills to help out at my child's school.	○	○	○	○	○	○

Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about THE CURRENT SCHOOL YEAR as you consider each statement.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
I have enough time and energy to help out at my child's school.	○	○	○	○	○	○
I have enough time and energy to communicate effectively with my child's teacher(s).	○	○	○	○	○	○
I have enough time and energy to attend special events at my child's school.	○	○	○	○	○	○
I have enough time and energy to help my child with his or her homework.	○	○	○	○	○	○
I have enough time and energy to supervise my child's homework.	○	○	○	○	○	○

Remember to answer these questions about your OLDEST elementary, middle, or high school student.

Parents and families do many different things when they are involved in their children's education. Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

	Never	1 or 2 times this year	4 or 5 times this year	Once a week	A few times a week	Daily
Someone in this family helped out at my child's school.	◯	◯	◯	◯	◯	◯
Someone in this family attended a special event at my child's school.	◯	◯	◯	◯	◯	◯
Someone in this family volunteered to go on a class field trip.	◯	◯	◯	◯	◯	◯
Someone in this family attended a PTA/Special Education PTA meeting.	◯	◯	◯	◯	◯	◯
Someone in this family went to the school's open house.	◯	◯	◯	◯	◯	◯

Parents and families do many different things when they are involved in their children's education. Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

	Never	1 or 2 times this year	4 or 5 times this year	Once a week	A few times a week	Daily
Someone in this family talked with my child about the school day.	◯	◯	◯	◯	◯	◯
Someone in this family supervised my child's homework.	◯	◯	◯	◯	◯	◯
Someone in this family helped my child study for a test.	◯	◯	◯	◯	◯	◯
Someone in this family worked on English, math, or another subject with my child.	◯	◯	◯	◯	◯	◯

Remember to answer these questions about your OLDEST elementary, middle, or high school student.

Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about THE CURRENT SCHOOL YEAR as you consider each statement.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
Teachers at my child's school are interested and cooperative when they discuss my child.	◯	◯	◯	◯	◯	◯
I feel welcome at my child's school.	◯	◯	◯	◯	◯	◯
Parent activities are scheduled at my child's school so that I can attend.	◯	◯	◯	◯	◯	◯
My child's school lets me know about meetings and special school events.	◯	◯	◯	◯	◯	◯
The school's staff contacts me promptly about any problems involving my child.	◯	◯	◯	◯	◯	◯
The teachers at my child's school keep me informed about my child's progress in school.	◯	◯	◯	◯	◯	◯

Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

	Never	1 or 2 times this year	4 or 5 times this year	Once a week	A few times a week	Daily
My child asked me to explain something about his or her homework.	◯	◯	◯	◯	◯	◯
My child asked me to supervise his or her homework.	◯	◯	◯	◯	◯	◯
My child asked me to attend a special event at his or her school.	◯	◯	◯	◯	◯	◯
My child asked me to help out at his or her school.	◯	◯	◯	◯	◯	◯
My child asked me to talk with his or her teacher(s).	◯	◯	◯	◯	◯	◯

We understand that the following information may be of a sensitive nature. We ask for this information because it helps us describe the range of families in our total group. Please remember that all information is ANONYMOUS. Please check the response for each item that best describes you and your family.

Your gender:

◯ Female ◯ Male

Please enter the city/town, state, and country in which you live.

City/Town:

State:

Country:

The area in which you live can best be described as:

◯ Rural (country) ◯ Suburban (just outside a city) ◯ Urban (city)

Your level of education (please mark highest level completed):

◯ Less than high school
◯ High school or GED
◯ Some college, 2-year college, or vocational
◯ Bachelor's degree
◯ Some graduate work
◯ Master's degree
◯ Doctoral degree

On average, how many hours per week do you work?

◯ 0-5 ◯ 6-20 ◯ 21-40 ◯ 40 or more

Your spouse or partner's level of education (please mark highest level completed):

◯ No spouse or partner
◯ Less than high school
◯ High school or GED
◯ Some college, 2-year college, or vocational
◯ Bachelor's degree
◯ Some graduate work
◯ Master's degree
◯ Doctoral degree

On average, how many hours per week does your spouse or partner work?

- ◯ No spouse or partner
- ◯ 0-5
- ◯ 6-20
- ◯ 21-40
- ◯ 40 or more

Family income per year:

- ◯ Less than $5,000
- ◯ $5,001-$10,000
- ◯ $10,001-$20,000
- ◯ $20,001-$40,000
- ◯ $40,001-$60,000
- ◯ $60,001-$80,000
- ◯ $80,001-$100,000
- ◯ Over $100,000

How many children (under the age of 19) live in your home?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6 or more

Your Race/Ethnicity:

- ◯ American Indian/Alaska Native
- ◯ Asian/Asian-American
- ◯ Asian-Indian
- ◯ Black/African-American
- ◯ Hispanic/Hispanic-American
- ◯ Native Hawaiian/Other Pacific Islander
- ◯ White/Caucasian
- ◯ Biracial/Multiracial (Hispanic)
- ◯ Biracial/Multiracial (non-Hispanic)
- ◯ Other (please specify)

_____

Thank you!

Thank you for completing the survey! If you have any questions, please feel free to contact me at djaspen@gc.cuny.edu.

Please click "Submit" to ensure that your survey responses are recorded.

You will then be taken out of this survey and to a separate web site where, if you wish, you may enter your email address to be entered into the drawing to win one of two $25 Amazon.com gift cards.

Your email address will NOT be tied to your survey responses.

Thank you again for your participation!

If you wish, please enter your email address in the box below and click "Submit" to be entered into the drawing to win one of two $25 Amazon.com gift cards.

Your email address will NOT be tied to your survey responses.

Appendix D

Parents' Role Construction for Involvement Scale

Instructions

Parents have many different beliefs about their level of responsibility in their children's education. Please respond to the following statements by indicating the degree to which you believe you are responsible for the following.

Response format

Disagree very strongly

Disagree

Disagree just a little

Agree just a little

Agree

Agree very strongly

Items

1. I believe it's my responsibility volunteer at my child's school.
2. I believe it's my responsibility to communicate with my child's teacher(s) regularly.
3. I believe it's my responsibility to help my child with homework.
4. I believe it's my responsibility to make sure the school has what it needs.
5. I believe it's my responsibility to support decisions made by my child's teacher(s).
6. I believe it's my responsibility to stay on top of things at my child's school.
7. I believe it's my responsibility to explain tough assignments to my child.
8. I believe it's my responsibility to talk with other parents from my child's school.
9. I believe it's my responsibility to make the school better.
10. I believe it's my responsibility to talk with my child about the school day.

Appendix E

Parents' Self-Efficacy for Helping Their Children Succeed in School Scale

Instructions

Please indicate how much you AGREE or DISAGREE with each of the following statements.

Please think about THE CURRENT SCHOOL YEAR as you consider each statement.

Response Format

Disagree very strongly

Disagree

Disagree just a little

Agree just a little

Agree

Agree very strongly

Items

1. I know how to help my child do well in school.
2. I don't know if I'm getting through to my child.
3. I don't know how to help my child make good grades in school.
4. I feel successful about my efforts to help my child learn.
5. I don't know how to help my child learn.

Appendix F

Parents' Perceptions of General School Invitations to Involvement Scale

Instructions

Please indicate how much you AGREE or DISAGREE with each of the following statements.

Please think about THE CURRENT SCHOOL YEAR as you consider each statement.

Response Format

Disagree very strongly

Disagree

Disagree just a little

Agree just a little

Agree

Agree very strongly

Items

1. Teachers at my child's school are interested and cooperative when they discuss my child.
2. I feel welcome at my child's school.
3. Parent activities are scheduled at my child's school so that I can attend.
4. My child's school lets me know about meetings and special school events.
5. The school's staff contacts me promptly about any problems involving my child.
6. The teachers at my child's school keep me informed about my child's progress in school.

Appendix G

Parents' Perceptions of Specific Teacher Invitations to Involvement Scale

Instructions

Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

Response Format

Never

1 or 2 times this year

4 or 5 times this year

Once a week

A few times a week

Daily

Items

1. My child's teacher(s) asked me or expected me to help my child with homework.
2. My child's teacher(s) asked me to talk with my child about the school day.
3. My child's teacher(s) asked me to attend a special event at school.
4. My child's teacher(s) asked me to help out at the school.
5. My child's teacher(s) contacted me (for example, sent a note, phoned, e-mailed).

Appendix H

Parents' Perceptions of Specific Child Invitations to Involvement Scale

Instructions

Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THE SCHOOL YEAR.

Response Format

Never

1 or 2 times this year

4 or 5 times this year

Once a week

A few times a week

Daily

Items

1. My child asked me to explain something about his or her homework.
2. My child asked me to supervise his or her homework.
3. My child asked me to attend a special event at his or her school.
4. My child asked me to help out at his or her school.
5. My child asked me to talk with his or her teacher(s).

Appendix I

Parents' Perceptions of Personal Skills and Knowledge for Involvement Scale

Instructions

Please indicate how much you AGREE or DISAGREE with each of the following statements.

Please think about the current school year as you consider each statement.

Response format

Disagree very strongly

Disagree

Disagree just a little

Agree just a little

Agree

Agree very strongly

Items

1. I know about special events at my child's school.
2. I know enough about the subjects of my child's homework to help him or her.
3. I know how to supervise my child's homework.
4. I know about volunteering opportunities at my child's school.
5. I know how to explain things to my child about his or her homework.
6. I have the skills to help out at my child's school.

Appendix J

Parents' Perceptions of Personal Time and Energy for Involvement Scale

Instructions

Please indicate how much you AGREE or DISAGREE with each of the following statements.

Please think about the current school year as you consider each statement.

Response format

Disagree very strongly

Disagree

Disagree just a little

Agree just a little

Agree

Agree very strongly

Items

1. I have enough time and energy to help out at my child's school.
2. I have enough time and energy to communicate effectively with my child's teacher(s).
3. I have enough time and energy to attend special events at my child's school.
4. I have enough time and energy to help my child with his or her homework.
5. I have enough time and energy to supervise my child's homework.

Appendix K

Parents' Report of Home-Based Involvement Scale

Instructions

Parents and families do many different things when they are involved in their children's education. Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

Response format

Never

1 or 2 times this year

4 or 5 times this year

Once a week

A few times a week

Daily

Items

1. Someone in this family talked with my child about the school day.
2. Someone in this family supervised my child's homework.
3. Someone in this family helped my child study for a test.
4. Someone in this family worked on English, math, or another subject with my child.

Appendix L

Parents' Report of School-Based Involvement Scale

Instructions

Parents and families do many different things when they are involved in their children's education. Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

Response format

Never

1 or 2 times this year

4 or 5 times this year

Once a week

A few times a week

Daily

Items

1. Someone in this family helped out at my child's school.
2. Someone in this family attended a special event at my child's school.
3. Someone in this family volunteered to go on a class field trip.
4. Someone in this family attended a PTA meeting.
5. Someone in this family went to the school's open house.

Appendix M

Demographic Information Scale (Students)

Instructions

Remember to answer these questions about your OLDEST elementary, middle, or high school student.

Items and Item Choices

1. Grade level of your oldest elementary, middle, or high school student:

- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10
- ☐ 11
- ☐ 12
- ☐ Ungraded middle schooler
- ☐ Ungraded high schooler

2. This child is considered to be in:

- ☐ Elementary school
- ☐ Middle school
- ☐ High school

3. In this child's school district, the school levels are as follows:

	Lowest Grade:	Highest Grade:
Elementary school:	_____	_____
Middle school:	_____	_____
High school:	_____	_____

4. This child's school BUILDING contains the following grades (please check all that apply):

- ☐ K
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10
- ☐ 11
- ☐ 12

5. About how many students attend school in this child's school building? (Please make a guess, even if you are not sure.) _____

6. What type of school does this child attend?

- ☐ Charter
- ☐ Magnet
- ☐ Private or independent
- ☐ Public
- ☐ Religious or parochial
- ☐ Other (please specify): _____

7. This child's gender:

- ☐ Male
- ☐ Female

Appendix N

Demographic Information Scale (Parents)

Instructions

We understand that the following information may be of a sensitive nature. We ask for this information because it helps us describe the range of families in our total group. ALL INFORMATION IS ANONYMOUS. Please check the response for each item that best describes you and your family.

Items and Item Choices

1. Your gender:

   ☐ Female

   ☐ Male

2. Please enter the city/town, state, and country in which you live.

   City/Town: _____

   State: _____

   Country: _____

3. The area in which you live can be best described as:

   ☐ Rural (country)

   ☐ Suburban (just outside a city)

   ☐ Urban (city)

4. Your level of education (please mark highest level completed):

   ☐ Less than high school

   ☐ High school or GED

   ☐ Some college, 2-year college, or vocational

   ☐ Bachelor's degree

   ☐ Some graduate work

   ☐ Master's degree

   ☐ Doctoral degree

5. On average, how many hours per week do you work?

   ☐ 0-5

   ☐ 6-20

   ☐ 21-40

   ☐ 40 or more

6. Your spouse or partner's level of education (please mark highest level completed):

   ☐ No spouse or partner

   ☐ Less than high school

   ☐ High school or GED

   ☐ Some college, 2-year college, or vocational

   ☐ Bachelor's degree

   ☐ Some graduate work

   ☐ Master's degree

   ☐ Doctoral degree

7. On average, how many hours per week does your spouse or partner work?

   ☐ No spouse or partner

   ☐ 0-5

   ☐ 6-20

   ☐ 21-40

   ☐ 40 or more

8. Family income per year:

   ☐ Less than $5,000

   ☐ $5,001-$10,000

   ☐ $10,001-$20,000

   ☐ $20,001-$40,000

   ☐ $40,001-$60,000

☐ $60,001-$80,000

☐ $80,001-$100,000

☐ Over $100,000

9. How many children (under the age of 19) live in your home?

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6 or more

10. Your Race/Ethnicity:

☐ American Indian/Alaska Native

☐ Asian/Asian American

☐ Asian-Indian

☐ Black/African American

☐ Hispanic/Hispanic American

☐ Native Hawaiian/Other Pacific Islander

☐ White/Caucasian

☐ Biracial/Multiracial (Hispanic)

☐ Biracial/Multiracial (non-Hispanic)

☐ Other (please specify): _____

Appendix O

Summary of Multiple Regression Analysis for Variables Predicting Home-Based Involvement with Predictor Variables (n = 191)

Variable	*B(SE(B))*	*t*	*Sig.*
Motivational Beliefs			
1. Role Construction	0.27(0.10)	2.70**	.008
2. Self-Efficacy	0.01(0.08)	–0.16	.877
Invitations to Involvement			
3. General School Invitations	–0.12(0.08)	–1.51	.133
4. Specific Teacher Invitations	0.05(0.10)	0.50	.618
5. Specific Child Invitations	0.65(0.08)	8.10***	.001
Life Context Variables			
6. Skills and Knowledge	0.35(0.09)	3.73***	.001
7. Time and Energy	–0.02(0.09)	–0.24	.813
Race/Ethnicity	0.01(0.15)	0.06	.954
SES	–0.02(0.09)	–0.24	.813
Education	–0.34(0.23)	–1.45	.140
Work Status	–0.20(0.12)	–0.15	.881

$R^2 = .54$. $F(11, 174) = 18.82$***.

** $p < .01$. *** $p < .001$.

Appendix P

Summary of Multiple Regression Analysis for Variables Predicting School-Based Involvement with Predictor Variables (n = 191)

Variable	*B(SE(B))*	*t*	*Sig.*
Motivational Beliefs			
1. Role Construction	0.11(0.05)	2.11*	.036
2. Self-Efficacy	0.06(0.04)	1.45	.148
Invitations to Involvement			
3. General School Invitations	–0.01(0.41)	–0.14	.886
4. Specific Teacher Invitations	0.16(0.05)	3.02**	.003
5. Specific Child Invitations	0.21(0.04)	4.85***	.001
Life Context Variables			
6. Skills and Knowledge	–0.34(0.05)	–0.68	.495
7. Time and Energy	–0.14(0.05)	–3.14**	.002
Race/Ethnicity	–0.07(0.08)	–0.86	.392
SES	0.06(0.12)	0.49	.626
Education	0.04(0.11)	0.33	.740
Work Status	0.10(0.07)	1.46	.145

$R^2 = .41$. $F(11, 174) = 11.14$***.

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

Appendix Q

ANOVA Table of Building Size Differences and Study Variables (N = 207)

Variable	Sum of Squares		*df*	Mean Square	*F*	*Sig.*
Role Construction	Between Groups	22.25	57	0.39	0.72	.922
	Within Groups	80.86	149	0.54		
	Total	103.12	206			
Self-Efficacy	Between Groups	54.10	57	0.95	1.37	.070
	Within Groups	103.57	149	0.70		
	Total	157.67	206			
General School Invitations	Between Groups	52.99	57	0.93	1.71**	.005
	Within Groups	80.80	149	0.54		
	Total	133.79	206			
Specific Teacher Invitations	Between Groups	24.31	57	0.43	1.00	.486
	Within Groups	63.50	149	0.43		
	Total	87.81	206			
Specific Child Invitations	Between Groups	35.93	57	0.63	0.99	.500
	Within Groups	94.59	149	0.64		
	Total	130.52	206			
Skills and Knowledge	Between Groups	39.95	57	0.70	1.16	.236
	Within Groups	89.84	149	0.60		
	Total	129.77	206			
Time and Energy	Between Groups	40.38	57	0.71	1.05	.393
	Within Groups	100.13	149	0.67		
	Total	140.51	206			
Home-Based Involvement	Between Groups	57.07	57	1.00	0.89	.688
	Within Groups	167.59	149	1.13		
	Total	224.65	206			
School-Based Involvement	Between Groups	9.20	57	0.16	0.46	.999
	Within Groups	52.33	148	0.35		
	Total	61.53	206			

** $p < .001$.

Appendix R

ANOVA Table of Grade Differences and Study Variables (N = 207)

Variable	Sum of Squares		*df*	Mean Square	*F*	*Sig.*
Role Construction	Between Groups	2.01	8	0.25	0.50	.861
	Within Groups	101.11	198	0.51		
	Total	103.12	206			
Self-Efficacy	Between Groups	4.68	8	0.59	0.76	.641
	Within Groups	152.99	198	0.77		
	Total	157.67	206			
General School Invitations	Between Groups	6.37	8	0.80	1.24	.279
	Within Groups	127.42	198	0.64		
	Total	133.79	206			
Specific Teacher Invitations	Between Groups	10.63	8	1.33	3.41***	.001
	Within Groups	77.18	198	0.39		
	Total	87.81	206			
Specific Child Invitations	Between Groups	30.78	8	8.85	7.64***	.001
	Within Groups	99.75	198	0.50		
	Total	130.52	206			
Skills and Knowledge	Between Groups	19.84	8	2.48	4.47***	.001
	Within Groups	109.93	198	0.56		
	Total	129.77	206			
Time and Energy	Between Groups	4.93	8	0.62	0.90	.517
	Within Groups	135.58	198	0.69		
	Total	140.51	206			
Home-Based Involvement	Between Groups	54.05	8	6.76	7.84***	.001
	Within Groups	170.59	198	0.86		
	Total	224.65	206			
School-Based Involvement	Between Groups	6.22	8	0.78	2.78**	.006
	Within Groups	55.31	198	0.28		
	Total	61.53	206			

** $p < .01$. *** $p < .001$.

Appendix S

ANOVA Table of Area (Rural Versus Suburban Versus Urban) Differences and Study Variables (N = 207)

Variable	Sum of Squares		*df*	Mean Square	*F*	*Sig.*
Role Construction	Between Groups	1.54	2	0.77	1.56	.212
	Within Groups	98.70	200	0.49		
	Total	100.24	202			
Self-Efficacy	Between Groups	1.37	2	0.69	0.89	.413
	Within Groups	154.66	200	0.77		
	Total	156.03	202			
General School Invitations	Between Groups	2.75	2	1.38	2.12	.122
	Within Groups	129.59	200	0.65		
	Total	132.35	202			
Specific Teacher Invitations	Between Groups	2.23	2	1.14	2.67	.071
	Within Groups	84.81	200	0.42		
	Total	87.09	202			
Specific Child Invitations	Between Groups	6.76	2	3.38	5.53**	.005
	Within Groups	122.13	200	0.61		
	Total	128.13	202			
Skills and Knowledge	Between Groups	.46	2	0.23	0.36	.700
	Within Groups	128.90	200	0.65		
	Total	129.36	202			
Time and Energy	Between Groups	4.70	2	2.35	3.53*	.031
	Within Groups	132.96	200	0.67		
	Total	137.65	202			
Home-Based Involvement	Between Groups	2.66	2	1.33	1.21	.302
	Within Groups	220.37	200	1.10		
	Total	223.03	202			
School-Based Involvement	Between Groups	0.05	2	0.02	0.08	.924
	Within Groups	60.26	200	0.30		
	Total	60.31	206			

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

Appendix T

ANOVA Table of Type of School (Public Versus Non-Public) Differences and Study Variables (N = 207)

Variable	Sum of Squares		*df*	Mean Square	*F*	*Sig.*
Role Construction	Between Groups	0.01	1	0.01	0.01	.916
	Within Groups	103.11	205	0.50		
	Total	103.12	206			
Self-Efficacy	Between Groups	0.15	1	0.15	0.19	.661
	Within Groups	157.52	205	0.77		
	Total	157.67	206			
General School Invitations	Between Groups	2.50	1	2.50	3.90*	.050
	Within Groups	131.29	205	0.64		
	Total	133.79	206			
Specific Teacher Invitations	Between Groups	0.43	1	0.43	1.01	.317
	Within Groups	87.38	205	0.43		
	Total	87.81	206			
Specific Child Invitations	Between Groups	0.05	1	0.05	0.07	.790
	Within Groups	130.48	205	0.64		
	Total	130.52	206			
Skills and Knowledge	Between Groups	2.07	1	2.07	3.33	.070
	Within Groups	127.70	205	0.62		
	Total	129.77	206			
Time and Energy	Between Groups	0.01	1	0.01	0.02	.093
	Within Groups	140.50	205	0.69		
	Total	140.51	206			
Home-Based Involvement	Between Groups	0.21	1	0.21	0.19	.660
	Within Groups	224.44	205	1.10		
	Total	224.65	206			
School-Based Involvement	Between Groups	0.09	1	0.09	0.30	.584
	Within Groups	61.44	205	0.30		
	Total	61.53	206			

* $p < .05$.

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