ABSTRACT

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Parental involvement in children's education is of critical importance in the U.S. educational system. Therefore, it is useful to identify effective predictors of parental involvement. The present study used multi-level analyses to examine how individual and school-level characteristics impact two forms of parental involvement (school-based and home-based parental involvement) in first grade and eighth grade. Several child/parent level characteristics significantly predicted parental involvement. Parent interaction/social capital demonstrated medium to large effects across both forms of parental involvement in both first and eighth grades. Many of the other child/parent level characteristics produced small effect sizes. Across both forms of parental involvement there were few school-level effects that were statistically significant. Those that were statistically significant were very small in magnitude. The results of the present study may serve to inform school practices and research in the field of parental involvement.

INDIVIDUAL AND SCHOOL CHARACTERISTICS AS PREDICTORS OF PARENTAL INVOLVEMENT

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Chapter 1: Introduction

Parental involvement in children's education is of critical importance in the American educational system. There is a well-established link between parental involvement and achievement with findings suggesting that increased parental involvement often is associated with increased achievement (e.g., Epstein & Sheldon, 2006; Fan & Chen, 2001; Galindo & Sheldon, 2012; Georgiou, 1997; Hoover-Dempsey & Sandler, 1995, 1997, 2005; Jeynes, 2005a, 2005b, 2010, 2011, 2012).

While parental involvement has become a well-researched topic, there has been little consistency in how researchers define it. Recently, however, researchers appear to agree on the multidimensionality of parental involvement. Support for this comes from findings that different forms of parental involvement are associated with different outcomes. For example, Fan and Chen (2001) conducted a meta-analysis of 25 studies and found that type of parental involvement moderated the association between parental involvement and academic achievement. Specifically, parent supervision at home was associated weakly with children's academic achievement while parental expectations and aspirations were associated strongly with academic achievement.

Nevertheless, there remains wide variation among multidimensional definitions of parental involvement. Some include only home or school involvement (Comer, 1995; Fantuzzo, Tighe, & Childs, 2000; Green, Walker, Hoover-Dempsey, & Sandler, 2007), while others include expectations and communications (Galindo & Sheldon, 2007; Epstein, 2001) or academic socialization (Hill & Tyson, 2009). Still others describe parental involvement in terms of cognitive, affective, and school-based forms (Grolnick, Benjet, Kurowski, & Apostoleris, 1997; Grolnick & Slowiaczek, 1994). The present

study adopted a multidimensional view of parental involvement which is described in the next chapter.

Given the presumption that parental involvement is critical for the American educational system, it is imperative to determine what we know about the predictors of parental involvement. Several child, parent, and family characteristics have been shown to impact parental involvement. Researchers recently have begun to link school characteristics with parental involvement as well. For example, Anderson and Minke (2007) found that teacher invitations were positively associated with increased parental involvement in parents of elementary school children. Feuerstein (2000) examined which school characteristics influence various forms of parental involvement in eighth grade; he found parents' volunteer efforts were positively associated with teachers' invitations to volunteer. Similarly, contacting parents and inviting them to participate in parent-teacher organizations (PTO) appeared the best way to increase PTO participation.

One of the most well-known frameworks, proposed by Hoover-Dempsey and Sandler (1995, 1997, 2005), describes three sources of motivations for parents becoming involved. The model as currently revised (Walker, Wilkins, Dallaire, Sandler, &Hoover-Dempsey, 2005) suggested that parental involvement at home and school is influenced by parents' motivational beliefs, parents' perceptions of invitations from others, and parents' perceived life context. The model goes on to better define each of the three sources of motivation.

Parents' motivational beliefs refer to both the role parents think they should play in their children's education and parents' level of self-efficacy. In contrast, parents' perceptions of invitations from others address parents' impressions of being asked to be

involved by the school, a teacher, or their child. Finally, parents' perceived life context relates to their level of skill and knowledge and the amount of time and energy they feel they have available to be involved.

A significant amount of research has focused on operationalizing the framework proposed by Walker and colleagues (2005) and collecting data to support it (e.g. Deslandes & Bertrand, 2005; Green et al., 2007; Park & Holloway, 2013). Green et al. (2007) analyzed questionnaires completed by parents of first through sixth grade students in an ethnically diverse metropolitan area. The questionnaires focused on parents' motivations to be involved at home and school in their children's education; the specific motivations of interest originated from the revised model by Walker and colleagues (2005).

The researchers (Green et al., 2007) assessed both individual characteristics, such as work and time constraints for individual parents, and perceived school characteristics such as perceived school environment. It should be noted, however, that the researchers did not examine how schools differed in these characteristics. Instead, they analyzed parents' perceptions of school environment. The findings suggest that perceptions of invitations to involvement, motivational beliefs, and perceived life context, respectively, predicted both home and school-based involvement.

Other research has used alternative frameworks to help determine motivators for parental involvement. Supporting the multidimensional nature of parental involvement, researchers have focused on how home-based and school-based involvement may have different predictors. Waanders, Mendez, and Downer (2007) found parents' level of education, sense of efficacy, and size of social network best predicted home-based

parental involvement. In comparison, parents' social network was the only predictor of school-based parental involvement

Two other emerging lines of research focus on predicting parental involvement in families of different ethnicities or with children of different ages. Researchers have noted differences in the ways that parents from different ethnic backgrounds become involved. For example, Wong and Hughes (2006) examined ethnic differences in parental involvement across four groups of parents, White, Black, Hispanic-English speaking, and Hispanic-Spanish speaking. Parent report indicated that Black parents communicated more often with the school than Hispanic parents. In fact, Hispanic parents, especially those who spoke Spanish, reportedly communicated very little with those in the school.

Other researchers have begun to focus on how predictors of parental involvement differ across ethnicities. Sy, Rowley, and Schulenberg (2007) examined the different predictors of Asian American and White parents' involvement. They found that while parent education had a strong influence on parental involvement for both groups, the associations between forms of parental involvement across contexts differed for Asian Americans and Whites. In general, White parents who were more involved at home tended to be more involved in non-home settings. This was not true for all types of home-based involvement performed by Asian-American parents.

It is well documented that the nature of parental involvement changes as children age. Some past research shows that the amount of parental involvement decreases as children continue through elementary and middle school (Grolnick & Slowiaczek, 1994; Hill & Tyson, 2009; Izzo, Weissberg, Kasprow, & Fendrich, 1999; Seginer, 2006). This supports a developmental perspective that as children enter adolescence, a time for

increased independence, they require and prefer less active parental involvement. Other researchers have found that parental involvement does not necessarily decrease; rather, the *nature* of parental involvement changes as children age. While more forms of parental involvement, such as going to school events and homework help, are positively associated with academic achievement in younger children, they are no longer as effective with middle school students (Hill & Tyson, 2009; Seginer, 2006). Instead, communicating parental expectations for education and its values have a greater positive impact on middle school students' academic achievement than did school-based or home-based parental involvement (Hill & Tyson, 2009).

It is logical to assume that the predictors of parental involvement might evolve alongside the changing nature of parental involvement. Green et al. (2007) examined motivations for parental involvement at home and school in elementary school as compared to middle school and found a few differences. For home-based parental involvement, role activity beliefs predicted parental involvement for elementary school but not middle school parents. For school-based parental involvement, perceptions of time and role activity beliefs impacted parents of middle school students more than the parents of elementary school students.

Most of the pertinent research on predicting parental involvement has addressed only individual characteristics of parental involvement. Only in recent years, and only in a few studies, have researchers begun to include school characteristics as predictors of parental involvement. The following paragraphs briefly describe the gaps in the field when using school characteristics to predict parental involvement (a) across different ages, (b) across different contexts, and (c) using multi-level modeling approaches.

Aside from Green et al. (2007), few studies have addressed predictors of parental involvement and how they vary depending on the age of the child. Moreover, the studies that have addressed this topic seldom have included school characteristics as predictors. Thus past research tends to fall into one of two groups, the first focusing on individual characteristics as predictors of parental involvement across different ages and the second focusing on school characteristics of parental involvement at specific ages, mainly very young children or young adolescents but few of the in between ages. Additionally, there are only a few studies in this second group.

Grossman, Aldoney, and Jackson (2013) studied school characteristics as predictors of parental involvement in kindergarten. Feuerstein (2000) conducted a similar study with parents of eighth grade students. However, little research examines school characteristics as predictors of parental involvement of children between kindergarten and eighth grade. Despite the temporal continuity between kindergarten and first grade, researchers note existing differences in the environment and expectations. For example, in first grade there often is a shift towards increasingly academic-focused demands (e.g., Alexander & Entwisle, 1993). Therefore, the findings by Grossman and colleagues (2013) should not serve as a proxy for parents of first grade students. Additionally, research has documented a decrease in parental involvement by the time children reach middle school. Therefore, helping to increase parental involvement at the earlier grades allows a longer period of time during which children's achievement ideally can benefit from their parents' involvement.

A similar trend appears when it comes to predicting parental involvement in various contexts, such as school and home. Although there is an ever-growing literature

predicting parental involvement across contexts, most of it focuses solely on individual characteristics. For example, Waanders and colleagues (2007) used factors such as parent education and sense of efficacy to predict both home and school-based involvement. Only a handful of these studies included school characteristics (e.g. Green et al., 2007; Feuerstein, 2000; Bartel, 2010). In comparison, the few studies that have included school characteristics tend to focus on one context. For example, Grossman and colleagues (2013) studied school characteristics as predictors only of school-based parental involvement.

While such studies (e.g. Green et al., 2007; Feuerstein, 2000) did tap school characteristics, they did not address the variability between schools. Bartel (2010) studied school characteristics of parental involvement but only included one school in her sample; therefore variability between schools is a moot point. All schools are not identical; in fact, there is wide variation in school characteristics, such as average school SES and average school environment. Thus it is inaccurate to treat all schools as identical entities with identical attributes.

Additionally, many of these past studies have used Ordinary Least Squares (OLS) regression for analyzing data. While this is a reputable form of analysis, multi-level modeling analysis, such as Hierarchical Linear Modeling (HLM), has been shown to be methodologically superior because it accounts for individuals being nested in specific groups (Raudenbush & Bryk, 2002).

It is important to understand how variation across individual characteristics *and* school characteristics impact parental involvement because such information drives future research which ultimately drives interventions. There exists a large literature on

individual characteristics as predictors of parental involvement; however, much less exists on school characteristics as predictors of parental involvement. Still, both topics benefit reform in different ways and thus both topics deserve attention.

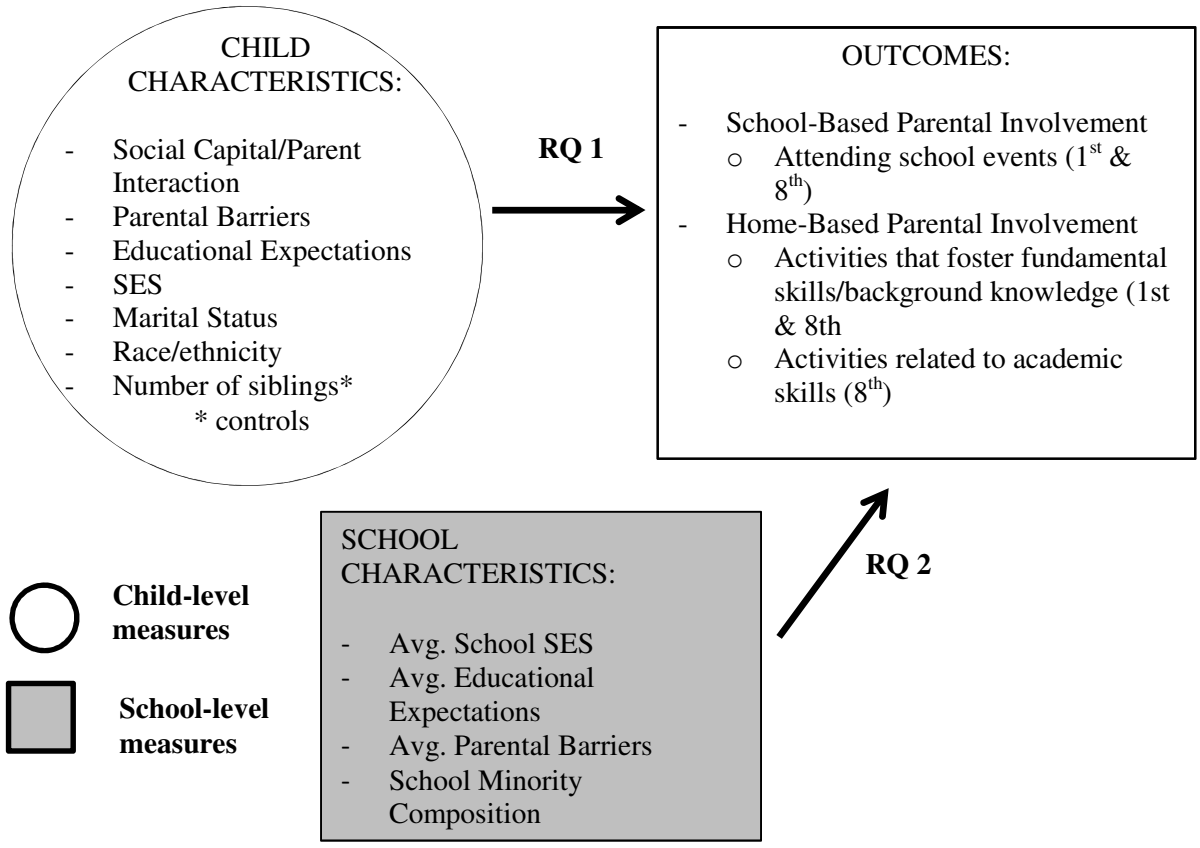
Although it is helpful to understand the impact of individual characteristics, such as SES, ethnicity and family structure, on parental involvement, these are more static variables that are less likely to be influenced by educational policy (Feuerstein, 2000). In contrast, school characteristics, such as average school outreach or average social capital in a school are areas that can be shaped and directly influenced by educational policy, reform, and even school-level interventions. For example, while it would be extremely difficult for a school to implement an intervention targeting the SES of their students, it would be realistic to consider a school-wide intervention targeting an increase in school outreach. These interventions, however, cannot be created until researchers determine what school characteristics predict parental involvement and thus would be a good focus of an intervention. The present study investigates school characteristics with the hope to spur future research in the area which will ultimately help with the creation of such interventions.

Given these gaps in the research, the present study addresses the following research questions (see Figure 1 for the conceptual model):

1. To what extent do individual parental characteristics of SES, expectations, barriers, marital status, social capital, number of siblings and race/ethnicity help to explain parental involvement in 1st and 8th grade across schools?

2. To what extent do school characteristics of barriers, social capital, expectations, SES, and minority composition explain the variability of parental involvement in first and eighth grades across schools?
3. How do the school and individual characteristics that explain the variability of school-based parental involvement and home-based parental involvement in first grade differ from those that explain the variability of school-based parental involvement and home-based parental involvement in eighth grade?

Figure 1. Multilevel conceptual model for predicting parental involvement



Past research cites several individual characteristics as predictors of parental involvement, such as SES (e.g., Arnold, Zelio, Doctoroff, & Ortiz, 2008; Dornbusch & Ritter, 1988). These characteristics vary across schools, counties, and states. Therefore, I expect parental involvement to significantly vary across schools. Additionally, consistent with past research, I expect SES and parental involvement will be statistically and positively related. Thus, increased levels of SES will be associated with higher levels of parental involvement (Arnold et al., 2008; Dornbusch & Ritter, 1988). Other individual characteristics that are expected to significantly relate to parental involvement include parents' social capital, employment, perceived barriers, family structure, race/ethnicity, socioeconomic status, and number of siblings. Past research supports this hypothesis by suggesting higher parental involvement is associated with greater social capital and fewer perceived barriers, many of which often relate to parents' employment (e.g., Archer-Banks and Behar-Horenstein , 2008; Grossman, Aldoney, & Jackson, 2013; Lareau, 1987; Lee, 2005; Ortiz, 2004; Sheldon, 2002). Additionally, parents coming from two-parent households, with higher levels of income, and who identify as white often report higher levels of parental involvement (e.g., Grolnick et al., 1997; Hayes, 2011; Ho Sui-Chu & Willms, 1996; Turney & Kao, 2009).

Finally, I hypothesize that five school level variables will predict parental involvement in first and eighth grades, including average social capital in a school, percent minority students in a school, mean SES in a school, mean number of barriers experienced by parents in a school, and average educational expectations for offspring. Unfortunately, the lack of existing research on the impact of school level characteristics

on parental involvement using multilevel modeling prevents me from postulating specific directional hypotheses for research questions two and three. Instead, exploratory analyses will be performed.

Chapter 2: Literature Review

Family-school interactions have shifted over time with parental involvement steadily increasing. Laureau (1987) and others note the occurrence of three general stages of family-school interaction over the past two centuries. In the first stage, parents were not formally involved in children's schooling and instead provided food and shelter for teachers. The second stage took place after the rise of mass schooling and is marked by parents' involvement in the political and economic dealings of schools. They also helped with informal school and classroom activities. The final stage which includes the present time shows an increase in parents' efforts to promote children's development both at school and at home.

While the trends of parental involvement have changed with time, researchers never have lost interest in understanding the relation between parental involvement and children's academic achievement. Demographic variables, such as race/ethnicity and SES, influence the type and amount of parental involvement (Ho Sui-Cu & Willms, 1996; Hoover-Dempsey, Bassler, & Brissie, 1987; Huntsinger & Jose, 2009; Muller & Kerbow, 1993).

Despite demographic variability, the link between parental involvement and academic achievement remains. For example, Jeynes (2003) performed a meta-analysis examining the effects of parental involvement on minority children's academic achievement. He found that the effects of parental involvement were consistent across all races, with increased parental involvement benefitting students' academics, regardless of how achievement was measured. .

Desimone (1999) also showed that the link between parental involvement and academic achievement is stable across different SES backgrounds. Using data from the National Education Longitudinal Study of 1988 (Ingels, Abraham, Karr, Spencer, & Frankel, 1990), she assessed the relationship between parental involvement and eighth grade mathematics achievement in families of different racial/ethnic and SES backgrounds. The association between parental involvement and achievement, although different across varying populations, remained significant.

Similarly, researchers assert that the association remains across different ages although the effect sizes may be weaker for older children. Jeynes (2007) undertook another meta-analysis to determine the impact of parental involvement on secondary school children. He found that the effect of parental involvement on overall achievement ranged from Hedges g = .46 to .53 of a standard deviation. While these were notably smaller than found with younger populations (Jeynes, 2005b), they still are strong indicators of the continuing link between parental involvement and academic achievement across age.

Definition of Parental involvement

The concept of parental involvement is frequently cited in the literature; however, there is little consensus on the definitions researchers use. Some (e.g., Georgiou, 1997) even have attempted to create a more concrete, unified definition of parental involvement. As previously mentioned, researchers have begun to address the multidimensional nature of parental involvement (Comer, 1995; Fan & Chen, 2001; Fantuzzo et al., 2000; Green et al., 2007). With this development, parental involvement now consistently refers to *at least* two domains, at home and at school. However, even

with researchers using the same terms to define parental involvement, how they are used and what they are used to refer to often differs. For example, two researchers might define parental involvement as having two types, home-based and school-based. Yet, another researcher might limit the home-based definition to actions while the other researcher also might incorporate beliefs and expectations.

Some researchers' definitions of parental involvement are driven by their research interests and questions. LeFevre and Shaw (2012) studied Latino parental involvement and how it is related to school success in children. Their definition of parental involvement was focused on school-based involvement and therefore only included school-based items, such as the frequency to which parents contacted the school, visited the school, and physically participated in school functions.

Other researchers factor the age of the sample into their definition of parental involvement. Parental involvement at home and school changes as children age. While children are young, parents frequently read books to their children or serve as classroom volunteers. These forms of involvement decrease as children age. It is rare to see a parent reading a book to a high school student. Rather, parents of older children might pursue community-based educational opportunities with their children or may make sure to be available to provide homework assistance as needed.

The following two studies demonstrate how definitions of parental involvement may be impacted by the age of the sample. Galindo and Sheldon (2012) examined parental involvement in kindergarten while Deslandes and Bertrand (2005) studied parental involvement in adolescents. Galindo and Sheldon (2012) defined home-based parental involvement as including such things as 'telling stories,' 'singing songs,'

'playing games,' and 'children looking at picture books, reading or pretending to read.' In comparison, Deslandes and Bertrand (2005) defined home-based parental involvement as including such items as 'encouraging the adolescent about school,' or 'helping the adolescent study before a test.' These differences in home-based parental involvement reflect the maturity and developmental needs of the youth in the sample.

Present Study Definition of Parental involvement

The present study adopts a multidimensional view of parental involvement based on ecological theoretical frameworks proposed in recent literature by Comer (1995), Esptein (2001), and Hoover-Dempsey and Sandler (1997, 2005). For the past three decades, Comer's (1995) School Development Program (SDP) has focused on connecting school, home and the larger community. The framework for SDP includes school-based involvement and home-based involvement. The former refers to parent-teacher conferences and volunteering in the school while the latter refers to activities in which parents reinforce learning at home.

Epstein (2001) describes home and school as "overlapping spheres of influence" that both impact children's development and achievement. Furthermore, positive interaction between these spheres impacts academic achievement as well. Epstein addresses six forms of parental involvement, (a) parenting, (b) communicating, (c) volunteering, (d) learning at home, (e) decision-making in the schools, and (f) collaborating with the community.

The present study adopts a two-pronged definition of parental involvement that integrates aspects of all three frameworks. As in the SDP (Comer, 1995), parental involvement includes school-based involvement and home-based involvement. The

forms of parental involvement within each of these categories, however, are greatly based on the work of Comer (1995) and Epstein (2001) as well as Galindo and Sheldon (2012). School-based parental involvement refers to parent activities designed to increase children's knowledge or educationally related skills in school. It is one composite variable including activities related to attending school events (e.g. volunteering, attending PTA/PTO meetings, attending open houses).

As suggested by past research (Galindo & Sheldon, 2012; Hoover-Dempsey & Sandler, 2005), home-based parental involvement refers to interactions that take place between parents and children outside of the school. More specifically, home-based parental involvement refers to parents' activities designed to increase children's knowledge or educationally related skills outside of school. It includes two main types which are separate composite variables. The first is involvement activities directly related to academic skills or topics learned in school, such as helping with homework, and practicing reading or writing. The second form of home-based parental involvement is activities related to fostering background knowledge, such as helping children with arts and crafts or going on a vacation together. Many of these forms of home-based parental involvement are based on Epstein's spheres of influence. The forms of school-based parental involvement are fairly consistent in parents of both first and eighth grade students. However, as previously noted, the forms of home-based parental involvement evolve as children age and mature and thus different home-based parental involvement definitions is used for parents of first grade versus eighth grade students. Additional information about the present definitions of parental involvement is provided later at the end of Chapter 2 and in Chapter 3.

Search Methods

Four electronic databases, Psych INFO, ERIC, Academic Search Premier, and Education Research Complete were searched. Search terms included 'parental involvement,' 'predictors,' 'types of parental involvement,' 'home based parental involvement,' 'school based parental involvement,' 'school characteristics,' 'multilevel modeling,' and 'predictors of parental involvement.' To be included in the present review, articles needed to be peer-reviewed and involve kindergarten age through high school age children, and include predictors of parental involvement (individual level or school level). Articles that discussed race/ethnicity and SES as moderators of parental involvement also were included. Pertinent studies were entered on the ISI Social Sciences Citation Index to find additional relevant studies. The same inclusion criteria were applied to all subsequently found articles. The literature search concluded when no new studies continued to be found.

Research Literature

The following four sections provide a review of 42 studies organized first by predictors of parental involvement based on the age of the child, second by parental involvement as moderated by race/ethnicity, and third by parental involvement as moderated by SES. The review concludes with a section reviewing research that addresses school characteristics as predictors of parental involvement. Several studies fit into more than one of the above categories and therefore may be mentioned in numerous sections. To limit needless repetition, articles that relate to race/ethnicity or SES often are included only in those categories even if they also pertain to age-related predictors of

parental involvement. Appendix A provides information about each research article, including the authors, the definition of parental involvement, and notable findings.

Age Related Predictors of Parental Involvement

Fifteen studies were identified that examined individual level predictors of parental involvement by age of child. Of these studies, nine focused on parents of young children (kindergarten and elementary school) and six studied parents of older children (middle school and high school).

Young children. Two articles (Grolnick et al., 1997; Sheldon, 2002) addressed the importance of social capital in predicting parental involvement. Grolnick and colleagues (1997) focused on three forms of parental involvement including school, cognitive, and personal. Cognitive involvement referred to the degree to which parents engaged in cognitive-intellectual type activities; personal involvement indicated children's perceptions of their parents' interest in their school activities.

Grolnick et al. (1997) asked 209 mothers of third through fifth grade students to provide ratings concerning their family context (social-support, current stressors, family resources), their attitudes on self-efficacy and role-construction, their children's behavior, and family demographics. Social support referred to mothers' satisfaction with having people around who could provide advice on child-rearing, positive feedback, physical assistance with household tasks, and help with child care. Twenty- eight teachers also reported on their attitudes towards the importance of parental involvement and the frequency with which they solicited parental involvement.

The researchers analyzed the data using HLM and found varying predictors for the three forms of parental involvement. Family SES strongly predicted school and

cognitive involvement. Social support did not directly impact the three forms of involvement; however, the association between social support and school involvement was moderated by gender. Specifically, a negative and significant relationship between social support and school involvement existed only for parents of boys ($t\ (1{,}168)2.89,\ p < .01;\ b = .13$) but not for girls ($t\ (1{,}168) = -1.47, ns$). This means that parents of boys and not girls reported more involvement in their children's schooling during times in which they were more satisfied with their levels of social support. In comparison, the levels of social support did not impact parental involvement for parents of girls.

Gender also impacted the association between teacher attitudes about the importance of parental involvement and school involvement such that teacher attitudes were positively associated with school involvement for parents of girls but not boys. In other words, parents of girls and not boys reported higher school involvement when teachers exhibited more positive views towards parental involvement. The researchers suggested that parents may be responding to their own gender stereotypes that girls are needier than their male counterparts even in times of stress.

There were significant effects of SES ($b = .01, p < .001$), parent attitudes ($b = .10, p < .01$), and child negative behavior ($b = -.21, p < .01$) on cognitive involvement. Additionally, two significant interaction effects occurred between teacher attitudes and cognitive involvement. First, family configuration moderated the association indicating that increasingly positive teacher attitudes corresponded to increased involvement by parents from two-parent households but not single parents ($t\ (1{,}168) = 3.44,\ p < .001;\ b = 1.56$). Additionally, in families experiencing more

stress, teacher attitudes had less of an impact on involvement than in families experiencing less stress.

Finally, Grolnick et al. (1997) found limited relationships between parent and child variables and personal involvement. The one significant interaction existed between gender and social support. There was a positive effect of social support for parents of boys ($t\ (1{,}168) = 2.59,\ p < .05;\ b = .15$), but not girls. These results demonstrate the multidimensionality of parental involvement along with how characteristics relate to different forms parental involvement differently. The presence of social support was associated with only two of the three types of involvement and this was only when gender was included as a moderating variable.

Sheldon (2002) further examined how parents' social networks affect the role they play in their children's education. He suggested that Grolnick et al. (1997) may have had difficulty identifying direct effects of social support because their definition was too broad and did not link to children's education. Sheldon (2002) asked 195 parents of first through fifth grade students to list parents of children in their child's school with whom they discussed educational issues. In a second list, parents provided names of other adults who were not in their child's school but with whom they spoke about their child's education.

Sheldon (2002) used OLS regression to analyze the relations between parents' social networks and their levels of involvement at home and school. He first assessed the impact of demographic variables on parental involvement and found White and non-White mothers reported similar levels of parental involvement at home. This suggested that race/ethnicity did not predict home-based involvement. In comparison, parents'

social networks did significantly impact parental involvement at home. Parents who reported conversing with a greater number of "other adults" also reported higher levels of involvement ($\beta = .224, p < .01$).

While race/ethnicity did not predict home-based parental involvement, it did predict school-based parental involvement. White mothers reported significantly greater involvement at school than non-White mothers ($\beta = .207, p < .01$). Additionally, parents' social networks again significantly impacted their level of involvement. However, in contrast to parental involvement at home, parents who reported greater levels of involvement in school reported a greater number of parental contacts from their children's school rather than the "other" group of adults ($\beta = .25, p < .01$). It is possible that having a greater number of school contacts leads to being better informed about school happenings and feeling more comfortable at school functions. This may ultimately result in these parents becoming more involved at their children's school. Either way, Sheldon's findings show the importance of defining social capital and how such definitions may result in different research findings.

The following four studies looked at the impact of family demographics on parental involvement; the first limited the focus to home-based parental involvement while the remaining three focused solely on school-based parental involvement. Suizzo and Stapleton (2007) examined the extent to which maternal education level, family size, family structure, neighborhood safety, maternal depression and parental satisfaction predicted home-based parental involvement. Parental satisfaction measured parents' beliefs about the difficulty in being a parent, the degree to which one felt trapped as a parent, and other similar attitudes.

Suizzo and Stapleton (2007) utilized the Early Childhood Longitudinal Study Kindergarten Class of 1998-1999 (ECLS-K; National Center for Education Statistics, 2002). They analyzed data of 9,864 parents of first-time kindergarteners. Hierarchical regression analyses showed significant associations between family demographics and verbal and non-verbal activities at home. Parents with higher incomes, fewer children, and higher parental satisfaction reported engaging in more verbal activities with their children ($R^2 = .06,\ F(7, 425) = 68.69, p < .001$). Maternal education also significantly predicted parents' reports of verbal activities at home ($R^2 = .09, F(8, 425) = 72.91,\ p < .001$).

Additionally, Suizzo and Stapleton (2007) found that parents who reported having higher satisfaction, living in safer areas, and reporting higher incomes engaged in more nonverbal activities at home with their children (($R^2 = .03,\ F(7, 425) = 18.73, p < .001$). The authors report that the general levels of depression were relatively low in this sample and had parents been experiencing greater levels of distress then this may have been significantly associated with parental involvement.

Arnold et al., (2008) included many of the same variables in their examination of parental involvement as Suizzo and Stapleton (2007). However, they focused on school based parental involvement by parents of younger children. They asked parents of 163 preschool children to report on their own education, income, depressive symptoms and single-parent status. Additionally, 19 teachers completed ratings pertaining to school-based parental involvement.

Arnold et al. (2008) analysed the data with simultaneous multiple regressions. The findings were consistent with hypotheses showing a positive and significant

association between SES and parental involvement (r (161) = .18, $p < .05$). Also, teachers rated single parents as less involved than other parents (t (161) = 4.70, $p < .001$). Contrary to expectations, although similar to findings by Suizzo and Stapleton (2007), depression scores did not significantly relate to parental involvement ratings (r (111)= $-.15$, $p < .12$).

The two remaining studies included slightly older children who were in elementary school. First, Griffith (1998) used results of parent and student surveys to examine relations among school-based parental involvement and several family demographic factors. The researchers recruited 33,244 parents from 122 schools. Parents provided information on SES; ethnicity; grade of their children; number of children in public schools; whether their children were in special education, English as Second Language (ESOL), or Gifted and Talented Programs; educational expectations for their children; and finally their perceptions of the school climate.

Griffith (1998) used hierarchical regressions and found several significant associations between individual characteristics and school-based parental involvement. In the final model, all predictors accounted for 18.20% $F(12,\ 28{,}784) = 534.41$ of the total variation in individual parental involvement. The strongest effect sizes came from race/ethnicity (with coefficients ranging from $\beta = -.18$ to $-.03, p < .001$) and parent's expectations for their children's educational attainment ($\beta = .15, p < .001$) . So, parents with higher expectations who identified as White reported the greatest amount of parental involvement.

The remaining predictors produced significant but small effect sizes (Griffith, 1998). For example, parents who had more than one child enrolled in the school or had

children enrolled in the gifted and talented programs reported greater levels of involvement than their counterparts ($\beta = .09,\ p < .001;\ \beta = .09;\ p < .001,$ respectively). In comparison, being enrolled in ESOL had a negative impact on parental involvement such that parents with children in ESOL were less involved than parents with no children in ESOL ($\beta = -.11, p < .001$). These results demonstrate a differential in parental involvement between groups from varying levels of socioeconomic background.

Herman and Yeh (1983) investigated the associations between school-based parental involvement and SES, frequency of school-parent communication, parents' awareness of school events, parent influence in school decision making, and the nature of the relationship of parent-teacher relationships. They utilized data from an evaluation of California's Early Childhood Education Program. The data came from two second-grade and third-grade classrooms in each of the 256 schools that were randomly selected to participate in the study. The authors did not provide more detail on the sample and its characteristics.

Herman and Yeh (1983) investigated the data using path analyses and discovered limited relationships between factors of interest and parental involvement. Specifically, SES and school-home communication were positively related to parent participation in school ($\beta = .16, p < .01;\ \beta = .16, p < .01$ respectively). The positive association between school-home communication and parental involvement aligns well with findings by Hoover-Dempsey and Sandler (1995, 1997) suggesting that contact with teachers ultimately increases involvement. However, Hoover-Dempsey and colleagues (1995; 1997) focused more directly on parent perceptions of invitations whereas Herman and

Yeh (1983) studied actual documented frequency of communication between teachers and parents.

The next three studies more directly address the Hoover-Dempsey model (Hoover-Dempsey and Sandler 1995, 1997) and the impact that parental beliefs have on parental involvement. Hoover-Dempsey, Bassler, and Brissie (1992) explored parents' self-efficacy in relation to various forms of parental involvement. Specifically, 390 parents of kindergarten through fourth grade students reported on their involvement efforts including volunteering at school, homework help, educational activities, and telephone calls with teachers.

Correlational analyses (Hoover-Dempsey et al., 1992) indicated statistically significant relations between parent efficacy and volunteering, educational activities, and telephone calls with teachers ($r = .15,\ p < .01;\ r = .11, p < .05;\ r = -.14, p < .01,$ respectively). These findings show that as parents feel more confident in their abilities, they also volunteer more at school, partake in a greater number of educational activities with their children, and have fewer telephone conferences with teachers. Perhaps telephone conferences are no longer necessary as teachers and parents are able to converse in person more when parents are more involved in the school.

Further analyses by the authors (Hoover-Dempsey, et al., 1992) showed that parent characteristics linked with reports of involvement. Being female as well as being married corresponded with higher number of hours spent volunteering in the classroom ($F(1, 352) = 8.53, p < .01; F(1,352) = 7.90, p < .01$), Interestingly, parents with lower education reported providing more time helping with homework than reported by those with higher education($F(5, 348) = 3.18, p < .01$). The researchers

found a similar pattern for families of lower income versus higher income ($F(6, 326) = 7.97, p < .01$).

These findings are surprising as they contradict past findings that parents with lower education are less involved with their children's education (Pena, 2000). Perhaps this is due to the fact that only 30% of the intended sample agreed to participate; this may have resulted in biased findings consisting of reports from those who had stronger opinions about these issues. Therefore, it may be that the participants in this study all valued parental involvement, to varying degrees, even after controlling for income or other similar demographics. Therefore income perhaps did not impact the levels of parental involvement reported. Alternatively, it is possible parents' self-reports represent their desires regarding involvement rather than the reality.

The two remaining studies (Anderson & Minke, 2007; Green et al., 2007) examined the utility of a model predicting parental involvement developed by Hoover-Dempsey and Sandler (1995, 1997). Specifically, Anderson and Minke (2007) studied the relationship between four parent variables and parental involvement at home and school. The researchers recruited 203 parents of kindergarten through fifth grade students all of whom attended one of three elementary schools located in a large, urban school district. Parents provided survey responses regarding their sense of efficacy, perceptions of teacher invitations, perceptions of their resources (e.g. energy, financial), and finally demographic type information.

Anderson and Minke (2007) used correlational analyses, chi-square analyses and ultimately created a path model among all the variables. Specific teacher invitations strongly impacted parental involvement and demonstrated a relatively equal relation with

involvement at school (school events: $r = .43$, $p = < .01$; everyday school involvement: $r = .50$, $p < .01$) and home ($r = .44$, $p < .01$). Additionally, specific teacher invitations mediated the association between role construction and parental involvement meaning that increased teacher invitations caused variation in the ways in which parents' role construction impacted involvement.

Consistent with past findings, parents' role construction was significantly associated with involvement at home and school indicating that parents who strongly believed that it was their responsibility to help the school educate their child reported greater levels of involvement at school (school events: $r = .21$, $p = < .01$; everyday school involvement: $r = .19$, $p < .01$) and home ($r = .33$, $p < .01$). However, role construction did not directly impact parental involvement when mediational variables, such as perceived invitations from teachers, were included in the model. Additionally, parents' sense of efficacy directly impacted involvement at home but was not related to involvement at school.

Unexpectedly, the researchers (Anderson & Minke, 2007) noted that parents' resources did not influence involvement and were not associated with parental involvement at home or school. These findings may result from the definition of "resources" being expanded to included financial resources. Perhaps, the definition was too broad and thus it helped to mask findings. The findings by Anderson and Minke (2007) are consistent with those by past researchers (e.g. Deslandes & Bertrand, 2005) illustrating the multidimensionality of parental involvement and the dynamic connections between variables such as role construction and parental involvement.

Similarly, Green and colleagues (Green et al., 2007) also used the Hoover-Dempsey model (Hoover-Dempsey & Sandler, 1995, 1997) as a foundation to predict parental involvement at home and school based on parents' beliefs. In contrast, however, they used a much larger sample size (n = 853 parents) and expanded their focus to include looking at differences across age. Their sample included parents of first through sixth grade students.

Green et al. (2007) asked parents to report on their motivational beliefs (role construction, self-efficacy), perceived invitations for involvement from the school, teacher, and child, their personal skills and knowledge relevant to involvement and their views on their time demands. Subsequently, they conducted multiple hierarchical regressions and found that together parental role activity beliefs, parental self-efficacy, specific child invitations, and parental perceptions of time and energy predicted significant amounts of variance of home-based involvement ($R^2 = .39, F(7, 852) = 78.32, p < .01$). A separate model indicated that parental role activity beliefs, parental self-efficacy, specific child invitations, and parental reports of time and energy accounted for a significant portion of the variance in school-based parental involvement ($R^2 = 48.50, F(7, 852) = 117.09, p < .01$).

Finally, the researchers found that both school and home involvement differed across grade levels. For example, role activity beliefs predicted home-based parental involvement only for children in elementary school but not children in middle school. In comparison, perceived time and energy and role activity beliefs were salient predictors for school-based parental involvement when parents had students in middle school rather than elementary school. These findings demonstrate the need to distinguish predictors of

parental involvement based on the age of the child since they appear to change over time. Interestingly, even with the shift in predictors, at all ages, specific invitations from the child and teacher were predictive of parental involvement.

Older children. One of the articles (Eccles & Harold, 1993) discusses various predictors of parental involvement with adolescents using the authors' proposed model. Eccles and Harold (1993) present a model depicting influences on parental involvement. The model has a broad array of influences, such as contextual and demographic characteristics, and teacher and school-related characteristics. Other noteworthy predictors in their model include parental beliefs regarding their own efficacy, parents' perceptions of their child, and social capital.

The phrase "perceptions of their own efficacy" refer to parents' confidence that they can help their child with their schoolwork; this is a key component of the Hoover-Dempsey and Sandler model (1995, 1997). Parents' perceptions of their child include opinions regarding their child's academic abilities and their aspirations for their child. Finally, the authors discuss how parents' social networks and the social demands on parents may impact involvement.

Two studies examined how parent and family demographic variables among other variables predicted parental involvement. Feuerstein (2000) used data from NELS: 88, a nationally representative sample of eighth grade schools and students; he assessed predictors of nine forms of parental involvement, including students talking with parents, parent contacting school, parents volunteering at school, parents' high expectations, parents participating in PTO, parents talking with students about school, parent visiting

school, structured home environment, and parent being involved in grade placement decisions.

Using OLS regression, Feuerstein (2000) analyzed data from 24,599 of the eighth grade students, their parents, and schools all of whom completed the base-year questionnaires. Child-level contextual variables explained over 10% of the variance in four of the types of parental involvement. First, student grades and SES were important predictors of speaking with parents about school ($R^2 = 16.50\%, F(16,\ 2{,}087{,}993) = 2{,}756.44, p < .001$) such that the higher the grades and SES, the more children spoke with their parents. Second, SES was the only child-level variable that produced large effect sizes in predicting the amount of time that parents volunteered at school ($R^2 = 14.30\%, F(16, 1{,}938{,}585) = 20{,}260.36, p < .001$. Next, higher levels of SES and higher grades positively influenced parent expectations ($R^2 = 28.10\%, F(16, 2{,}080{,}811) = 50{,}774.22,\ p < .001$). Finally, SES strongly influenced parental involvement for grade-placement decisions such that high-SES parents were more involved in these opportunities ($R^2 = 12.50\%, F(16,\ 276{,}677) = 2{,}462.97, p < .001$). These results indicate the importance of demographic variables for predicting parental involvement.

Ho Sui-Chu and Willms (1996) also examined the relationship of parental background with four dimensions of parental involvement, including home discussion, home supervision, school communication, and school participation. Similar to Feuerstein (2000), they analyzed data of 24,599 eighth-grade students and their parents and teachers, drawn from questionnaires given as part of NELS-88. They used HLM and found living in a two-parent household had significant and positive impacts on home supervision and

school participation ($\beta = .29$; $\beta = .28$, respectively). While living in two-parent households also significantly influenced home discussion ($\beta = .07$) and school communication ($\beta = -.08$), albeit it in opposite directions, they produced smaller effect sizes. In other words, home supervision increased by 29% for two-parent households while home discussion increased by only 7%.

Many of the remaining findings also produced significant but small effect sizes. SES had a statistically significant positive relationship with all four forms of parental involvement. However, the effect sizes were relatively small, especially for home supervision (β=.02). The other three forms of involvement had coefficients ranging from $\beta = .16$ to .19. So, the amount of involvement increased a maximum of around 20% for each one standard deviation increase in SES. The researchers found similar associations for number of siblings and the four forms of parental involvement. While number of siblings was significantly and positively associated with home supervision and school participation ($\beta = .03$; $\beta = .01$, respectively) and significantly and negatively related to home discussion and school communication($\beta = -.04$; $\beta = -.02$, respectively), the effect sizes were relatively small.

Finally, the student's gender impacted three of the four forms of parental involvement with school participation being left out. Parental involvement increased by 17% in home discussion for female students. In comparison, school communication decreased by 20% and home supervision decreased by 4% with female students. These findings may reflect differences in parental expectations and behaviors as a result of their gender stereotypes.

Three additional studies focused on parental beliefs and attitudes as predictors of parental involvement. Smock and McCormick (1995) collected data by conducting interviews with 387 parents of children between kindergarten and 12th grade. All students attended school in a large district in Michigan. Parents provided demographic information and information on the frequency and intensity of their involvement at home and school. Using correlational analyses, Smock and McCormick (1995) found few associations between demographic variables and home-based parental involvement, such as helping with homework. For example, although single parent households reported helping with homework less frequently than two-parent households, the difference was not statistically significant. A similar pattern emerged between employed and unemployed parents.

In contrast, Smock and McCormick (1995) found parents' beliefs appeared to influence parental involvement to a greater extent. Parents' perceptions about their child's achievement and beliefs about the school system were significantly associated with involvement. Researchers found a positive relationship between feeling their child was doing well in school and helping him or her with homework (χ^2 (4, N = 315) = 14.20, $p < .05$). Additionally, parents who were most satisfied with the school district reported helping their children more often [$\chi^2(4, N = 315) = 18.00, p < .05$]. In contrast, higher levels of satisfaction with the school was associated with attending fewer meetings at the school [$\chi^2(8, N = 315) = 20.70, p < .01$]. This last finding appears contradictory to the previous one; the researchers suggest that it is possible that parents gain poor perceptions of a child's school from frequent attendance at the school meetings.

The other two studies in this section primarily were interested in evaluating the applicability of the Hoover-Dempsey and Sandler (1995, 1997) model with adolescents. First, Park and Holloway (2013) used data from the Parent and Family Involvement in Education Survey of the 2007 National Household Education Surveys Program (PFI-NHES:2007). The original data set included information about parents of kindergarteners through twelfth grader students. The researchers restricted their sample to students in high school which resulted in a sample of 3,248 parent respondents. Parents rated their perception of school outreach efforts and school satisfaction, responded to questions regarding their feelings of confidence in helping with homework, and their degree of involvement in school, with homework, and pertaining educational expectations/college planning. The researchers also collected information about the family and parent demographics.

Using OLS regression, (Park & Holloway (2013) extracted several significant patterns involving demographics, parental beliefs, perceptions of school outreach, and the three forms of parental involvement. However, the effect sizes were small.

Mothers' education level and level of income significantly predicted all three forms of involvement. However, the directionality differed such that mother's education and income were positively associated with both school-based involvement ($\beta =$ $.13;\ \beta\ .13,$ respectively) and expectations/college planning ($\beta = .26;\ \beta =$ $.13,$ respectively), but were negatively associated with homework involvement ($\beta =$ $-.06;\ \beta = -.10,$ respectively).

Satisfaction with the school was significantly and negatively associated with school-based involvement ($\beta = -.06$) and homework involvement ($\beta = -.08$) but not

expectations and college planning. Perhaps parents did not feel as motivated to be involved when they were comfortable with the education their children were receiving in school.

Perceptions of school outreach also were significantly associated only with those same two forms of parental involvement. Furthermore, for school-based involvement, both school welcoming and informative communication were significantly related although, they had different effect sizes (school welcoming: $\beta = .05$; informative communication: $\beta = .26$). Similarly, homework involvement was related to informative communication ($\beta = .10$) but not school welcoming. These differences between school welcoming and informative communication likely address the age of these high school students. As children age, parents rarely serve as classroom volunteers. Instead, they may attend back-to-school nights and engage in other types of involvement. Therefore, school welcoming might have less of an impact on parental involvement given the nature of their involvement.

Finally, parenting self-efficacy was significantly and positively associated with homework involvement and expectations/college planning ($\beta = .03$; $\beta = .10$, respectively) and parent role construction was significantly and positively related to all three forms of parental involvement with coefficients ranging from $\beta = .06$ to .15. One might expect feelings of self-efficacy to have a greater impact on helping with homework and planning for the future than volunteering in school where the "experts" reside and can make sure things are correct. Similarly, a parents' view of their role in children's education logically might impact all three types of parental involvement and drive the types of activities in which they partake.

Deslandes and Bertrand (2005) also assessed the applicability of the Hoover-Dempsey model with secondary school-age youth. They were interested in the predictive value of four constructs, role construction, parents' self-efficacy, perceptions of teacher invitations, and perceptions of students' invitations for parental involvement. The researchers asked 770 parents of 7th, 8th, and 9th grade students to complete questionnaires with items related to these constructs. They performed separate regression analyses for home-based and school-based involvement. For home-based involvement, parents' perceptions of adolescents' invitations in the academic domain (7th, $\beta = .31$; 8th, $\beta = .26$; 9th, $\beta = .44$) and in the social domain (7th, $\beta = .25$; 8th, $\beta = .35$; 9th, $\beta = .20$) were both significant predictors across all three grades. Parents' beliefs contributed to a much lesser extent and only were significantly related to home involvement in 7th (parents' self-efficacy: impact of parent efforts, $\beta = .15$; impact of parent influence, $\beta = .12$) and 8th grade (parents' self-efficacy: impact of parent efforts, $\beta = .19$).

In terms of parental involvement at school, perceptions of teacher invitations were positively associated with parental involvement across all grades (7th, $\beta = .14$; 8th, $\beta = .31$; 9th, $\beta = .31$). These findings indicate that perceptions of teachers' invitations become a more prominent predictor as children age. Two other noteworthy findings pertain to perceptions of student invitations in the social domain and parents' role construction. The former variable was significantly associated with parental involvement in 7th and 8th grade ($\beta = .15;\ \beta = .29,$ respectively). Parents' role constructions were significantly and positively associated with parental involvement in 7th and 9th grade ($\beta = .31;\ \beta = .36,$ respectively). As the researchers state, their results highlight

the importance of interaction between adolescents and their parents as predictors of involvement across settings. Additionally, these results illuminate the shift in predictors of parental involvement across grades as well as the continual reorganization of which predictors have the biggest impact on parental involvement.

Summary of research on age related predictors. The fifteen studies reviewed above addressed individual predictors of parental involvement for both children in kindergarten through fifth grade as well as children in middle school and high school. Only two studies (Feuerstein, 2000; Green et al., 2007) addressed differences in predictors of parental involvement based on the age of the children. Still, there was little consistency between these studies as well as across all fifteen studies. Therefore, any age-related patterns drawn below must be interpreted with caution because of the key differences in the foundation of these studies.

Demographic variables consistently predicted parental involvement regardless of the age of the child. While some of the significant demographic variables of interest changed depending on the age of the children, socioeconomic status was a constant and was consistently associated with parental involvement across all ages. In samples of younger children, researchers focused on parents' social capital, maternal psychological well-being, as well as the gender of the child. In contrast, with older samples, researchers' interests pertained more to family structure and number of siblings.

While demographic variables often were associated with parental involvement, they did not produce the strongest effect sizes. Instead, the constructs associated with the Hoover-Dempsey model (Hoover-Dempsey & Sandler, 1995, 1997) including parents' role construction, self-efficacy, and perceptions of invitations for involvement yielded

stronger effect sizes in samples of younger and older children. In fact, invitations by children and teachers for involvement consistently provided one of the greater impacts of parental involvement across all relevant studies. Thus, many of the same variables predict parental involvement but the order of importance and greatest impact shifts as children age.

Parental Involvement by Race/Ethnicity

Sixteen studies were identified that examined parental involvement and race/ethnicity. Of these studies, nine focused on differences in forms of involvement, four studied differences in predictors, and three included race/ethnicity as a secondary focus.

Types of parental involvement. Nine studies researched how specific types of parental involvement differ by race/ethnicity. Three of these studies addressed immigrant populations while the remainder studied different races/ethnicities born in the United States. Turney and Kao (2009) compared minority immigrant parents to native-born parents; they focused on group differences in perceived barriers to parental involvement at school. The sample included immigrant and native-born parents who self-identified as White, Black, Hispanic, or Asian. Data came from the ECLS-K and included 12,954 parents of kindergarteners who participated in the study at least through the end of first grade. School-based parental involvement referred to how many school sponsored activities parents attended.

The researchers (Turney & Kao, 2009) utilized OLS regression and found minority groups, immigrant-born and native-born, along with White foreign-born parents reported attending fewer events at school than White native-born parents (coefficients

ranging from $\beta = -.79$ to $-.20$) before controlling for demographic or socioeconomic factors. The exception was Asian native-born parents who were as likely as White native-born parents to attend school events. Black foreign-born parents were least likely to get involved in their child's school compared to native-born White parents ($\beta = -.79, p < .001$) followed by Asian foreign-born ($\beta = -.59,\ p < .001$) and Hispanic foreign-born ($\beta = -.52, p < .001$).

Next, Turney and Kao (2009) included several control variables including parents' perceived barriers to involvement, employment, family structure, and family SES. The inclusion of these variables led to a more distinct pattern between immigrant-born versus native-born parents. Parents of minority background continued to report significantly different levels of parental involvement than White native-born parents with Black native-born parents reporting significantly lower levels of involvement (Black native born: $\beta = -.11, p < .10$) and Hispanic native-born parents reporting significantly higher levels of involvement (Black native-born: $\beta = .11, p < .10$). Other researchers (Ryan, Casas, Kelly-Vance, Ryalls, & Nero, 2010) have found that Hispanic parents often involve family and community members in involvement efforts in their children's schooling which might result in an inflated report of parental involvement. This is because while some parents of various racial/ethnic backgrounds only report their personal involvement in children's education, Latino parents may report involvement completed by themselves along with family and community members. This might explain why native-born Hispanic parents reported higher amounts of school-based involvement than native-born White parents.

Additionally, immigrant parents, especially minority immigrant parents, reported the lowest levels of parental involvement in their children's school (Black foreign − born $\beta = -.38, p < .001$; Asian foreign − born: $\beta = -.36, p < .001$; White foreign − born: $\beta = -.15, p < .10$). Interestingly, Hispanic immigrants were not significantly different than White native-born parents in their reports of school-based parental involvement when including the aforementioned control variables. These results indicate that immigrant status goes beyond race/ethnicity to impact parental involvement.

In another study, Garcia Coll et al. (2002) explored differences in parental involvement across three immigrant groups, Portuguese, Dominican, and Cambodian. The researchers interviewed 334 parents of students in second or fifth grade. The interview protocol included questions about parents' beliefs about their role in children's education, school-based parental involvement, and home-based parental involvement. School-based parental involvement referred to actual contact and participation in their children's school while home-based parental involvement related to the presence of curfews as well as rules about the peers with whom the children could associate.

Multivariate analysis of variance (MANOVA) showed differences in parental beliefs about involvement across race/ethnicity groups. Specifically, Cambodian parents reported significantly lower parental involvement scores in beliefs about parental involvement ($F(2, 328) = 113.58,\ p < .001$) than either the Portuguese or the Dominican group. The authors suggest this difference may be due to variations across subgroups in educational beliefs and practices. For example, past research (Collignon, Men, & Tan, 2001) shows that traditionally teachers in Cambodia were viewed as

absolute authority figures and within the realm of academia, parents provided little input. This provides context for the finding that Cambodians appeared to believe parents need not be as involved in their children's education as did Portuguese or Dominican parents.

Cambodian parents also reported lower amounts of school-based involvement than Portuguese and Dominican parents ($F(2, 328) = 52.26,\ p < .001$). In comparison, Domincan parents reported higher amounts of home-based rules than their counterparts ($F(2, 328) = 80.98,\ p < .001$). The researchers suggest that these patterns may relate to language barriers and to the extent to which groups' values and traditions align with those of the school. For example, the main Cambodian language, Khmer, is more difficult for English learners to adopt than Spanish or Portuguese because it has less in common structurally. Additionally, many schools have Spanish-English bilingual programs suggesting a greater ease in transitioning for those immigrant groups. However, few schools teach Khmer as a language because there is not necessity. This suggests that schools may be less used to interacting with Cambodian parents than Dominican or Portuguese parents.

Huntsinger and Jose (2009) explored parental involvement in immigrant Chinese populations. They compared differences between Whites and immigrant Chinese parents on three forms of parental involvement – communicating, volunteering at school, and learning at home. The researchers collected data from 40 Chinese immigrant parents and 40 White parents when the children were in third or fourth grade. School involvement included contributing materials to the classroom, volunteering or chaperoning, attending events, contacting the teacher and serving on committees. Parents also reported their teaching methods and their satisfaction with the school marking and reporting system.

Repeated measures MANOVA revealed greater levels of school-based parental involvement reported by White parents than Chinese immigrant parents ($F(8, 60) = 5.61,\ p < .001$). White mothers reported higher amounts of involvement within each of the specific eight aspects of school-based involvement in addition to the overall summed score.

Huntsinger & Jose (2009) also conducted qualitative interviews with eight sets of parents across both groups regarding their home-based practices related to facilitating math and reading development in their children. Consistent with past research, Chinese immigrant parents described more direct pedagogical approaches while White parents spoke about more play-based methods. For example, the former group frequently referenced workbooks, tutors, and set schedules to work on math or reading whereas the latter group often cited board games and explicitly made sure activities did not appear too formal. These findings are consistent with others in which Chinese immigrant families are involved in their children's education but report greater involvement at home than at school. Furthermore, these findings depict qualitative differences in how parents from different background become involved.

Two other studies explored parental involvement by race/ethnicity membership; they focused on Black parents. First, Archer-Banks and Behar-Horenstein (2008) conducted a qualitative study with nine Black parents of middle school students. They created two focus groups, both of which met once for around an hour to an hour and a half. Group members discussed why parents should be involved in their children's education and what motivated them specifically to become involved. The researchers

coded viewpoints, events, and interactions mentioned during these group-interviews and identified any recurring themes.

Archer-Banks and Behar-Horenstein (2008) found that parents reported varying levels and types of involvement in their children's education. Some cited active involvement in school events and organizations while others mentioned helping with homework assignments or tutoring. Many parents reported barriers to parental involvement including limited financial resources and factors related to their employment. Regardless of barriers, a common theme emerged describing a feeling in which more Black parents need to become involved in their children's school. It is interesting that in the midst of other studies noting the low levels of parental involvement by Black parents versus white parents, we have this rather small sample of Black parents who understand the importance of parental involvement and encourage other parents to become involved. If this small sample were to be replicated and thus able to be generalized to other Black parents, it might indicate that the problem is not so much with valuing parental involvement but learning how to maneuver around the barriers to parental involvement in order to be able to become involved.

Williams and Sanchez (2012) also conducted a qualitative study assessing perceptions of parental involvement and lack of involvement by Black parents of high school students. The researchers conducted in-depth, semi-structured interviews with 15 parents and 10 staff members at the inner-city public high school where all the students attended. Parents reported on their personal history, their views and definitions of parental involvement, their experiences with home-school interactions, and strengths and weaknesses of home-school communication.

The researchers developed codes for all interviews and analyzed recurring themes. Parents used similar descriptions in response to being asked about commonalities across involved parents. They described involved parents as participating at school, being there outside of school, communicating with school staff, having greater aspirations for children's future, and incorporating community members into their children's lives.

In comparison, parents noted three categories in which uninvolved parents often fell into, including acting unconcerned about their children's education, acting too busy to become involved, or the final grouping of parents who had been involved in the past but had stopped due to negative experiences. The patterns noted above by the study participants are often used in the literature to describe both involved and uninvolved parents and did not appear to differ due to the race/ethnicity of the sample. In fact, the five themes depicting involved parents are very similar to four of the six categories outlined by Epstein (2001).

Four final studies also examined ethnicity and cultural orientation in relation to patterns of parental involvement; the first study focused on parents of preschoolers and the remaining three researched parents of elementary school children. McWayne, Campos, and Owsianik (2008) surveyed 171 urban, Head Start mothers and fathers. The sample included parents from diverse backgrounds such as Latino parents (58%), White (Polish) parents (37%) and parents identified as other backgrounds (5%). Parents provided information on demographic characteristics (e.g. primary language, educational attainment, employment) along with three forms of involvement, including home-based involvement, school-based involvement, and home-school conferencing. Home-based

involvement referred to actions that promote a learning environment at home while school-based involvement referred to activities parents took part in at school such as volunteering in their children's classroom and going on class trips. Parents also conveyed their satisfaction with home-school interactions when volunteering in the classroom, attending parent-teacher conferences, holding telephone conversations, and attending parent workshops.

Regression analyses coupled with multilevel modeling showed (McWayne et al., 2008) a race/ethnicity difference for fathers but not mothers. Specifically, Polish-speaking and Spanish-speaking fathers reported lower levels of school-based involvement than their English-speaking counterparts ($\beta = -.53, p < .001; \beta = -.44, p < .10$, respectively). Additionally, Polish fathers reported less home-school conferencing involvement than their English-speaking counterparts ($\beta = -.53, p < .01$). These findings are consistent with views that the greater number of experienced barriers the less involved parents become (Lee, 2005; Ortiz, 2004); difficulty communicating with school staff easily amounts to a barrier to involvement. It remains puzzling why language barriers resulted in lower levels of involvement for fathers and not mothers in this sample. One possible explanation is that given the common findings (e.g. Grolnick & Ryan, 1989) that mothers frequently report greater levels of involvement in children' education than fathers, perhaps they do not let language barriers deter them as much as fathers. Alternatively, given their greater reported levels of involvement, perhaps mothers already have learned to navigate around any language barriers.

Ryan, Casas, Kelly-Vance, Ryalls, and Nero (2010) gathered data from 74 Latino and 30 non-Latino parents of children in elementary schools. The non-Latino group was

comprised of White parents and other ethnic minorities. In addition to demographic information, each parent discussed their views about how important it was that their children be socially and academically successful and how often they helped their children with homework, attended school events, and communicated with their children's school.

Latino and non-Latino minority parents viewed children's social success significantly more important than did white parents. A similar pattern occurred with academic success. Perhaps these parents view such successes as more important than non-Latino white parents because they have had difficulties in their lives due to factors associated with being a member of a racial/ethnic minority.

Contrary to expectations, home-based and school-based involvement was not significantly different across the three race/ethnicity groups. Additionally, parents reported higher levels of home-based involvement than school-based involvement. While this finding is not surprising for the minority parents, it is for the White parents who often report greater levels of school-involvement than home involvement.

Rodriguez and Lopez (2003) also investigated parental involvement in parents of elementary school students. They sampled 403 Mexican-American parents all of whom had a child attending the same kindergarten through sixth grade school. The researchers asked parents to report whether they helped their children with school work, volunteered at their children's school, attended parent-teacher conferences, helped with fundraising, served as room mother, or attended committee meetings or school events. The most common form of parental involvement (81% of parents) was attending parent-teacher conferences, followed by helping with homework (80% of parents), and helping with school fundraising and attending school events (62% and 43%, respectively). As

compared to other minority groups, this sample of Mexican American parents did not report less involvement in school than at home. In fact, the two most popular forms of parental involvement occurred across both settings.

Wong and Hughes (2006) collected data from 481 parents of ethnically and linguistically diverse first graders; parents self- identified as White, Black, Hispanic-English speaking, or Hispanic-Spanish speaking. The researchers investigated racial/ethnic group differences in parental involvement by asking parents to rate their parent-teacher relationship, their level of school-based involvement, their endorsement of their children's school, the amount of contact had with their children's teacher, their perceived self-efficacy, and their views on their role and the teachers' role in their children's education.

Controlling for parent employment and education, Wong and Hughes (2006) found significant differences in three forms of parental involvement across the different race/ethnicity groups (ratings of parental involvement: $F(12,1320) = 3.11, p < .001,\ \cap^2 = .03$; contact with teachers: $F(3,441) = 4.61, p < .01,\ \cap^2 = .03$; shared responsibility: $F(3,441) = 9.14, p < .001),\ \cap^2 = .06$). White parents reported higher levels of parent-teacher shared responsibility than both Black and Hispanic parents ($\beta = -.53, p < .001; \beta = -.44, p < .10$, respectively). Furthermore, Black parents reported greater levels of communication and parent-teacher shared responsibility than Hispanic parents ($\beta = -.53, p < .001; \beta = -.44, p < .10$, respectively). Finally, English speaking Hispanic parents reported feeling a higher level of parent-teacher shared responsibility than Spanish-speaking Hispanic parents. Wong and Hughes' (2006) results suggest that not only are there between group differences in parental involvement

such that parents of minority backgrounds report lower levels of school-based involvement than white parents, but also there appears to be within group differences such that certain minorities report lower levels of parental involvement than others.

Predictors of parental involvement. Four studies primarily focused on the difference in predictors of parental involvement across race/ethnicities. The first study to be presented focused on involvement by Black parents, the second by Asian American and White parents, and the final two studied involvement by Latino parents. Rowley, Helaire, and Banjeree (2010) asked 73 Black mothers of kindergarteners and first graders to report on their school-based involvement, the time they spent in school-related activities at home, the value they placed on school involvement, the quality of parent-teacher interactions, and past experiences involving racial discrimination by teachers.

Rowley and colleagues (2010) conducted multiple regressions to assess predictors of parental involvement both at home and school for these mothers. Mothers' attitudes about their roles in their children's involvement were the only significant predictor of home-based involvement ($\beta = .43, p < .01$). In other words, the more parents believed they were responsible for their children's education, the more involved they became at home.

In terms of school-based involvement, both income and parent's attitude about involvement positively predicted school-based involvement ($\beta = .06, p < .05; \beta = .40, p < .01$, respectively). However, the difference in effect sizes suggests that parents' beliefs about their role in their children's education has a greater impact on whether they become involved than their income.

Findings also indicated that the quality of parent-teacher interactions impacted the association between past experiences of discrimination by teachers and school-based parental involvement ($\beta = -.32, p < .001$). Parents with more positive teacher interactions and fewer past experiences of perceived discrimination reported higher levels of school-based involvement. Interestingly, high levels of school-based involvement also were reported by parents in the exact opposite situations such that they had low quality teacher interactions and more past experiences of perceived discrimination. Perhaps this second group of parents became more involved as a means of protecting their offspring in what they might perceive to be a negative environment.

Sy, Rowley and Schulenberg (2007) pursued similar research questions but with a different sample; they recruited Asian American families and White families. They examined the predictors of parental involvement across school, home, and community contexts. Five hundred and thirty seven Asian American parents and 12,630 White parents reported on demographic characteristics (e.g. income, education, marital status), psychological characteristics (e.g. expectations for children's educational attainment), home involvement (e.g. reading at home, playing games), frequency in which they attended school events and parent-teacher conferences, and finally non-home educational activities such as taking the child to the zoo or the library.

The two groups of parents were involved in different forms of parental involvement. Asian American parents had higher expectations for their children's educational attainment, had more restrictions on watching television at home and more often reported taking their children to the library ($\text{Mean} = 4.59$ versus $3.94; \text{Mean} = 2.41$ versus $2.19; \text{Mean} = .63$ vs. $.56$, respectively). In contrast, White parents reported

a greater number of instances reading to their children, talking about nature or science, playing games, and volunteering in their children's classrooms (Mean = 3.35 versus 3.24; $\text{Mean} = 2.29$ versus $1.98; \text{Mean} = 2.82$ versus $2.71; \text{Mean} =$ $.56$ versus $.39$, respectively).

Subsequently, Sy et al. (2007) ran structural equation model tests to determine the variation in predictors of parental involvement across the two groups. For Asian American parents, parent education had a significant impact on both home involvement ($\beta = -.32, p < .001$) and non-home involvement factors ($\beta = -.32, p < .001$). Unexpectedly, parental educational expectations did not significantly impact Asian American parents' involvement. However, this may be because of the little variance produced by responses to this question as most of the Asian American parents held high aspirations.

Parents' education also served as a significant predictor of White parents' involvement at home ($\beta = -.32, p < .001$) and at school ($\beta = -.32, p < .001$). Also, White parents' educational expectations did predict some forms of parental involvement at home ($\beta = -.32, p < .001$) and school. While Asian American and White parental involvement were impacted by many of the same predictors, educational expectations for their children was a distinction between the two groups of parents.

The following two studies both studied predictors of parental involvement in Latino populations. Walker, Ice, Hoover-Dempsey, and Sandler (2011) assessed the model by Hoover-Dempsey and Sandler (1995, 1997) as they investigated the process by which Latino parents (N=147) of first through sixth grade students choose to become involved. In addition to reporting about demographic characteristics, parents also

responded to questionnaires about their home- and school-based involvement practices along their beliefs about their role in children's education, perceived self-efficacy and perceptions of invitations for involvement from the school, teacher, and their children.

Walker and colleagues (2011) analyzed the data using hierarchical regressions and found that several of the predictors of interest explained significant amounts of variance in both home ($F(9,146) = 21.06, p < .01;\ adj\ R^2 = .55$) and school involvement ($F(9,146) = 21.06, p < .01), adj\ R^2 = .49$). Specifically, the more parents believed they shared responsibility with the school for their children's education and the higher parents' self-efficacy and the greater number of invitations perceived coming from students all predicted greater amounts of home-based involvement ($\beta = .19, p < .05;\ \beta = .14, p < .10;\ \beta = .40, p < .001$, respectively).

Perceived invitations by students and teachers also predicted school-based parental involvement ($\beta = .64, p < .001;\ \beta = -.25, p < .01$, respectively), although in different ways. Increased invitations from students led to greater school-based involvement while invitations from teachers led to a decline in school-based parental involvement. Additionally, parents' who felt they had enough time and energy to be involved also reported greater levels of school-based involvement ($\beta = .28, p < .001$). In sum, these findings are partially consistent with prior findings assessing this model of parental involvement. One inconsistent finding, however, was the negative impact school outreach had on parental involvement. Perhaps the invitations from schools are being misunderstood by parents.

Finally, Pena (2000) performed a qualitative study of Mexican American school-based parental involvement by interviewing 26 parents of elementary school students.

She also conducted many observations over the year of PTO meetings, parent conferences, the playground committee, and open house meetings. During the interviews, parents responded to questions about their involvement activities, their definitions of parental involvement, and their communication with the school.

Pena (2000) determined several key influences on parental involvement, including parents' language, parents' education, attitudes of the school staff, and cultural influences. Specifically, language appeared to be particularly influential in predicting parental involvement such that school functions often were conducted in English thus serving as a barrier to attendance for parents who did not understand English. Parents' education influenced their involvement in school by impacting their confidence to attend school events. Specifically, parents with limited education often reported feelings of inadequacy and therefore felt uncomfortable attending.

Another finding pertained to school receptivity. As has been commonly found in other studies, parents who felt welcomed by schools also reported greater levels of school-based involvement. Mexican-American parents reported preferring to be involved in the more social aspects of their children's involvement, such as helping to organize school parties. Again, this finding might stem from underlying issues about parents' education and levels of confidence.

In addition to the thirteen studies mentioned above, three other studies already described included race/ethnicity as a secondary focus (Griffith, 1998; Ho Sui-Chu & Willms, 1996; Park & Holloway, 2013). Common differences noted by these studies included parents' self-efficacy and the importance parents placed on parental involvement. Parents from minority groups often reported lower levels of self-efficacy

and viewed parental involvement as less important than White parents. Additionally, these studies showed that parents' education and primary language consistently impacted their levels of involvement.

Summary of research on race/ethnicity. Sixteen studies described above investigated parental involvement across various races/ethnicities; several patterns emerged. In general, parents from minority backgrounds frequently reported being less involved than White parents. Additionally, they often reported valuing involvement less than White parents. Some of these patterns may stem from differences in cultural beliefs as well as past experiences.

Parents from minority backgrounds also reported higher levels of involvement at home than at school. Several potential barriers to parental involvement may help to explain this differential between home and school. For example, parent education and language both predicted parental involvement. Lower levels of education often resulted in lower levels of school-based involvement likely because of an increased sense of discomfort in schools.

Even within minority groups, there appears to be a pattern such that certain groups report greater levels of involvement than others, although all still remain less involved than White parents. Often, Latino parents reported lower levels of involvement than Chinese and Black parents. However, across studies there tended to be inconsistencies regarding levels of parental involvement across minority groups. For example, some studies found Black parents to be less involved than other minority groups while another study proposed that Black parents reported greater amounts of

involvement. Perhaps these differences are due to how researchers defined parental involvement.

Another difference found within groups of minority parents related to their native country. Foreign born minority parents reported less involvement than native born ones. This indicates differences not only between minority groups but also within such groups. For example, Chinese immigrant parents were less involved than Whites in school while Chinese American parents demonstrated some instances of being more involved than their White counterparts.

In addition to studying patterns of parental involvement across various groups of parents from different racial/ethnic backgrounds, these studies also considered variation in predictors of parental involvement. Many of the predictors cited in previous sections also were found to predict parental involvement of parents from diverse backgrounds. For example, the predictors included in the Hoover-Dempsey and Sandler (1995, 1997) model, specifically perceived invitations from students, significantly predicted parental involvement in minority samples. Similarly, another study's findings showed that the predictors of Black parents' involvement aligned well with several of Epstein's categories (Williams & Sanchez, 2012). One difference found among predictors of parental involvement was that parents of minority backgrounds often, but not always, were motivated to become involved if they held higher aspirations for their children both academically and socially. Additionally, parents' jobs and educations were frequent predictors for members of minority groups. These findings relate back to the presence and impact of barriers to parental involvement.

Parental Involvement by SES

Eight studies examined parental involvement as it relates to SES. Of these studies, three focused on differences in types of parental involvement across different SES, three studied differences in predictors of parental involvement, and the remaining two included SES as a secondary focus.

Types of parental involvement. Three studies examined differences in parental involvement between parents of lower and middle SES. The first study (Drummond & Stipek, 2004) focused only on patterns of low-income parents while the remaining two studies (Lareau, 1987; Levine-Rasky, 2009) compared low-income and middle-income parents.

Drummond and Stipek (2004) asked 234 low-income Black, White, and Latino parents to report on their beliefs about whether they should be involved in their children's education. Thus, the researchers focused on parents' value of involvement rather than whether they actually were involved. Parents reported on the importance of four forms of parental involvement, including homework in general, reading, math, and being informed about what their children were learning.

Frequency analyses indicated that almost all parents believed they should help their children with homework (97%). Most of the parents also valued knowing what their children were learning (98%), and helping with the subjects of reading (94%), and mathematics (93%). Interestingly, parents appeared to value the importance of helping children at home more than being involved at school. For example, within the domain of helping children with homework, 56% of parents documented the importance of helping and providing direct support and instruction to their children. In comparison, only five percent of parents reported helping children with homework by utilizing the teachers and

school facilities. Similarly, only eight percent of parents thought they should help their children by communicating and participating with the school such as attending fieldtrips or serving as a volunteer. These results clearly indicate that parents' believe that they should facilitate their children's success in school and choose to do so through home-based methods.

Lareau (1987) found similar patterns in her study assessing parents' beliefs about involvement as well as actual involvement. She conducted a qualitative study in which she observed two first-grade classrooms in two different communities, one a working class-community and the other an upper-middle class suburban community. Lareau (1987) also conducted in-depth interviews with parents, teachers, and principals while the children were in first and second grade.

In general, teachers all valued parental involvement in schooling. However, Laureau (1987) found that the amount of parent-teacher contact varied between the schools with parents at the upper-middle class school reporting more involvement in response to teacher requests than those parents at the working-class school. Additionally, parent reports indicated that both quantity and quality of parent-teacher interactions differed between the two schools. While just about all parents at the upper-middle class school attended parent-teacher conferences, only 60% of parents at the working-class school were in attendance. Furthermore, interactions observed between working-class parents and teachers appeared short, formal, and awkward with the parents often blushing, stuttering, sweating, and looking uncomfortable. Parent-teacher interactions at the upper-middle class school not only occurred more frequently, but appeared much less formal often focusing on children's academic progress with jokes and stories integrated

throughout. In sum, and in support of some of the findings by Drummond and Stipek (2004), lower-class parents interacted with their children's schools less frequently and with less ease. This study underlines the importance in understanding that there can be qualitative information to be had beyond the quantitative data.

Finally, Levine-Rasky (2009) used a qualitative approach to examine differences in parental involvement by parents from two different income brackets. She interviewed 25 parents all of whom had children in the same elementary school; 20 parents had higher incomes. The remaining five parents were immigrant families with lower income. The average household income for higher families ($159,121) was over three times as much as the average household income for lower families ($52,607).

Mothers with higher incomes described their school-based parental involvement as including membership in the parent association, regular volunteering in classrooms, active fundraising, committee work, and coordination of special events. In contrast, mothers with lower incomes reported wanting their children to do well in school but not having a means to help their children achieve such success. Furthermore, they reported not having peers who were involved in their children's school either. Unfortunately, the small sample size keeps one from making conclusions that can be generalized. However, it does appear that lower-income parents were less involved in school-based activities and meetings. In addition, cultural differences associated with immigrant status may account for these results.

Predictors of parental involvement. The following three studies addressed whether the predictors of parental involvement vary by socioeconomic background. The first two studies focused on parents of low SES background and what predictors impacted

their involvement. First, Bartel (2010) conducted 74 semi-structured interviews with parents of children attending a high-poverty, elementary public school including pre-K through sixth grade. She assessed predictors of parental involvement and feelings about the school as well as personal self-efficacy before and after a school-wide initiative to improve family involvement. This school-wide initiative included interventions for the parents to increase involvement.

The post-intervention interviews revealed significant increases in parental involvement. For example, schools witnessed a 19% increase in parent activity in the PTA and an 11% increase in the number of parents reading to their children. Interestingly, Bartel's (2010) findings indicated that predictors of parental involvement for parents of lower SES backgrounds did not differ from those cited in literature as relevant for parents of higher SES. Some of these predictors included school outreach, school receptivity, and minimizing potential barriers to parental involvement; many teachers noted a difference in these predictors following the intervention. For example, teachers reported a 12% increase in efforts to reduce barriers to participation through providing transportation, child care, and flexible schedules. Teachers also noted a 16% increase in the training they received regarding the value and utility of parental involvement and a 20% increase in the time spent in developing a school plan and program for family involvement. As one looks at pre- and post-interviews, a pattern emerges in which parental involvement increased as these school practices promoting parental involvement increased.

Waanders et al., (2007) assessed school-based and home-based parental involvement in 154 predominantly Black parents of preschoolers attending one of two

Head Start programs. The parents reported on perceptions of their neighborhood context, economic stress, self-concept, and sense of efficacy regarding their children's education.

The researchers performed Pearson product moment correlations and individual hierarchical linear regression analyses. A significant regression model accounted for 12% of the variance in parental involvement at home ($F(6, 147) = 2.62, p < .05$). Parents reported greater home-based involvement when they were more educated, reported greater feelings of efficacy regarding their children's education, and perceived larger, more supportive social networks in their neighborhoods ($\beta = .15, p < .10$; $\beta = .15$, $p < .10$; $\beta = .18$, $p < .05$, respectively).

In comparison, Waanders and colleagues (2007) found a set of predictors accounted for nine percent of the variance in school-based parental involvement ($F(6, 147) = 2.00, p < .06$). Similar to home-based involvement, parents with larger social networks reported greater levels of school-based involvement ($\beta = .22$, $p < .01$). These results indicate that contextual factors, such as size and quality of neighborhood social circles, impact parental involvement in poorer families. These findings also support past findings (Coleman, 1988; Grossman, Aldoney, & Jackson, 2013) in which, regardless of social class, parents' social capital impacts parental involvement.

Hayes (2011) compared predictors of parental involvement for parents of low SES versus high SES. He recruited 67 parents from a mainly low-income to working-class minority community and 65 parents from a low-income to middle-class minority community; all parents had children in high school. All parents reported on family

demographic information, their level of involvement at home and school, and their perceptions of their adolescents' school achievement.

Regression analyses indicated that while the overall model for predicting home involvement was not significant, individual variables did have significant effects. For example, parents' educational aspirations for their children impacted home-based parental involvement and produced large effect sizes for parents from lower SES backgrounds ($\beta = .28,\ p \leq .05$) and higher SES backgrounds ($\beta = .36,\ p \leq .01$). Additionally, perceived teacher support impacted parental involvement at home for parents of higher SES background ($\beta = .23,\ p \leq .05$) but not lower SES background.

Hayes (2011) found that parents' educational aspirations again significantly impacted parental involvement at school but only for parents from low SES backgrounds ($\beta = .39,\ p \leq .001; \text{Hayes}, 2011$). Thus, parents of low SES backgrounds with greater educational aspirations reported greater levels of involvement in their children's school. These results suggest that educational aspirations can serve as a protective factor against financial stress. Additionally, parent education, marital status, family income, and perceived teacher support all significantly impacted school-based parental involvement for low-SES families and explained 37% of the variance ($F(6, 60) = 5.76, p < .001; R^2 = .37$).

Interestingly, none of the included variables significantly impacted school-based parental involvement for parents of higher SES background. Given that these variables, such as parent education and marital status, often have been linked with school-based parental involvement it leads one to question whether samples should more frequently be divided into groups based on income. Alternatively, perhaps these findings are a result

of the relatively small sample size within each income group. Another alternative relates to the possibility that there lacked variability in the predictors used for parents of higher SES background.

In addition to the six studies mentioned above, two other studies described elsewhere included SES as a secondary focus (Cooper, 2010; Overstreet, Devine, Bevans, & Efreom, 2005). Common themes across both studies included the negative association between family poverty and school-based parental involvement as well as the positive impact that school receptivity, school outreach, and educational aspirations had on school-based parental involvement.

Summary of research on SES. Eight studies presented above document the variation in parental involvement across different levels of economic background. Researchers consistently found that parents from lower SES backgrounds reported lower levels of school-based involvement than did parents from higher SES backgrounds. Curiously, several studies indicated that many of the same predictors that impact parental involvement for higher SES families also impact parental involvement for families of low SES background. For example, parents' social capital, perceptions of teacher support, and educational aspirations for their children all positively impacted parental involvement, especially at school.

It should be noted that the studies investigating the effects of school outreach on low income parents may have knowingly or unknowingly adapted their efforts to meet the needs of the parents. For example, in Bartel (2010), school outreach included attempting to minimize school barriers such as making sure transportation was available for all parents. Other studies pertaining to school outreach often have limited their

definition to such things as attempting to contact parents via mail or telephone. It seems that success with school outreach is deeply connected with tailoring outreach efforts to meet the needs of the families.

Another similar point pertains to the definition of social capital. Many of the above studies defined social capital as referring to people in one's neighborhood. However, in other studies, social capital often refers to conversing with other parents in the same school. Thus, it is important for researchers to confirm that social capital remains a predictor across varying levels of income when it has the same definition.

School Characteristics as Predictors

The final section presents eight studies that examined school characteristics as predictors of parental involvement. They vary in terms of which school characteristics they studied and their methodology. Several of these studies also examined individual predictors of parental involvement and therefore have been mentioned in previous sections.

Two of the studies (Griffith, 1998; Hoover-Dempsey et al., 1987) investigated the impact of school structural characteristics on parental involvement. Hoover-Dempsey et al. (1987) asked 1,003 teachers and 66 principals of elementary schools to report on school socioeconomic status, teacher degree level, grade level, class size, teachers' sense of efficacy, principal perceptions of teacher efficacy organizational rigidity, and instructional coordination. Using stepwise multiple regression, the authors attempted to determine what impact these school characteristics had on five types of parental involvement that occurred either at home or at school, all reported by teachers.

They found that school SES and teachers' sense of efficacy produced large effect sizes and were significantly related with both forms of school-based involvement, parent/teacher conferences (school SES: $\beta = .38,\ p < .001$; teacher efficacy: $\beta = .36;\ p < .001$) and parent volunteers (school SES: $\beta = .35,\ p < .001$; teacher efficacy: $\beta = .32;\ p < .001$). While these characteristics also impacted home-based parental involvement, a key difference was that school SES now produced a smaller effect size. The two impacted forms of home-based involvement included parent home tutoring (teacher efficacy: $\beta = .34;\ p < .001$) and support from parents (school SES: $\beta = .23,\ p < .05$; teacher efficacy: $\beta = .55;\ p < .001$) . Finally, relevant findings showed the importance of average teacher degree level in predicting increased parent/teacher conferences ($\beta = .31,\ p < .001$).

These results point towards a pattern in which parents might feel some obligation or peer pressure to become involved in their children's school if the mean SES of the school is higher. This may originate from the motivation not to be seen as the only "uninvolved" parent. Additionally, these results suggest that teachers with more advanced degrees as well as more efficacious teachers experience increased levels of parental involvement. Perhaps these teachers act more inviting or are able to better convey to parents the importance of becoming involved.

In the second study, Griffith (1998) reviewed an archival database (N=33,244 parents of elementary school students) and collected information about school structural factors and student population characteristics. He examined the number of students enrolled in the school, the percentage of the school's utilization, mean class size, school student-teacher ratio, and the percentage of students enrolled in Free and Reduced Meals

(FARMS) as well as English as a Second Language (ESOL) programs. Parental involvement referred to attending school events and volunteering.

School-level regression analyses revealed that the socioeconomic composition of the school population and parental perceptions of how well the school informs them of their children's education were both negatively related to parental involvement. In other words, higher percentage of students in FARMS and greater average feelings of parents being informed both led to lower reports of parental involvement ($\beta = -.87,\ p < .001;\ \beta = -.43;\ p < .001,$ respectively). One viable interpretation for this finding is that parents increased their involvement efforts in response to feeling uninformed by schools perhaps as a way of remaining up to date on school happenings. Two additional variables produced smaller effect size including the percent of students new to a school and percent new to the district ($\beta = -.10,\ p < .05;\ \beta = -.17;\ p < .01,$ respectively).

Additionally, Griffith (1998) found the strongest positive correlates of parental involvement were parent perceptions of the schools empowering parents and student-to-teacher ratio ($\beta = .15,\ p < .05;\ \beta = .13;\ p < .10,$ respectively). Although significant, these were relatively small coefficients. As it appears from these findings, the strongest effect sizes emerged from predictors concerning the SES of the student population and how informed parents feel. This is interesting given that at the individual level, characteristics such as SES were found to produce smaller effect sizes than other variables.

Ho Sui-Chu and Willms (1996) also examined the impact of average school SES on parental involvement in their study involving 24,599 eighth-grade students and their parents and teachers. Using HLM, the researchers found that the socioeconomic context

did impact how much parents participated in classrooms and attended PTO meetings. In fact, the amount of school participation increased by approximately 14% of a standard deviation for each one standard deviation increase in average school SES. This indicates that parents were more involved in their children's school when their children attended schools with higher mean SES.

Other studies focused on the school environment and atmosphere as predictors of parental involvement. The following paragraphs cite five such studies, the first of which (Overstreet et al., 2005) studied school receptivity and the remaining four which studied school outreach (Cooper, 2010; Driessen, Smit, & Sleegers, 2005; Feuerstein, 2000; Galindo & Sheldon, 2012).

Overstreet et al. (2005) asked 159 economically disadvantaged, Black parents to report on the level of school receptivity present in their children's schools. These parents had children ranging from elementary school to high school age. Overstreet and colleagues (2005) conducted regression analyses and learned that perceptions of school receptivity explained significant amounts of variance when explaining school involvement ($R^2 = .16;\ \beta = .43,\ p < .001$).

As mentioned, the following four studies focused on the role school outreach plays in predicting parental involvement. The first two studies used either correlation or regression-based analyses while the final two used multilevel modeling. Driessen et al. (2005) used correlational analyses to examine the associations between school composition, school outreach, and parental involvement. The authors selected data from the large-scale Dutch PRIMA (primary education) cohort study; they included

information from parents of eighth grade students as well as representatives of the schools.

As the percentage of minority disadvantage students increased, Driessen and colleagues (2005) witnessed a decline in the participation by parents in visiting open school days with children and a decline in parents helping their children with homework (r = -.16, p = < .001). This may result from common findings that minority parents often are less involved in their children's school than white parents (Turney & Kao, 2009).

Driessen and colleagues (2005) also found that schools' percentages of ethnic minority disadvantaged students were related to school outreach efforts directed toward parents. For example, larger percentages of minority disadvantaged students were strongly associated with schools' attention to improve contact with ethnic-minority parents, schools' success in improving such contact, schools' encouragement of parents to be more connected with schools, and finally, schools' successfully providing information to parents (r = -.03, p = < .01; r = .27, p <.001, r = -.14, p = < .01; r = -.31, p <.001, respectively). Given that many of these school-based strategies declined as the percentage of minority disadvantage students increased suggests that perhaps the ways in which the schools were performing outreach efforts changed as the makeup of the schools changed.

Feuerstein (2000) had similar research questions but used OLS regression as the method of analysis. He examined the association between school outreach, student-teacher ratio, the focus of the school (academics or sports), and various forms of parental involvement including both home and school-based forms. Of all the school characteristics, school outreach produced the strongest effects on predicting parental

involvement. For example, parent contact with the school was positively predicted by the amount of contact from the school regarding behavior ($\beta = .26;\ p < .001$), academics ($\beta = .24;\ p < .001$), general information ($\beta = .19;\ p < .001$), and requests to volunteer ($\beta = .11;\ p < .001$). Contacting parents to volunteer also significantly predicted parent reports of participating in the PTO ($\beta = .27;\ p < .001$) along with the amount they volunteered($\beta = .60;\ p < .001$). Academic orientation was the next most influential predictor of parent contact with the school; however it was negatively associated meaning schools which were most focused on academics received the fewest contacts from parents.

Contacting parents did not predict other forms of parental involvement as strongly as it predicted parents contacting the schools (Feuerstein, 2000). For example, school contact of parents regarding general issues and behavioral issues both weakly predicted PTO participation ($\beta = < .01;\ p < .001;\ \beta = .02;\ p < .001,$ respectively). While contacting parents regarding academic issues produced stronger effect sizes in the prediction of PTO participation ($\beta = .05;\ p < .001$), it was still weaker than those produced in relation to parents contacting the school. Many of the remaining school level variables included by Feuerstein (2000) were significantly associated with various forms of parental involvement; however they produced minimal effect sizes.

Cooper (2010) used the ECLS-K to investigate the impact of school outreach among other school characteristics (e.g., school size, class size, school SES, teacher characteristics, and school location) on school-based parental involvement. The data for this study focused on responses from parents of kindergarteners and the corresponding teachers and administrators.

Cooper (2010) analyzed the data using multilevel modeling and found significant associations between school-based parental involvement and five school characteristics including two forms of outreach to parents, school SES, class size and school size. Interestingly, teacher characteristics were not associated with parental involvement as was the case in the study by Hoover-Dempsey and colleagues (1987). Instead, greater levels of school-based parental involvement were reported by parents whose children attended smaller schools with larger class sizes. Additionally, these were the schools performing a greater number of outreach efforts both before the children entered kindergarten and during the school year ($\beta = -.07,\ p < .01;\ \beta = .01;\ p < .05;\ \beta = .06;\ p < .01;\ \beta = .42;\ p < .001$). As shown by these results, only school outreach during the school year produced a large effect size.

In contrast to past findings (e.g. Ho Sui-Chu & Willms, 1996), Cooper (2010) found increased reports of school-based parental involvement occurred in schools with lower mean SES levels ($B= .35,\ p < .001$). While school SES had an unexpected impact on parental involvement, individual reports of SES performed as expected with low income parents reporting lower levels of school involvement before accounting for any other variables ($\beta = -1.32;\ p < .001$). Also, school outreach efforts during the school year moderated the association between low income levels and reports of school-based parental involvement. So, low-income parents whose children attended schools with a high number of outreach efforts reported higher levels of parental involvement than reported by low income parents in schools with a low number of outreach efforts. This indicates that school outreach may help alleviate some of the limitations resulting from being of low SES.

Galindo and Sheldon (2012) also investigated the impact of school outreach efforts on parental involvement. However, unlike Cooper (2010), these researchers addressed two forms of parental involvement, school-based and home-based. Using ECLS-K data, the researchers analyzed information pertaining to school outreach efforts, type of school, race composition within a school, and parent education composition within a school. Then, they used HLM to assess what impact these school characteristics had on home and school-based parental involvement.

While several of the variables of interest were significantly associated with parental involvement most produced small effect sizes. For example, each additional outreach effort displayed by schools was associated with a .02 standard deviation increase in school-based parental involvement. Similarly, parents reported greater levels of school-based involvement when their children attended schools with higher mean parent educational attainment ($\beta = .03;\ p < .01$).

Additionally, Galindo and Sheldon (2012) found no significant association between school outreach efforts and home-based parental involvement. This supports others findings that school outreach impacts school-based involvement (Cooper, 2010) and can be interpreted as parents responding to increased contact from the school as the school wanting them to be more involved specifically in the school domain and unrelated to other domains of parental involvement.

Summary of research on school characteristics. Only a handful of studies have addressed school characteristics as predictors of parental involvement. The prior section presented eight studies that focused on the associations between various school characteristics and forms of parental involvement. Researchers consistently found that

school SES predicted parental involvement. However, the directionality of the association between school SES and parental involvement varied depending on the specific study. Four studies directly focused on the impact of school outreach and again consistently found increased efforts by the school to increase involvement of parents. Other relevant school characteristics in the above studies included teacher educational attainment, teacher efficacy, and school receptivity. However, these variables were included only in a small portion of the eight studies. None of the studies addressed variables pertaining to parents' social capital, perceived barriers, or educational expectations.

Among the eight studies presented above, the researchers used a diverse set of analyses ranging from correlations to HLM, with the majority using OLS regression. Researchers have asserted the superiority of multilevel modeling (Raudenbush & Bryk, 2002). However, only two of the above eight studies used such methods. Additionally, neither of these two studies addressed the variation in school characteristics as predictors of parental involvement depending of the age of the children.

The Present Study

The present study extended current research on predictors of parental involvement in three ways. First, the present study researched predictors of school-based involvement across ages. Past studies often have included varying ranges of students but few have examined how predictors of parental involvement changes depending on the age of the child. Second, the present study included several school-level variables that have yet to be addressed by other researchers, such as average educational expectations for children and average amount of parent interaction/social capital in a school. Finally, the present

study analyzed all three research questions using HLM, which is the recommended methodology given that children embedded within schools.

Definition of terms. The following section describes key constructs from the present study that have been used differently across research and thus require additional information about how they are interpreted in the present study.

Parental involvement. As previously described, school-based parental involvement refers to parent activities designed to increase children's knowledge or educationally related skills *in* school and includes activities related to attending school events. Home-based parental involvement refers to interactions that take place between parents and children *outside of the school* and lead to increasing children's knowledge or educationally related skills outside of school. The two forms of home-based involvement that were included in the present study were involvement activities directly related to academic skills or topics learned in school (e.g., helping with homework) and activities related to fostering background knowledge (e.g., helping children with arts and crafts).

Parent interaction/social capital. Coleman (1988) and Bordieu (1985) are credited with helping to popularize today's notion of "social capital." Bordieu first claimed that individuals accrue various benefits from group membership. Furthermore, he believed that actions involving social capital often are characterized by some form of obligation or social expectation. Coleman pursued this line of research and further defined social capital as changes in relations among people that result in action. He defined three forms of social capital as obligations, expectations, and trustworthiness.

Portes (1998) analyzed the origins and definitions of social capital paying special attention to the writings by both Coleman and Bordieu. Portes ultimately concluded that

while various authors have differed in the specifics of how they define social capital, a general consensus does exist in which people believe social capital refers to the benefits individuals can reap by being part of specific social networks. Implicit in this is the view that those with larger social networks may have more potential rewards to reap.

The present study adopts the above view that social capital is possible only when individuals are members of social networks. Additionally, the present study focuses on social capital stemming from a single type of social network – that which includes parents whose children are in the same class as the rater's child. The present researcher believes regular contact with other parents serves as a proxy for social capital because it leads to the potential for larger social networks and ultimately more social capital.

While the present study focuses on the effect of social capital, there is no inclusion of cultural capital. These are two distinct forms of capital that have different effects on parental involvement at home and in school. Bordieau (1977) described cultural capital as parent's cultural experiences at home that translate to the school setting and help assist children's school adjustment and achievement. For example, often children coming from higher SES backgrounds also have the language and authority patterns that align with those presented in the schools. Thus, these parents have greater amounts of cultural capital with which they equip their children.

Barriers to parental involvement. Different lines of research have focused on different barriers parents experience that impact their involvement in children's schooling. Some have looked at parent barriers as a whole (Horny & Lafaele, 2011), while others have broken them up thematically. For example, Maiers (2001) defined barriers stemming from psychological attributes as different from those that are physical.

Psychological barriers could refer to apprehension, fear, and parent experiences of alienation while physical barriers might include lack of child care, time, and distance. The present study aligns more with the latter approach in attempting to clump similar barriers together, including inconvenient meeting times, no child care, unable to leave work, safety concerns and transportation concerns getting to the school, not feeling welcome by the school and not hearing interesting things to attend..

Educational expectations. Past research has been fairly consistent when it comes to what educational expectations refer. In the present study, educational expectations were defined as how far parents expect their children to go in school. Several options were included ranging from graduating high school to receiving an advanced degree.

SES. While SES is a common construct studied by many, it can be conceptualized differently. In the present study, SES reflected family income, parents' education, and parents' occupation. Family SES was described using a continuous measure that was standardized to ease interpretation across families.

Parent-identified race/ethnicity. The present study classified children's race/ethnicity. Parents reported on whether their child is White non-Latino, Black non-Latino, Latino of any race, Asian, and Other. Other race included native Hawaiian, Other Pacific Islander, American Indian, Alaska native, and more than one race. These were the exact labels provided on the parent survey. In the present study, the specific category names were changed to African American, Asian-American, Hispanic, White, Indigenous, and Multi-racial.

Family structure/marital status. This variable measured mothers' current marital status. Specifically, it referred to whether mothers are married or single. The single category includes those who reported being separated, divorced, widowed, and never married.

Number of siblings. This variable is defined as the number of siblings a child has that are currently residing in his or her household.

Chapter 3: Method

Data and Sample

ECLS-K. The present study used data from the Early Childhood Longitudinal Study (ECLS-K) Kindergarten Class of 1998–1999, conducted by the National Center of Education Statistics. ECLS-K focused on young children's cognitive and non-cognitive growth and collected information from students, parents, teachers, and administrators. Using a multistage probability sampling design, ECLS-K included a nationally representative sample of about 21,000 children entering kindergarten in over 1000 schools. Specifically, the data are representative of the U.S. population at the time of collection with respect to geographic region, race/ethnicity, and maternal education. The NCES employed a multistage probability sample design for the purpose of selecting a nationally representative sample. As part of the probability sample design, they had three sampling units. The primary unit was geographic areas followed by the secondary unit of schools within the sampled primary unit. Finally, the students within the specific school were the third unit of sampling. The investigators oversampled certain populations, such as Asian and Pacific Islanders, to ensure a nationally representative response rate. For more details of the ECLS-K study, including the sampling frame and data structure, see National Center for Education Statistics (2001) or Tourangeau, Nord, Lê, Sorongon, and Najarian (2009).

Data collection. The National Center for Educational Statistics (NCES) of the U.S. Department of Education launched the ECLS-K to measure children's early school experiences as well as experiences throughout primary and secondary school. Participants were recruited from public and private schools and from both full-day and

part-day kindergarten programs. Additionally, NCES collected data across seven waves (1998-2007) including the fall and spring of kindergarten, the fall and spring of first grade, and the spring of third, fifth, and eighth grades. The present study used data collected during wave 4 (spring of first grade) and wave 7 (spring of eighth grade).

During each wave, researchers gathered information on children's cognitive, social, emotional and physical development from children and their parents, teachers and schools. Participants also reported information on family demographics along with school characteristics. Finally, researchers used multiple methods for data collection including one-on-one assessments, computer-assisted telephone interviews, and self-administered paper and pencil questionnaires.

Analytic sample. The present study performed analyses on a subsample of children from the ECLS-K data set – namely, only children who participated in the study in both the spring of first grade and the spring of eighth grade (wave 4 and wave 7; N=7764). Table 1 shows the percent of children eliminated from the sample due to this inclusion criterion. In order to be included in the subsample, each school needed to contain at least two students (also shown in Table 1). I ensured there were no significant differences between missing data and existing data by examining the descriptive statistics between the two groups. Data for this study came from 7,764 parents of children attending 917 schools in 1st grade and 976 schools in 8th grade. Around a third of the schools were located in either large or mid-size cities (35.3% in 1st grade, 32.4 % in 8th grade). A little over a third of the schools were located in large and mid-size suburbs or large towns (38.2% in 1st grade and 35.9% in 8th grade). Finally, less than a third of the schools were located in small and rural towns (25.7% in 1st grade and 26.7 in 8th grade).

Given the low amount of missing data, no method of imputation was used. No variable had more than five percent missing. However, because Hierarchical Linear Modeling requires complete data on all variables in analysis and I eliminated all schools with fewer than two students, the total number of missing cases was 6.97% in 1st grade and 20.56% in 8th grade. Experts disagree about the percentage of missing data that requires imputation with cut-offs ranging from 5 – 20 % (Schlomer, Bauman, & Card, 2010).

Table 1. Percent of Children and Schools Eliminated from Analytic Sample with Each Inclusion Criterion

Child/Parent Level (1st grade)		
Criterion	*N*	Total % Lost
Children/parents present in waves 4 & 7	7,764	---
Children/parents attending schools with ≥ 2 students	7,456	3.97
Children/parents with no missing data on any variable	7,223	6.97
Child/Parent Level (8th grade)		
Criterion	*N*	Total % Lost
Children/parents present in waves 4 & 7	7764	---
Children/parents attending schools with ≥ 2 students	6412	17.41
Children/parents with no missing data on any variable	6168	20.56
School Level (1st grade)		
Criterion	*N*	Total % Lost
Schools in Wave 4 with ≥ 2 students	917	---
Schools with no missing data	897	2.18
School Level (8th grade)		
Criterion	*N*	Total % Lost
Schools in Wave 7 with ≥ 2 students	976	---
Schools with no missing data	958	1.84

Measures

All variables included in the present study are supported by past research and theory. Additionally, factor analyses were performed on all composites created in the present study to provide analytical support in addition to the existing conceptual support

(See Appendix D). Also, Appendix C provides additional detail about the reliability of each composite variable included in the present study as well as the impact on the alpha after deleting specific items.

Outcome variables. The present study included five outcome variables all of which are be indices. Two of the outcomes pertain to first grade parental involvement and three to eighth grade parental involvement. Within each grade, one outcome represented school-based parental involvement and either one or two represented forms of home-based parental involvement. While the definition for school-based parental involvement remains the same for parents of first and eighth students, the definitions for home-based parental involvement differ. Four of the indices met the criteria of $\alpha \geq .60$, while the remaining index was within four-tenths of meeting the .60 criteria. These findings are consistent with past research using the ECLS-K that has attempted to develop indices for parental involvement (e.g. Schulting, Malone, & Dodge, 2007). Appendix B provides information about all composite variables, including the outcome variables.

School-based parental involvement. This category referred to parents' activities designed to increase children's knowledge or educationally related skills in school. It included items related to attending school events.

Attending school events. This variable was identical for first grade and eighth grade. It consisted of 6 items (0 = no and 1 = yes) assessing parent participation in school-related activities. Specifically, parents responded to having attended an open house or back-to-school night; having attended school events; having gone to meetings of PTA, PTO, or parent–teacher–student organization; having participated in fundraising; or

having acted as a volunteer at school events, and having attended regularly-scheduled parent-teacher conferences. To create the index, I summed together all six items. Internal consistency was .61 and .64 (first and eighth grade, respectively).

Home-based parental involvement. This category referred to parents' activities designed to increase children's knowledge or educationally related skills outside of school. The two specific types of home-based parental involvement included parental involvement in activities directly related to academic skills or topics learned in school and parental involvement in activities related to fostering background knowledge.

Activities directly related to academic skills or topics learned in school. This composite was only included in the eighth grade data. It represented the frequency with which parents and children partook in activities directly related to academic skills or topics learned in school. It included four items, all of which also were standardized to be on the same scale. The four items included parents' responses about how often they checked that their children had completed homework; talked with their children about what they are doing at school; talked with their children about their day at school; and talked with their children about their grades. Internal consistency was .67.

Activities fostering general background knowledge. This composite included different items for first grade and eighth grade data. However, both composites represented the frequency with which parents and children partook in activities related to fostering background knowledge. Also, both composites were standardized to be on the same metric. For first grade data, the scale included eight items about how often they read to their children, practiced numbers with their children, told their children stories, sang songs with their children, played games with their children, talked to their children

about nature, built things with their children, and helped their children do art. Internal consistency was .70.

The eighth grade composite included four items. These items related to how often parents attended concerts, plays, or movies with their children; took day trips or vacations with their children; worked on a hobby or played a sport together; or the frequency in which they went to restaurants with their children. Internal consistency was .56.

Child/parent level predictor variables. All predictor variables at the child/parent level were identical for parents of first and eighth grade students.

Social capital/parent interaction. This variable was based on the question "About how many parents of children in {CHILD}'s {or {TWIN}'s} class do you talk with regularly, either in person or on the phone?" included in the spring parent questionnaire for first and eighth grade students. This variable was transformed into two dummy-coded variables allowing me to compare the effects of parents who reported interacting with no other parents, one to four other parents, or more than four other parents. The "no interaction" group was the reference group.

Barriers to parental involvement. This composite variable measured barriers to parental involvement collected during spring of first and eighth grades. It consisted of eight items with ratings of range from experiencing no barriers to experiencing all barriers (0 = experiencing no barriers, 8 = experiencing all 8 barriers). Included in this composite were parents' responses to questions regarding reasons that made it harder for them to participate in school-based and home-based forms of involvement. While many of the specific items were geared towards school-based parental involvement, it is

possible that some of these barriers also impact home-based parental involvement. The eight items included in this composite were inconvenient meeting times; no child care; problems with safety going to school; inability to get time off from work; the school does not make parents feel welcome; language barriers; problems with transportation; and finally not hearing about interesting things going on at school. Internal consistency was .46 and .50 (first and eighth grade, respectively).

After viewing the distributions and considering the low internal consistency, I transformed the composite into a set of dummy-coded variables. The new categories included parents who experienced one to two barriers to parental involvement, more than two barriers to parental involvement, or those who reported experiencing no barriers to parental involvement. This last category was considered the reference group.

Educational expectations. This variable is based on the question presented to parents asking them how far they expected their children to go in school. Possible answers included graduating high school, attending two or more years of college, completing college and receiving a college degree, earning a master's degree, or finishing a doctorate, medical degree or some other form of advanced degree. This variable was treated as a continuous variable and remained in the natural metric which was the educational degree expected for one's child. The distribution was near normal across both grades.

SES. The SES composite reflects the SES of the household at the time of data collection for spring of first grade and spring of eighth grade. The variables included to create the SES composite were: income, parent's education and parents' occupation. The SES composite was a continuous variable that was standardized to ease interpretation.

Race/ethnicity. Information on children's race/ethnicity was taken from the parent questionnaire at wave four and seven (spring of first and eighth grades, respectively). It included the following categories, White non-Latino, Black non-Latino, Latino of any race, Asian, and Other. Other race includes native Hawaiian, Other Pacific Islander, American Indian, Alaska native, and more than one race. The present study renamed these categories to include White, African American, Asian American, Hispanic, Indigenous, and Multiracial. Additionally, this variable was transformed into several dummy-coded variables with "White" as the reference group.

Family structure/marital status. This variable was computed using the mothers' data from the parent questionnaire at wave four and seven, specifically mothers' current marital status. A dummy code was used for this variable, using married as the reference group (coded as 0) and single as the other group (coded as 1). The single category includes those who reported being separated, divorced, widowed, and never married.

Number of siblings. Parents reported the number of siblings currently residing in the household. This remained a continuous variable in its natural metric which was number of siblings. The distribution was near normal across both grades

School level predictor variables. All predictor variables at the school level were identical for parents of first and eighth grade students.

Average social capital/parent interaction. This variable was based on the question "About how many parents of children in {CHILD}'s {or {TWIN}'s} class do you talk with regularly, either in person or on the phone?" from the spring questionnaire for parents of first and eighth grade students. I aggregated this variable from the

child/parent level to the school level and then allowed it to remain a continuous variable in its natural metric which was number of parents.

Average barriers for parental involvement. This variable is the aggregate of the composite measuring barriers to parental involvement (8 items; 0 = experiencing no barriers, 8 = experiencing of all 8 barriers). The eight items included in this composite were inconvenient meeting times; no child care; problems with safety going to school; inability to get time off from work; language barriers; the school does not make parents feel welcome; problems with transportation; and finally not hearing about things going on at school. This was used as a predictor for both school-based and home-based involvement for the same reasons as previously described. This aggregate variable remained continuous on the school level. It also remained in its natural metric which was number of barriers. The distribution was near normal across both grades

Average educational expectations. Aggregate of the child/parent variable in which parents reported how far they expected their children to go in school. Possible answers include graduating high school, attending two or more years of college, completing college and receiving a college degree, earning a master's degree, or finishing a doctorate, medical degree or some other form of advanced degree. As with the child/parent level, this was treated as a continuous variable. The metric continued to be the educational degree expected for one's child. Again, the distribution was near normal across both grades.

Average school SES. I aggregated the child/parent level SES variable to create this school level SES variable. It remained a continuous variable with the same metric as on the child/parent level.

School minority composition. This variable indicates school administrators' reports on the percent of minority students enrolled in their school during the current year. School administrators provided this information during wave 4 and wave 7. It was transformed into a dummy-coded variable in which the reference group was schools comprised of less than 50% minority students. The comparison group was those schools in which the student population was comprised of at least 50% minority students. Racial/ethnic groups included in the "minority" category were Black non-Latino, Latino of any race, Asian, and Other. Other race included native Hawaiian, Other Pacific Islander, American Indian, Alaska native, and more than one race. Non "minority" referred to white students.

Average number of siblings. I aggregated the child/parent level number of siblings variable to create this school level variable. It remained a continuous variable on the school level. The metric remained the number of siblings and again the distribution was near normal for both grades.

Analytic Approach

Analyses. All descriptive analyses were performed in SPSS. After the base year of the study, NCES provided only child-level weights and no longer provided school-level weights. Therefore, the present analyses utilized a longitudinal child-level weight, C4_7PWO, for both first grade and eighth grade data analyses. This weight was appropriate for parent interview data collected between waves 4 and 7; such data may be analyzed alone or in combination with child assessment data, teacher questionnaire data, or school administrator data.

The present analyses used Hierarchical Linear Modeling (HLM) to determine the relationships across predictor and outcome variables. Researchers and methodologists recommend this form of analysis when there is nesting of data. In the present study, children and parents (level one characteristics) were nested within schools (level two characteristics) resulting in a lack of independence among cases since all parents of children in a school share the school's characteristics. HLM accounts for this lack of independence thus allowing researchers to interpret accurately the coefficients that are produced. The present analyses used fifteen models, three models for each of the five outcome variables. For each outcome variable, there was an unconditional model (Model 1) followed by two fully conditional models (Model 2, an initial conditional model, and Model 3, a final conditional model that included only statistically significant variables). A visual illustration of these analyses is presented in Appendices E and F. Additionally, Tables 5-9 depict Models 2 and 3 for each outcome variable.

Unconditional model. An unconditional model is the first step whenever HLM analyses are conducted and was created for each of the five outcome variables. It establishes a base for comparison and assesses the amount of variance in the outcome variable, in this case parental involvement, across schools. The fully unconditional level one model is

$$Y_{IJ} = \beta_{0j} + r_{ij}$$

where[1]

Y_{IJ} is the outcome variable (ie. home-based parental involvement; school-based parental involvement)

[1] Models follow explanation provided by Gonzalez (2012)

β_{0j} is the mean outcome of school j, and

r_{ij} is the random "individual effect," otherwise known as the error term, which is assumed to have a mean of 0 and a variance of σ^2.

The fully unconditional level two model is

$$\beta_{0j} = \gamma_{00} + \mu_{0j}$$

where

β_{0j} is the mean outcome of school j,

γ_{00} is the grand mean outcome of the populations, and

μ_{0j} is the random "school effect," or the deviation from school j's predicted outcome. It is assumed to have a mean of 0 and a variance of τ_{00}.

The intraclass correlation (ICC) was calculated after running each of the five fully unconditional models resulting in the creation of five ICCs (see Tables 3 and 4). Each ICC represented the proportion of parental involvement that varied across schools. They indicated that both forms of parental involvement significantly varied across schools thus suggesting the need to include school-level predictors in one's investigation.

Fully Conditional Model. The fully conditional final model shows the impact of child/parent level characteristics (research question one) along with school level characteristics (research question two). It should be noted that all assumptions of independence and normality were met by the variables in the final model. All child/parent level characteristics and school level characteristics were grand-mean centered. The level one fully conditional model for each outcome variable is

$$Y_{IJ} = \beta_{0j} + \sum_{q=1}^{\mathrm{Q}} \beta_{qj} X_{qij} + r_{ij}$$

where

Y_{IJ} is the outcome variable (ie. home-based parental involvement; or school-based parental involvement)

β_{0j} is the mean outcome of school *j*

Q is the number of individual predictors

β_{qj} is the average effect of the *q*th individual predictor on the outcome in school *j*

X_{qij} is the value of the *q*th predictor for individual *i* in school *j*, and

r_{ij} is the error term also viewed as the amount of deviation from the predicted outcome for individual *i* in school *j*.

The level two model is

$$\beta_{qj} = Y_{q0} + \sum_{s=1}^{S} \gamma_{qs} W_{sj} + u_{qj}$$

where

β_{qj} is the level one coefficient for predictor *q* in school *j*

Y_{q0} is the intercept of the *q*th level one coefficient across all schools

γ_{qs} is the average effect of the *s*th school predictor on the β_{qj} coefficient

S is the number of school predictors

W_{sj} is the value of the *s*th school predictor for school *j*, and

u_{qj} is the error term or the deviation from the predicted outcome for school *j*.

Chapter 4: Results

Presentation of Results

The current chapter presents both descriptive and analytic results. Descriptive results provide information on the parent data and school data, specifically the means of the outcome and means or frequencies of the predictor measures.

Descriptive Results

Table 2 provides descriptive information about all of the variables included in this study and Appendices G through J provide information on the correlations among variables. The majority of the sample was married (70.40% and 68.90% in first and eighth grades, respectively) and most parents were White-non Hispanic (57.00% in both grades). Previous research links these characteristics with parental involvement such that married parents often report higher levels of involvement than single parents (e.g., Ho Sui-Chu & Willms, 1996) and white parents often report higher levels of involvement than some other racial/ethnic groups (e.g., Huntsinger & Jose, 2009).

In first grade, 40.70% of parents reported interacting with between one and four other parents while 51.50% reported this to be true in eighth grade. On average, parents of eighth grade children interacted with one parent more than parents of first grade children. Additionally, parents of eighth grade children reported experiencing significantly fewer barriers to parental involvement than parents of first grade children. This pattern occurred on both the child/parent level as well as the school level.

Table 2. Descriptive Statistics for ECLS-K Sub-Sample Child/Parent Level Predictors and School Level Predictors

	1st Grade			8th Grade		
Child/Parent-level variable	Mean or %	SD	Missing	Mean or %	SD	Missing
SES			0.0%			0.0%
1st Quintile	18.00 %	---	---	18.30 %	---	---
2nd Quintile	18.90 %	---	---	20.90 %	---	---
3rd Quintile	19.90 %	---	---	19.80 %	---	---
4th Quintile	20.50 %	---	---	20.20 %	---	---
5th Quintile	22.70 %	---	---	20.80 %	---	---
Race/ Ethnicity			0.00 %			0.20 %
White	57.00 %	---	---	57.00 %	---	---
Af. Am.	17.20 %	---	---	17.20 %	---	---
Hispanic	18.40 %	---	---	18.40 %	---	---
Asian	3.00 %	---	---	3.00 %	---	---
Indigenous	2.30 %	---	---	2.30 %	---	---
Multiracial	1.90 %	---	---	2.00 %	---	---
Marital Status			0.00 %	0.20 %	---	0.20 %
Married	70.40 %	---	---	68.90 %	---	---
Barriers to PI			0.10 %			0.00 %
No Barriers	29.90 %	---	---	51.50 %	---	---
1-2 Barriers	54.00 %	---	---	40.00 %	---	---
> 2 Barriers	16.00 %	---	---	8.50 %	---	---
Parent Interaction			0.20 %			0.20 %
No Parents	33.80 %	---	---	15.30 %	---	---
1-4 Parents	40.70 %	---	---	51.10 %	---	---
> 4 Parents	25.30 %	---	---	33.40 %	---	---

Table 2 continued on the next page.

Table 2 continued. Descriptive Statistics for ECLS-K Sub-Sample Child/Parent Level Predictors and School-Level Predictors

	1st Grade			8th Grade		
Child/Parent-level variable	Mean or %	SD	Missing	Mean or %	SD	Missing
Parent Expectations			0.80%			0.20 %
Not complete high school	.30 %	---	---	.40 %	---	---
Graduate high school	10.50%	---	---	6.60 %	---	---
Attend college (≥ 2 years)	15.80 %	---	---	15.40 %	---	---
Graduate 4 year college	47.50 %	---	---	49.00 %	---	---
Earn a master's degree	13.30 %	---	---	16.20 %	---	---
Earn PhD or M.D.	11.80 %	---	---	12.30 %	---	---
Number of Siblings	1.50	1.12	0.00 %	1.47	1.13	0.00 %
School-level Variable	Mean or %	SD	Missing	Mean or %	SD	Missing
Avg. School SES	.00	.59	0.00 %	.20	.61	6.70 %
Schools with <50% minorities	66.20 %	---	2.20 %	64.00	---	1.80 %
Avg. Barriers to PI			0.00 %			0.00 %
No Barriers	28.80 %	---	---	56.80 %	---	---
1-2 Barriers	69.60 %	---	---	37.90 %	---	---
> 2 Barriers	1.60 %	---	---	5.20 %	---	---
Avg. Parent Interaction	2.89	1.88	0.00 %	4.07	2.53	0.00 %
Avg. Parent Expectations			0.00 %			0.00 %
Not complete high school	.00 %	---	---	0.10 %	---	---
Graduate high school	2.50 %	---	---	2.40 %	---	---
Attend college (≥ 2 years)	38.90 %	---	---	29.90 %	---	---
Graduate 4 year college	52.20 %	---	---	52.50 %	---	---
Earn a master's degree	5.60 %	---	---	13.70 %	---	---
Earn PhD or M.D.	0.80%	---	---	1.40 %	---	---

Note. Child/Parent Level Predictors weighted by the normalized version of the C4C5C6C7 parent panel weight of the full sample (C4_7PWO). Additional details presented in Chapter 3.

Research Questions

This study posed three research questions directed at predicting forms of parental involvement in first and eighth grades. I also examined the difference in the strength of the validity coefficients between the same predictor variables of school-based parental involvement and home-based parental involvement in first and eighth grades. The first research question investigated the variance explained by child/parent level characteristics. The second research question analyzed the variance explained by school level characteristics. The third research question compared coefficients in the first and eighth grade models predicting school-based and home-based parental involvement.

For all five outcome variables, I ran the unconditional model followed by a second model (Model 2) that was identical across all outcomes in regards to all child/parent and school characteristics included. Next, I ran a third and final model that included only variables that met criteria for significance (Model 3). The criteria for significance are described below. Models 2 and 3 are presented in Tables 5-9. Models 2 and 3 pertain to research questions one and two while a comparison of the coefficients in the five final conditional models focuses on research question three and is presented in Table 10.

Although inclusion of statistical significance for each coefficient (e.g. b coefficient) is not included in the text, it should be noted that all coefficients described as significant did attain $p < .10$ significance. Given the exploratory nature of this study, the $p < .10$ significant criteria was chosen as I wanted minimize the chance that I would overlook findings by using too stringent requirements. Additionally, the coefficients presented in this review are described using Cohen's (1988) criterion: small effect sizes

are those between .1 to .3, medium effect sizes range from .3 to .5, and large effect sizes are ≥ .5. The coefficients with information about statistical significance are available in Tables 5-10. It is important to note that statistical significance does not always equate to practical importance. Although all results described as significant did attain $p < .10$ significance, not all had equal practical importance as judged by the magnitude of the effect size.

To help the reader to better understand the results in a meaningful way, research questions one and two are presented using the natural metric (number of events attended) for school-based parental involvement and the standardized metric for home-based involvement. The measures of home-based parental involvement needed to be standardized because the specific items that make up the composites used different metrics. Research question three compares effect sizes across the two forms of parental involvement and thus only refers to the coefficients expressed in standardized units of the dependent variable.

As previously mentioned the ICC provides the proportion of between group (schools) variance present in parental involvement and justifies the need to include school level variables in an investigation of parental involvement. Tables 3 and 4 report the ICC and the reliability (λ) for each of the five outcome variables. In multi-level modeling, the measure of reliability, also referred to as lambda, assesses how well one can estimate a random parameter given child and school level data. In both grades, the reliability estimates for home-based parental involvement were weaker than for school-based parental involvement. However, all measures of reliability were sufficient to specify a multi-level model.

Table 3. Psychometric Properties of 1st Grade Parental Involvement (Fully Unconditional Models)

Characteristics	Coefficients	
	School-Based Parental Involvement	Home-Based Parental Involvement
$Sigma^2$	1.66	.83
Tau	.70	.15
ICC	30.00%	15.00%
Reliability (Lambda)	.76	.59
Reliability between-school		
Mean Parental Involvement	.67	.58

Table 4. Psychometric Properties of 8th Grade Parental Involvement (Fully Unconditional Models)

Characteristics	Coefficients		
	School-Based Parental Involvement	Home-Based Parental Involvement-Background Knowledge	Home-Based Parental Involvement-Related to School
$Sigma^2$	2.07	.76	.82
Tau	.69	.24	.11
ICC	25.00%	24.00%	12.00%
Reliability (Lambda)	.64	.63	.44
Reliability between-school			
Mean Parental Involvement	.61	.49	.39

Research Question 1: To what extent do child/parent characteristics of SES, expectations, barriers, marital status, social capital, number of siblings and race/ethnicity help to explain parental involvement in 1st and 8th grade across schools?

First grade.

School-based parental involvement. The proportion of variance in school-based parental involvement in first grade that is explained by the individual-level predictors was 19.00%. The results showed that average school-based parental involvement for parents of first grade children was 4.25 activities net of SES, parent barriers, race/ethnicity,

parent interaction/social capital, educational expectations, and marital status (see Table 5 below). In other words, parents with average values for these variables participated, on average, in a little over two-thirds of the afforded opportunities as measured by the survey for parental involvement. Coefficients expressed in standardized units of the dependent variable for the child/parent level characteristics included in this model ranged from a small effect of -.03 to a large effect of .68.

Both marital status and parental barriers were significantly and negatively associated with school-based parental involvement (Table 5). After controlling for all other variables in the model, parents who reported experiencing more than two barriers attended .40 fewer activities than parents experiencing no barriers. After controlling for the remaining child/parent level characteristics, Asian-American parents and Hispanic parents reported being less involved in school than their white counterparts. Interestingly, while both Asian-American parents and Hispanic parents reported less involvement than white parents, the effect sizes produced by each group were quite different. The difference between white parents and Asian-American parents was a large and negative effect while the difference between white and Hispanic parents was a weak and negative effect. It is possible that Hispanic parents include the activities of other family members when reporting about parental involvement which might impact patterns of parental involvement. Also, it should be noted that race/ethnicity status likely stands for a proxy of varying cultural practices. Therefore, it is not so much that being Hispanic decreases parental involvement as it is hypothesized that cultural practices or beliefs of minorities may be associated with lower parental involvement.

Table 5. Between-School Model of School-Based Parental involvement in First Grade

Random Effects	Coefficient	
	Model 2	Model 3 (Final)
Intercept		
Base	4.25***	4.25 (2.75)***
Average SES	.05	--
Average Parent Interaction/Social Capital	.02	--
Average Parental Barriers	-.02	--
Average Educational Expectations	.15**	.20 (.13)**
Average Number of Siblings	-.00	--
Schools with more than 50% Minorities	.05	--
SES Slope		
Intercept	.35***	.38 (.25)***
Parent Barriers Slopes		
1-2 Barriers, Intercept	-.11**	-.11 (-.07)**
> 2 Barriers, Intercept	-.39***	-.40 (-.26)***
Race/Ethnicity Slope		
African American, Intercept	-.04	-.04
Asian American, Intercept	-.89***	-.90 (-.58)***
Hispanic, Intercept	-.21**	-.21 (-.14)**
Indigenous, Intercept	-.22	-.22
Multi-racial, Intercept	-.12	-.10
Parent Interaction/Social Capital Slope		
1-4 Parents, Intercept	.63***	.64 (.41)***
> 4 Parents, Intercept	1.03***	1.05 (.68)***
Educational Expectations Slope	.03	--
Parental Marital Status Slope	-.25***	-.25 (-.16)***
Number of Siblings Slope	-.05**	-.05 (-.03)*
Variance Component for Final Random Effects		
Intercept		
Between-school SD	.58	
Between-school variance (τ_{00})	.34	
Degrees of freedom	895.00	
Chi-square	2789.17	

Note. Numbers in parentheses are coefficients expressed in standardized units of the dependent variable; *p<.10; **p<.05; ***p<.001.

Table 5 also shows that SES was positively and significantly associated with school-based parental involvement such that for every one standard deviation increase in average SES, the average number of activities a parent attends increased by .38. In other words, children who come from higher SES backgrounds are found to experience greater school-based involvement from their parents. Similarly, parents who reported interacting

with between one and four other parents as well as more than four other parents attended significantly more school-based activities than parents who report interacting with no other parents (b = .64 and 1.05, respectively).

Table 6. Between-School Model of Home-Based Parental involvement in First Grade

Random Effects	Coefficient	
	Model 2	Model 3 (Final)
Intercept		
Base	.06**	.05**
Average SES	-.02	--
Average Parent Interaction/Social Capital	-.03*	-.03**
Average Parental Barriers	-.02	--
Average Educational Expectations	-.05	--
Average Number of Siblings	-.01	--
Schools with more than 50% Minorities	-.05	--
SES Slope		
Intercept	.02	--
Parent Barriers Slopes		
1-2 Barriers, Intercept	-.02	--
> 2 Barriers, Intercept	-.06	--
Race/Ethnicity Slope		
African American, Intercept	.08	.06
Asian American, Intercept	-.10	-.12
Hispanic, Intercept	-.15**	-.18***
Indigenous, Intercept	.24**	.23**
Multi-racial, Intercept	-.02	-.02
Parent Interaction/Social Capital Slope		
1-4 Parents, Intercept	.22***	.23***
> 4 Parents, Intercept	.48***	.49***
Educational Expectations Slope	.11**	.10***
Parental Marital Status Slope	.01	--
Number of Siblings Slope	.00	--
Variance Component for Final Random Effects		
Intercept		
Between-school SD	.37	
Between-school variance (τ_{00})	.14	
Degrees of freedom	895.00	
Chi-square	2286.61	

Note. *p<.10; **p<.05; ***p<.001.

Home-based parental involvement. The individual-level predictors explained 4.26% of variance in home-based parental involvement in first grade. Parents of first

grade children participated, on average, in .05 standardized home-based activities net of race/ethnicity, parent interaction/social capital, and educational expectations. Coefficients expressed in standardized units of the dependent variable for these child/parent level predictors ranged from a small effect of .10 to a large effect of .49 (see Table 6 below).

Consistent with the findings from school-based parental involvement, parents who interacted with other parents reported greater levels of home-based parental involvement. Specifically, parents who interacted with one to four other parents participated in .23 standard deviations more home-based involvement activities than those parents who did not converse with other parents. Moreover, parents who interacted with more than four other parents were more involved in home-based activities by .49 standard deviations as compared to parents who spoke to no one. Educational expectations also were positively and significantly associated with home-based parental involvement such that parents with greater educational expectations reported being more involved in home-based activities.

Finally, race/ethnicity findings differed from those in the school-based parental involvement model. While Hispanic parents remained less involved than their white counterparts a new finding emerged that parents from Indigenous background were .23 standard deviations more involved than their white counterparts.

Summary of first grade child/parent level parental involvement. Parent interaction/social capital and race/ethnicity both significantly predicted school-based and home-based parental involvement. In fact, parent interaction/social capital provided the strongest effect sizes across both school-based and home-based parental involvement. There were some differences in the predictors for school-based versus home-based

parental involvement. While parent barriers impacted school-based involvement, it was not significantly related to home-based parental involvement. Marital status and SES followed the same pattern as noted with parent barriers. In contrast, parents' educational expectations significantly predicted home-based involvement but not school-based involvement. See Table 10 for a summary of findings.

Eighth grade.

School-based parental involvement. The proportion of variance in school-based parental involvement in eighth grade explained by the individual-level predictors was 14.14%. The results showed that average school-based parental involvement for parents of eighth grade children was 2.62 activities net of SES, race/ethnicity, parent interaction/social capital, educational expectations, and marital status (see Table 7 below). In other words, the parents of these children participated, on average, in a little less than half of the afforded opportunities for parental involvement. Coefficients expressed in standardized units of the dependent variable for the parent/child level characteristics included in this model ranged from a small effect of .06 to a large effect of .68.

As with first grade school-based parental involvement, parent interaction/social capital produced the strongest effect on school-based parental involvement for parents of eighth grade children. Specifically, parents who spoke with one to four other parents reported attending .62 more activities than parents with no parent interaction. Furthermore, parents with more than four parent contacts reported attending 1.15 more activities than their counterparts.

Table 7. Between-School Model of School-Based Parental involvement in Eighth Grade

Random Effects	Coefficient	
	Model 2	Model 3 (Final)
Intercept		
Base	2.57***	2.62 (1.56)***
Average SES	-.04	--
Average Parent Interaction/Social Capital	.05**	.05 (.03)**
Average Parental Barriers	-.06	--
Average Educational Expectations	.03	--
Average Number of Siblings	-.01	--
Schools with more than 50% Minorities	.03	--
SES Slope		
Intercept	.21***	.21 (.12)***
Parent Barriers Slopes		
1-2 Barriers, Intercept	-.04	--
> 2 Barriers, Intercept	-.07	--
Race/Ethnicity Slope		
African American, Intercept	.25*	.24 (.14)*
Asian American, Intercept	-.07	-.20
Hispanic, Intercept	.11	.04
Indigenous, Intercept	.06	-.01
Multi-racial, Intercept	.35**	.35 (.21)**
Parent Interaction/Social Capital Slope		
1-4 Parents, Intercept	.56***	.62 (.37)***
> 4 Parents, Intercept	1.11***	1.15 (.68)***
Educational Expectations Slope	.08**	.10 (.06)**
Parental Marital Status Slope	-.24***	-.25 (-.15)***
Number of Siblings Slope	.02	--
Variance Component for Final Random Effects		
Intercept		
Between-school SD	.75	
Between-school variance (τ_{00})	.56	
Degrees of freedom	945.00	
Chi-square	2823.38	

Note. Numbers in parentheses are coefficients expressed in standardized units of the dependent variable; *p<.10; **p<.05; ***p<.001.

Three other significant predictors of school-based parental involvement for parents of eighth grade children emerged including marital status, educational expectations, and race/ethnicity status. Single parents reported significantly less school-based involvement than their married counterparts (Table 7). In comparison, parents with higher educational expectations as well as those with higher SES reported significantly

more school-based parental involvement. For every one standard deviation increase in SES, parents reported a .21 increase in school-based parental involvement. While race/ethnicity significantly impacted school-based parental involvement, the specific patterns differed from those found in first grade. African American parents and parents identifying and multi-racial backgrounds reported attending more school-based events (.24 and .35, respectively) than their white counterparts.

Home-based parental involvement, background knowledge. The proportion of variance in home-based parental involvement related to background knowledge in eighth grade that was explained by the child/parent level predictors was 20.41%. Parents of eighth grade children participated, on average, in .19 standardized units of home-based parental involvement activities fostering background knowledge net of SES, race/ethnicity, parent interaction/social capital, educational expectations, marital status, and number of siblings (see Table 8 below). Standardized effect sizes for the child/parent level characteristics included in this model ranged from a small effect of .08 to a medium effect of .44.

Consistent with the findings from school-based parental involvement for parents of first and eighth grade children, parents with more parent-to-parent interactions partook in more home-based activities related to background knowledge. In fact, parents with one to four parent interactions reported .21 standard deviations more involvement at home than their counterparts with no parent interactions. Parents reporting having more than four parent contacts participated in .44 standard deviations more home-based activities than parents with no parent interactions.

Table 8. Between-School Model of Home-Based Parental involvement- Background Knowledge in Eighth Grade

Random Effects	Coefficient	
	Model 2	Model 3 (Final)
Intercept		
Base	.18***	.19***
Average SES	.02	--
Average Parent Interaction/Social Capital	-.00	--
Average Parental Barriers	-.07	--
Average Educational Expectations	.02	--
Average Number of Siblings	-.03	--
Schools with more than 50% Minorities	.02	--
SES Slope		
Intercept	.13***	.14***
Parent Barriers Slopes		
1-2 Barriers, Intercept	-.05	--
> 2 Barriers, Intercept	-.01	--
Race/Ethnicity Slope		
African American, Intercept	-.07	-.10
Asian American, Intercept	-.27**	-.26**
Hispanic, Intercept	-.07	-.10*
Indigenous, Intercept	-.18	-.21
Multi-racial, Intercept	.25**	.26**
Parent Interaction/Social Capital Slope		
1-4 Parents, Intercept	.21***	.21**
> 4 Parents, Intercept	.43***	.44***
Educational Expectations Slope	.07***	.08***
Parental Marital Status Slope	-.12**	-.12**
Number of Siblings Slope	-.08***	-.09***
Variance Component for Final Random Effects		
Intercept		
Between-school SD	.33	
Between-school variance (τ_{00})	.11	
Degrees of freedom	939.00	
Chi-square	2053.00	

Note. *p≤.10; **p<.05; ***p<.001.

After controlling for other variables in the model, five other significant findings emerged including educational expectations, SES, marital status, number of siblings, and race/ethnicity status. Parents with higher educational expectations and higher levels of SES also reported greater levels of home-based parental involvement focused on fostering background knowledge (b=.08 and .14, respectively). Additionally, single

parents and parents with more children (number of siblings) reported lower amounts of home-based involvement related to fostering background knowledge. These findings were in keeping with initial hypotheses and the literature.

Finally, race/ethnicity findings were significant but differed from those found in the school-based parental involvement for parents of eighth grade children model. For home-based parental involvement related to fostering background knowledge, Hispanic and Asian American parents reported significantly less involvement than their white counterparts while multi-racial parents reported significantly more involvement than their white counterparts.

Home-based parental involvement, related to school. The proportion of variance in home-based parental involvement related to school in eighth grade that was explained by the parent/child level predictors was 8.56%. The results indicated that average home-based parental involvement for parents of eighth grade children was .05 standard units net of average SES, race/ethnicity, parent interaction/social capital, educational expectations, and number of siblings (see Table 9 below). Coefficients expressed in standardized units of the dependent variable for the parent/child level characteristics included in this model ranged from a small effect of .05 to a medium effect of .37.

Parent interaction once again emerged as having a significant, large effect on this form of parental involvement. Parents who reported interacting with other parents also reported partaking in more home-based activities related to school. Parents who reported interacting with one to four parents experienced .22 standard deviations more involvement than counterparts with no parent interactions; parents with more than four parent contacts reported a .37 standard deviation increase in home-based parental

involvement related to school as compared to parents with no parent contacts. While these were significant effect sizes, they were marginally smaller than those produced in the model for home-base parental involvement pertaining to fostering background knowledge.

Table 9. Between-School Model of Home-Based Parental involvement- Related to School in Eighth Grade

Random Effects	Coefficient	
	Model 2	Model 3 (Final)
Intercept		
Base	.05**	.05**
Average SES	-.08**	--
Average Parent Interaction/Social Capital	.00	--
Average Parental Barriers	-.13**	-.09**
Average Educational Expectations	-.01	--
Average Number of Siblings	-.00	--
Schools with more than 50% Minorities	.02	--
SES Slope		
Intercept	-.06**	-.08***
Parent Barriers Slopes		
1-2 Barriers, Intercept	-.05	--
> 2 Barriers, Intercept	.04	--
Race/Ethnicity Slope		
African American, Intercept	.20**	.20**
Asian American, Intercept	-.26**	-.28**
Hispanic, Intercept	.03	.03
Indigenous, Intercept	-.11	-.09
Multi-racial, Intercept	.23**	.24**
Parent Interaction/Social Capital Slope		
1-4 Parents, Intercept	.24***	.22**
> 4 Parents, Intercept	.39***	.37***
Educational Expectations Slope	.05**	.05**
Parental Marital Status Slope	-.07	--
Number of Siblings Slope	-.14***	-.13***
Variance Component for Final Random Effects		
Intercept		
Between-school SD	.29	
Between-school variance (τ_{00})	.09	
Degrees of freedom	899.00	
Chi-square	1698.72	

*p≤.10; **p<.05; ***p<.001

As found with the other outcome variables, educational expectations, SES, and race/ethnicity all significantly predicted home-based parental involvement related to school. After controlling for other variables in the model, parents who had higher educational expectations reported higher levels of home-based parental involvement related to school (b=.05). Interestingly, SES had a significant but negative association with home-based parental involvement related to school, which was in contrast to all other forms of parental involvement. For every one standard deviation increase in SES, parents reported a .08 standard deviation decrease in home-based parental involvement related to school.

As found in the other models, parents of children with more siblings also reported less involvement (b= -.13). Finally, Asian American and Indigenous parents noted less home-based involvement related to school than their White counterparts (b= -.28 and -.09, respectively), while multiracial parents reported engaging in .24 standard deviations more than their white counterparts. Implications of these findings are discussed further in Chapter 5.

Summary of eighth grade child/parent level parental involvement. As with first grade child/parent level parental involvement, parent interaction/social capital and race/ethnicity produced the strongest effect sizes for all three forms of parental involvement in eighth grade. Interestingly, the patterns related to race/ethnicity varied across the three forms of parental involvement and did not support the researcher's hypotheses or past research. Three other characteristics that significantly explained variance included educational expectations, marital status, and number of siblings. Parents' educational expectations positively predicted parental involvement at school and

at home. In comparison, marital status and number of siblings had variable impacts on parental involvement depending on the form of parental involvement. See Table 10 for a summary of findings.

Research Question 2: To what extent do school characteristics of barriers, social capital, expectations, SES, and minority composition explain the variability of PI in first and eighth grades across schools?

First grade.

School-based parental involvement. The between-school intercept model explained 4.48% of the variance in school-based parental involvement across schools. The results showed that average parental involvement was 4.25 activities for parents of first grade children coming from schools with average educational expectations (Table 5). In other words, the parents of these children participated, on average, in a little over two-thirds of the afforded opportunities for parental involvement. One school level characteristic, average educational expectations, proved to be significantly related to average amount of school-based parental involvement for individual *i* in school *j*. The standardized effect size fell in the small range for this variable. For each one unit increase in a school's average educational expectation, average school-based parental involvement increased by an additional .20 activities after controlling for all other variables in the model.

Home-based parental involvement. The between-school intercept model explained 1.24% of the variance in home-based parental involvement across schools. Average home-based parental involvement was .05 standard units for parents of first grade children coming from schools with average parent interaction (Table 6). Again,

one school level characteristic proved to be significantly related to average level of school-based parental involvement for individual *i* in school *j* and again it produced a very weak coefficients expressed in standardized units of the dependent variable. For each one parent increase in and above a school's average number of parent-to-parent interactions, average home-based parental involvement decreased by .03 standard deviations. This finding was minimal, at best.

Summary of first grade school level parental involvement. Two school level characteristics predicted parental involvement at home and at school and were variable across settings. While average educational expectations predicted school-based involvement for parents of first grade children, average parent interaction/social capital impacted home-based involvement for parents of first grade children. Implications of these findings will be discussed in Chapter 5. See Table 10 for a summary of findings.

Eighth grade.

School-based parental involvement. The between-school intercept model explained 1.55% of the variance in home-based parental involvement across schools. Average school-based parental involvement was 2.62 activities for parents of eighth grade children coming from schools with average parent interaction (Table 7). Average parent interaction/social capital was the only school level characteristic significantly related to average level of school-based parental involvement for individual *i* in school *j* producing another very small standardized effect. For each one parent increase in and above a school's average number of parent interactions, average school-based parental involvement decreased by .05 activities. While this was a significant finding, again the effect size is minimal.

Home-based parental involvement, background knowledge. Average home-based parental involvement was .19 standard deviations for parents of eighth grade children. No school level variables significantly predicted home-based parental involvement focused on fostering background knowledge in eighth grade (Table 8).

Home-based parental involvement, related to school. The between-school intercept model explained 3.56% of the variance in home-based parental involvement related to school across schools. Average home-based parental involvement in which activities related to school was .05 standard units for parents of eighth grade children coming from schools with average number of parental barriers (Table 9). One school level characteristic significantly predicted the average level of school-based parental involvement for individual *i* in school *j*. For every one barrier increase in the average number of barriers experienced in a school, average home-based parental involvement related to school decreased by .09 standard deviations. Again, while significant, this produced a small standardized effect size.

Summary of eighth grade school level parental involvement. Across both forms of parental involvement there were few effects that were statistically significant. Those that were statistically significant were small in magnitude. There were two school level characteristics that predicted parental involvement in eighth grade at home and at school but as with first grade, they were variable across settings. While average parent interaction/social capital predicted school-based involvement for parents of eighth grade children, average number of barriers experienced predicted home-based parental involvement in which activities relate to school. Interestingly, no school level predictors

were significant in predicting home-based involvement focused on background knowledge. See Table 10 for a summary of findings.

Research Question 3: How do the school and parent/child characteristics that explain the variability of school-based parental involvement and home-based parental involvement in first grade differ from those that explain the variability of school-based parental involvement and home-based parental involvement in eighth grade?

Among all the predictor variables, parent interaction/social capital produced the largest effect sizes and remained fairly stable across grade in the prediction of school-based parental involvement. Two additional predictors produced stable effects across first and eighth grade in their prediction of school-based parental involvement. Marital status had a small but stable effect across both grades. Also, race/ethnicity significantly predicted parental involvement across both grades. However, the specific patterns within the different racial/ethnic groups varied across grades. See Table 10 for a summary of findings. Socioeconomic status also had an effect on school-based parental involvement across both grades although it was not a stable effect. Interestingly, parent barriers only predicted school-based involvement in first grade and had no significant effect in eighth grade. While significance was only reached in first grade, the difference in effect sizes was quite minimal between the two grades.

As for home-based parental involvement, parent interaction/social capital again produced medium to large effects on home-based parental involvement with the effects being marginally less for eighth grade parents. Also, smaller effects of parent interaction/social capital were found for home-based parental involvement versus school-

based parental involvement for both grades. Race/ethnicity produced small to medium effect sizes but the specific patterns once again were not consistent across grades.

Table 10. Summary of Findings

Predictor	School-Based		Home-Based		
	1st	8th	1st	8th Back. Know.	8th Related to Sch.
Intercept					
Base	2.75***	1.56***	.05**	.19***	.05**
		Child/Parent Level			
SES Slope					
Intercept	.25***	.12***	--	.14***	-.08***
Parent Barriers Slopes					
1-2 Barriers, Intercept	-.07**	--	--	--	--
> 2 Barriers, Intercept	-.26***	--	--	--	--
Race/Ethnicity Slope					
African American, Intercept	--	.14*	.06	--	.20**
Asian American, Intercept	-.58***	--	-.12	-.26**	-.28**
Hispanic, Intercept	-.14**	--	-.18***	-.10*	.03
Indigenous, Intercept	--	--	.23**	--	-.09
Multi-racial, Intercept	--	.21**	-.02	.26**	.24**
Parent Interaction/Social Capital Slope					
1-4 Parents, Intercept	.41***	.37***	.23***	.21**	.22**
> 4 Parents, Intercept	.68***	.68***	.49***	.44***	.37***
Educational Expectations Slope	--	.06**	.10***	.08***	.05**
Parental Marital Status Slope	-.16***	-.15***	--	-.12**	--
Number of Siblings Slope	-.03*	--	--	-.09***	-.13***
		School Level			
	1st	8th	1st	8th Back. Know.	8th Related to Sch.
Avg. SES	--	--	--	--	--
Avg. Parental Int./Social Cap.	--	.03**	-.03**	--	--
Avg. Parental Barriers	--	--	--	--	-.09**
Avg. Educational Expectations	.13**	--	--	--	--
Avg. Number of Siblings	--	--	--	--	--
Schools with > 50% Min.	--	--	--	--	--

Note. All b coefficients are expressed in standardized units of the dependent variable; all dummy-coded coefficients, regardless of significance, are included;*p≤.10; **p<.05; ***p<.001.

In both grades, one school level characteristic significantly albeit weakly predicted school-based parental involvement. However, it was not the same school level

characteristic that predicted school-based parental involvement at both time points. In first grade, school average educational expectations significantly predicted school-based parental involvement while in eighth grade average parent interaction/social capital school-wide predicted school-based parental involvement. These can be considered to be contextual effects as they are characteristics describing the school. See Table 10 for a summary of findings.

Similarly, one school level characteristic significantly predicted home-based parental involvement in both grades. Again, it was not the same school level characteristic at each time point. In first grade, schools with average parent interaction/social capital had a small and negative effect on home-based parental involvement. In comparison, schools with increased number of parent barriers had a small and negative effect of home-based parental involvement related to school in eighth grade. Again, both of these remained contextual effects.

Chapter 5: Discussion

I explored the impact of child/parent level and school level characteristics on parental involvement across settings and student age. Given the presumption that parental involvement is important for the American educational system, it is useful to determine what we know about the predictors of parental involvement. Although it is helpful to understand the impact of individual characteristics, such as SES, ethnicity and family structure, on parental involvement, these are more static variables that are less likely to be influenced by educational policy (Feuerstein, 2000). In contrast, individual and school characteristics, related to social capital and many parental barriers are areas that can be shaped and directly influenced by educational policy, reform, and even school-level interventions.

To date, most of the pertinent research on predicting parental involvement has addressed only individual characteristics of parental involvement. Only in recent years, and only in a few studies, have researchers begun to include school characteristics as predictors of parental involvement (e.g. Anderson & Minke, 2007; Feuerstein, 2000). A small number of these studies have included both individual and school level characteristics in the same study. Similarly, most of the existing studies have examined either home-based parental involvement *or* school-based parental involvement but not both. The present study used multi-level modeling to determine whether specific child/parent and school characteristics predicted parental involvement across grades and context.

Two key points deserve mention before discussing the present findings and their implications. While extensive research exists on parental involvement, few studies have

adopted the same definition or measures making it difficult to compare the findings across studies. Thus, while the following sections discuss how the present findings are consistent or inconsistent with past findings, these comparisons are difficult to assess and not always clear.

Second, as previously mentioned, the reliability estimates for home-based and school-based parental involvement were lower than desired. I pursued this issue both analytically and theoretically but the data in ECLS-K does not lend itself to developing precise and highly reliable measures of parental involvement. These composite scales are lower than desired with the lowest alpha being .56 and the highest being .70. Low reliability estimates make it more difficult to detect associations because of measurement error. While this is a limitation of the present study, it is a limitation present in most studies of parental involvement, as the construct and how it is defined often has similarly low to moderate measures of reliability. Even with moderate reliability estimates, several findings emerged in the present study. While many of these findings only translate to a small effect size, they again remain consistent with past research on predictors of parental involvement.

Summary of Findings

Individual characteristics. The first research question investigated the impact of child/parent level characteristics (SES, educational expectations, barriers, marital status, social capital/parent interaction, number of siblings, race/ethnicity) on school-based and home-based parental involvement in both first and eighth grades. The present study accounted for between 14% (eighth grade) and 19% (first grade) of the variance in school-based parental involvement within schools. Additionally, the present study

accounted for around 4% of the variance in home-based parental involvement in first grade and between 8% (fostering background knowledge) and 20% (activities related to school) of the variance in home-based parental involvement in eighth grade. These modest percentages indicate that there must be other predictor variables that explain the existing amounts of variance of these forms of parental involvement, at least as it pertains to the characteristics of the students and their families in these grades. Other studies of parental involvement have been able to account for variance ranging from 3% to 29% (Driessen et al., 2005; Feuerstein, 2000), so while the amount of variance explained is relatively modest it falls within the range reported by other studies.

Parent interaction/social capital. Parent interactions/social capital produced medium to large effects across both grades and forms of parental involvement. This was the most consistent and strongest effect to emerge in the present study. Past research consistently has shown that the size of parents' social networks positively predicts school-based parental involvement (Lareau, 1987; Sheldon, 2002; Wanders et al., 2007). However, there has been more variability regarding the impact of social networks on home-based involvement. Waanders and colleagues (2007) found that the size of social networks significantly predicted home-based parental involvement. Sheldon (2002), on the other hand, using a more refined distinction between school-based and home-based social networks, found that school-based social networks did not impact home-based parental involvement while home-based social networks positively predicted home-based parental involvement.

Consistent with the much of the literature, this study found a positive association between the size of parents' social network and school-based parental involvement.

However, the study also found a positive association between the size of parents' social network and home-based parental involvement, even though the type of social network was exclusively school-based. This finding differs from what Sheldon reports in his study. Variation in definitions and measures of home-based parental involvement might explain the difference in results. The present study adopted a broader measure of home-based parental involvement definition than did Sheldon (2002), which may relate to the difference in findings of the two specific studies.

Existing research on social networks often has provided general definitions of "social networks" without acknowledging that a person can simultaneously be a part of different social networks. Thus, while researchers have investigated the impacts of social networks in the broad sense, few have looked at it in the same way as the present study did. To date, Sheldon (2002) is one of few studies that adopted a more specific, multi-faceted definition of "social network" by looking at social networks that exist within the school and outside of the school. The present study focused on social networks that exist among parents of students in the same class. Specifically, parents were asked to report how many parents of children in their child's class they interact with on a regular basis.

The findings from the present study suggest that this form of parent interaction/social capital is positively linked with both forms of parental involvement and that larger networks consistently result in stronger positive effects. For example, parents who knew one to four parents had higher levels of parental involvement than parents who knew none, and parents who knew four or more parents appeared to engage in more parental involvement than parents who knew one to four parents. Moreover, these effects were roughly the same for both forms of parental involvement and persisted over time.

An increase in the size of one's social network may indicate that someone is more supported. Researchers in many different disciplines have shown that social support has positive effects. For example, Rosenfeld, Richman, and Bowen (2000) found that students performed better academically when they perceived increased amounts of social support from parents, teachers, and friends. Therefore, it is not surprising to find that parents also experience positive outcomes when they feel increased levels of social support.

Another explanation for the linkage between increased parent interaction/social capital and increased involvement comes from the knowledge that may be acquired during such interactions. Through interaction with other parents, a parent may become more informed about school events, school information, and ultimately they may feel more equipped to help their student by becoming involved. As found by Walker and colleagues (2005), parents' feelings of self-efficacy significantly predict their level of parental involvement. Through such interaction, the effects of some parent barriers also may lessen. For example, if a parent experiences a language barrier with school staff but finds that he or she can communicate with other parents who in turn can communicate with school staff, that original parent may choose to be more involved.

Finally, it is important to note that the effects of parent/interaction were independent of the effects of socioeconomic status and race/ethnicity. In other words, this form of social capital, on average, may promote positive outcomes for children who come from historically disadvantaged backgrounds. Further examination of the effects of interaction/social capital for specific racial/ethnic and socioeconomic populations is warranted.

Race/ethnicity. Mixed findings on the impact of race/ethnicity emerged from the present study. Different racial/ethnic groups produced effects ranging from weak to strong. Some findings were consistent with past research, such as the finding that white parents reported greater levels of school-based involvement than Asian-American parents (see Huntsinger and Jose, 2009). Similarly, McWayne, Campos, and Owsianik (2008) found Hispanic parents were less involved at school than white parents due to language barriers. I found the same results for first grade but no differences emerged in eighth grade for these groups. Interestingly, African American parents showed greater parental involvement than white parents at school and at home regarding school, particularly in the eighth grade. This finding runs counter to common descriptions of African American parents being less involved in the children's education than white parents.

Another surprising finding was that Asian-American parents of eighth grade students reported less home-based parental involvement than their white counterparts. Past research has shown that Asian-American parents often are very involved with their children at home. It is possible that this discrepancy between present findings and past findings relates to how home-based parental involvement was defined and enacted in homes. As noted by Huntsinger (2009), when asked to describe their methods of home-based parental involvement, Chinese immigrant parents described more direct pedagogical approaches involving workbooks, and tutors, while White parents spoke about more play-based methods such as using board games. It is possible that the lower levels of Asian parental involvement compared to white parents reflects cross-cultural differences in how parents are involved rather than differences in how much parents are involved.

Two other unexpected findings emerged that also may relate to the present study's limited focus on cultural variation in parental involvement. First, multi-racial parents of first grade students reported greater levels of school-based and home-based involvement than their white counterparts. Second, indigenous parents of first grade students reported greater levels of home-based involvement than their white counterparts. These are relatively new categorizations of race/ethnicity in the literature, so it is possible that the present study is tapping into racial/ethnic differences that have not been previously studied. Relatively little research exists about indigenous populations and multiracial families and what they do to foster their children's academic success. If these findings are not due to reporting biases, then greater indepth study of the parental involvement of these two groups of parents is warranted.

Other findings. Four other child/parent level characteristics produced small effect sizes, though in the expected direction: marital status, number of siblings, parent barriers, and parent educational expectations. As noted previously, past research has found these characteristics to produce small effects. Consistent with past findings (e.g., Ho Sui-Chu & Willms, 1996), married parents in the present study reported greater levels of school-based involvement than did single parents. Married parents often have more flexibility in regards to taking time from work. Also, it is more common in a two-parent household versus a single parent household to have a stay-at-home mother or father.

As compared with single parents, married parents of eighth grade students reported greater levels of home-based parental involvement related to increasing background knowledge. This was not found for the other form of home-based parental involvement in eighth grade or in first grade. In contrast to the present findings, Suizzo

and Stapleton (2007) found that being married was related to increased home-based parental involvement for younger students. It is unclear why the present findings are inconsistent, although it may have to do with differences in the definitions and measures of parental involvement.

Parents with more children reported significantly less home-based involvement in eighth grade. However, number of siblings did not have a significant effect on home-based involvement in first grade nor school-based involvement in either grade. These findings are inconsistent with those by Ho Sui-Chu and Willms (1996) who found that the number of siblings significantly predicted home-based involvement with both younger and older students. As with many of these findings, it is important to note the minimal effect sizes that were produced. While technically significant, the small effect sizes indicate that number of siblings had little practical impact on parental involvement.

As for parent expectations, increased educational expectations had a positive and significant, albeit minimal, impact on all forms of parental involvement except school-based parental involvement in first grade. These findings are consistent with past research (e.g., Feuertstein, 2000; Griffith, 1998; Park & Holloway 2013). It is possible that in the first grade, parents' educational expectations are not completely formed given the age of the child.

Again, statistical significance does not equate to practical importance. Unfortunately, the minimal effect sizes produced by educational expectations suggest that this variable's impact is not much different than having no impact at all. It is possible that there lies a deeper relationship between educational expectations and parental involvement but for it to be detected parents need to be asked more about how their

expectations impact their beliefs and practices and how they communicate these expectations with their children. It also is possible that the little variation present in this variable in 8th grade limited the possible effects.

Finally, consistent with past findings by many researchers, including Feuerstein (2000), Griffith (1998) and Levine-Rasky (2009), the current findings indicated that parents who reported higher levels of SES also reported higher levels of school-based involvement, at least in the first grade. The small effect sizes produced in the present study are comparable to the effects sizes in past studies. The findings for home-based forms of parental involvement are mixed. Similar to existing research (e.g. Suizzo & Stapleton, 2007) this study found a small positive effect on parental involvement in the home that sought to promote basic knowledge but a weak, yet statistically significant, negative effect on parental involvement in the home related to school. As with the other findings previously presented, this might be linked to how home-based parental involvement was defined and measured. While this is a viable alternative, many of the existing studies asked parents about their involvement in a similar manner to the present study. The negative association between SES and home-based school related parental involvement was especially surprising.

School characteristics. The second research question investigated the impact of school level characteristics (average barriers, average parent interaction/social capital, average expectations, average SES, average number of siblings and minority composition) on school-based and home-based parental involvement in both first and eighth grade. The present study accounted for between 3% in first grade and 1% in eighth grade of the variance in school-based parental involvement across schools. Additionally,

the present study accounted for between 1% and 4% of home-based parental involvement across schools in first and eighth grades, respectively. While the present study only explained a minimal portion of variation of parental involvement across schools, it provides a benchmark for future studies using variables that had yet to be applied to this field of research. School level effects frequently are more difficult to detect than child/parent level effects because of their contextual nature. A school level effect is associated with a school rather than a parent and as such it needs to be significant over and above all child/parent effects to remain significant at the school level.

Only three school level characteristics (average expectations, average barriers, average parent interaction/social capital) significantly predicted parental involvement and all three produced small effects. The few existing studies that have included school level characteristics in their investigation of parental involvement (e.g. Feuertstein, 2000, Galindo & Sheldon, 2012) have focused on school outreach, average school SES, and school structural characteristics. None of these studies included variables pertaining to average parents' interaction/social capital, perceived barriers, or educational expectations. Thus, it is difficult to incorporate the present findings with past research on these topics.

The present study found that schools in which parents held average educational expectations were positively but weakly related to school-based parental involvement in first grade, but not for eighth grade. The present findings suggest that there is a contextual phenomenon occurring in schools with average educational expectations. Parents in these schools are becoming more involved in their children's schooling regardless of their personal beliefs and educational expectations. Perhaps these schools

foster a certain atmosphere that encourages parents to become involved. It is possible that it is has become such a norm that even parents with low educational expectations still feel in the minority if they are not attending school events.

While the effects of parent interaction/social capital were strong and consistent at the child/parent level, parent interaction/social capital produced minimal effects at the school level. Specifically, schools with average parent interaction/social capital had a minimal negative relationship with home-based parental involvement in first grade and a minimal positive relationship with school-based parental involvement in eighth grade. These findings are contextual effects and as such it is not as surprising that the effects are small.

Finally, the present study found that that schools with average numbers of barriers were negatively but weakly related to home-based parental involvement related to school in eighth grade. Again, this supports the presence of a contextual effect in which the schools with, on average, more parental barriers effectively reduces the amount of parental involvement occurring at home, regardless of a parent's personal number of barriers reported.

Effect size comparisons. The third research question compared the coefficients expressed in standardized units of the dependent variable produced by child/parent and school level predictors of the two forms of parental involvement in first and eighth grade. The present study performed exploratory analyses to examine this question as little research previously existed.

Among all the predictor variables, parent interaction/social capital produced the largest effect sizes and remained stable across grade and type of parental involvement.

This is a unique finding as often the predictors that have produced large effects in first grade produce small, if any, effects in eighth grade. Often the predictors of parental involvement are different at different ages. The consistency in the effects of parent interaction/social capital in the present study suggests the importance of this predictor variable and the need for further investigation.

Race/ethnicity also had effects across both grades and types of involvement. However, there were no instances in which the same racial/ethnic group had a similar effect on the same form of parental involvement in first grade as it did in eighth grade. Again, the variability of these effects may be related to the lack of cross-cultural variation accounted for by the definitions of parental involvement.

Virtues and Limitations

Virtues. There are three main methodological strengths of the present study. First, I examined the predictors of two forms of parental involvement (school-based and home-based) using a longitudinal approach. Most other studies have focused on predictors of parental involvement in either younger students or older, but not both. By including both ages in this study, I was able to interpret how predictors of parental involvement evolve as children age.

Second, the present study included school level characteristics in addition to child/parent level characteristics. As previously noted, only a handful of studies have included school level characteristics when assessing the predictors of parental involvement. Moreover, the present study included school level characteristics that have not been included in these studies, thereby extending the literature on school level characteristics as predictors of parental involvement.

A final strength of the present study was that it addressed all of these topics while using a statistical procedure that accounts for the nesting of data (e.g. students in schools). Many of the past studies used OLS Regression for analyzing data. Multi-level modeling analysis, such as Hierarchical Linear Modeling (HLM) that was used in the present study, is methodologically superior because it partitions the variance for different units of analysis and provides accurate estimates of error (Raudenbush & Bryk, 2002).

Limitations. There are four key limitations of the current research. The first has to do with the external validity of the results. The present study used a pre-existing data set that was created in 1998-1999. It has now been over 15 years since the data was collected meaning that the data may not capture new trends and patterns in parental involvement. The present findings are generalizable to those who were parents of first or eighth graders in the late 1990s and thus the present findings may not extend as well to the newer trends with parental involvement. In fact, since that time, there has been a shift in the demographic make-up of the nation. For example, Chinese and Hispanic populations have experienced enormous growth. It is possible that new cultural practices have come into existence or that the relationship among cultural practices and parental involvement have continued to evolve. While these trends might share some commonalities with the current data, data of the present study but they also may have new nuances that deserve to be further investigated.

Over the 15 years since data collection occurred, several new advances and policies have been enacted. There has been continual technological advancement that has greatly impacted how students learn, how instructors teach, and how anyone goes about learning knew information. The internet is no longer a slow, tedious, noisy process but

rather an always-present resource that can be utilized by anyone for any reason. Additionally, the way in which parents utilize technology to inform or facilitate parental involvement also has evolved. Many school districts now have websites that alert parents to student grades, student attendance, and existing class assignments. Parents also often have access to teachers' email addresses and can contact them with questions or concerns. Furthermore, many websites exist that provide tutorials on various academic topics that parents can use to help students with homework.

Another change since data collection occurred concerns policy. No Child Left Behind (NCLB) was passed which greatly emphasized the role of parental involvement in helping to promote student academic achievement. More recently, Common Core has become a household term in which the curriculum is rapidly changing across the nation and the ways in which parents help their students might be in tow.

A second limitation is the presence of a moderately low internal consistency for the outcome variables. Parental involvement is a difficult construct to measure. Past research often has included measures of parental involvement that have low reliability. Unfortunately, the present study is no different in this regard. Factor analyses were used to support the creation of these outcomes measures to ensure that the outcome measures were grounded in theory and statistical measurement.

A third limitation was that the items pertaining to parental involvement that were used by the researcher resulted in parental involvement being conceptualized rather broadly and with little cross-cultural awareness or variation. Much of this was due to the restrictions imposed by using a pre-existing data set rather than being able to design the questions. In reality, parental involvement is a complex construct that can be defined

differently depending on age, setting, and culture. As researchers continue to investigate parental involvement, hopefully agreement will be reached about a unified definition of parental involvement and consensus can be reached about how broad or specific researchers' definitions and measures should be.

A fourth limitation was the limited definition of social capital used in the present study. As previously mentioned, cultural capital was not included in the present study. Rather, the definition of social capital was limited to the quantity of same-classroom parents' one reports interacting with on a regular basis. It is likely that there exists an interaction between the presently defined form of social capital and cultural capital such that parents who were identified in the present study as having high levels of social capital may or may not have high levels of cultural capital. Future research should further investigate the association between cultural capital and social capital as it relates to parental involvement.

Implications

The present findings remain valuable and have implications for both research and practice. The findings from the present study suggest that several individual and school level characteristics significantly predict home-based and school-based parental involvement in both first and eighth grade. The effect of the various predictor variables does vary, however.

Implications for Educational Practice

Parent interaction/social capital. Parent interactions/social capital produced the largest effect sizes of all characteristics assessed. Specifically, this characteristic

produced medium to large effect sizes across both grades and forms of parental involvement.

Presently, those in education are very focused on the school-family relationship as it relates to student education. However, little emphasis is placed on the parent-to-parent relationship. The results from the present study suggest that the parent-to-parent relationship has a meaningful effect on increasing parental involvement at home and at school. Future research might investigate what it is about the parent-to-parent relationship that increases parental involvement. As prior research notes, increased parental involvement is linked with better educational outcomes. The fact that this finding remains true across age and setting is important as we are always looking for ways to help stimulate parental involvement.

It might be hard to conceptualize what schools can do to foster parent-to-parent relationship. Frequently there are parents attending some school events, such as back-to-school night, school concerts, school plays, even volunteering in classrooms. Many these events are opportunities where the school can easily promote parent interaction without requiring a significant amount of energy or planning. For example, if teachers asked parents to complete a group assignment during back-to-school night, this would likely facilitate interaction. Similarly, if a school staff member asked all attendees at a school concert to turn to their neighbor and introduce them, again this would likely spur some interaction. Another idea is for parents to be encouraged to write down the number of three or four other parents that they can call with questions. Hopefully the first step of asking for the number would be break the ice and would promote future interaction.

Other ideas exist that might take more work on the school's part but are certainly feasible. One idea is to have parent groups meet to facilitate a similar form of camaraderie that often is formed during extra-curricular activities. Alternatively, schools may choose to begin implementing a buddy program for parents of new students. Similar to what schools often do with new students, the hope would be to provide more ease and comfort during this potentially difficult transition.

School psychologists and counselors are equipped with knowledge and training that allow them to help support schools in the facilitation of parent interaction. These professionals are trained in the art of consultation as well as program design, implementation, and evaluation. These skills allow school psychologists and counselors to become primary players in helping schools to design various programs fostering parent interaction and to determine what is working and what needs to be remodeled. Furthermore, school psychologists come forth with knowledge about evidence-base practices and can help train teachers and other school staff in how they can facilitate parent interaction during events that are already happening at their schools.

Implications for Future Research

A goal of the present study was expand the literature to incorporate the various predictors of school involvement. The present study assessed predicting different forms of parental involvement in different ages. Future studies should work to form a more unified approach to how we define and measure parental involvement. Unfortunately, many people are researching parental involvement but have defined it and measured it dramatically differently. It is quite difficult for anyone to make sense of the existing literature on the effects of parental involvement and compare different types of parental

involvement when each piece of research has a different definition. It also may be informative for future research to look at the changes in parental involvement across major school transitions, such as entering and exiting middle school.

The present findings emphasized the importance of parental interaction/social capital in predicting two forms of parental involvement across ages after controlling for races/ethnicities, SES, marital status, number of siblings, parent barriers, and educational expectations. As previously mentioned, the effects of average parent interaction/social capital were consistent in predicting parental involvement across races/ethnicities and socioeconomic backgrounds. Future research needs to further investigate the interactions among these variables to determine if, for example, parent interaction/social capital has the same effect on parental involvement for parents coming from low or high socioeconomic backgrounds as it does from those in the present study with average socioeconomic background.

Additionally, we have limited knowledge about these interactions and what is so important about them. Future research should further investigate parent interactions to determine whether the quality of interactions matters in addition to the quantity of interactions. Perhaps there are specific mechanisms going on in certain parent interactions that are noteworthy. This could be further explored by applying multilevel analyses to a three-tier model in which parent interactions within communities are also explored.

Additionally, future research should further investigate the racial/ethnic differences across different forms of parental involvement at different ages. The present study found inconsistent findings related to race/ethnicity. Future research would benefit

from providing more in depth analyses to determine how definitions of parental involvement along with predictors of parental involvement vary by race/ethnicity rather than being restricted to comparing all races/ethnicities to one reference group and using one definition of parental involvement, such as was done in the present study.

Finally, future research should continue to investigate other school level characteristics as predictors of parental involvement. Unfortunately, the present study identified only three significant predictors of parental involvement and all produced small effect sizes. Most of the school level variables were aggregates of the child/parent level data which resulted in the analyses being very conservative and producing limited effects. Future research should investigate other school level variables that are less compositional and contextual in nature and more programmatic such as the presence of a specific intervention in a school. Other school level variables to be studied in the future include leadership style, teacher attitudes, and whether a school has a designated parental coordinator.

Conclusion

Given our nation's focus on improving student achievement, it is essential that we learn about what aspects of daily life impact a student's achievement. Not only do we want to increase our students' academic achievement for their personal gain, but it also greatly impacts school outcomes.

The importance placed on increasing students' academic performance makes it even more of a necessity to determine what factors impact academic performance. Increased parental involvement has long been associated with higher student achievement in elementary, middle and high school (e.g., Epstein & Sheldon, 2006; Fan & Chen,

2001; Galindo & Sheldon, 2012). The findings of the present study indicate that several child/parent level characteristics and a few school level characteristics produced significant effects on home-based and school-based involvement in both first and eighth grades. It is hoped that the present findings will help inform future research and provide new directions for research that in turn will hopefully inform interventions aimed at increasing parental involvement at home and in school.

Appendix A. Literature Review

Author Name (Year)	Definition of Parental Involvement	Notable Findings
Anderson and Minke (2007)	1. Parental involvement at School Ongoing* a. Helped in child's classroom 2. Parental involvement at School Events* a. Went to parent-teacher conference 3. Parental involvement at Home* a. Spend time working on number skills	1. Specific invitations from teachers had largest effect on three types of parental involvement in kindergarten through fifth grade
Archer-Banks and Behar-Horenstein (2008)	1. School-based involvement a. Supporting child's interests and efforts b. Involved in PTA and school booster clubs 2. Home-based involvement a. Assisting with homework b. Seeking tutoring assistance for child	1. African-American parents of middle school students reported varying levels and types of parental involvement performed.
Arnold, Zeljo, Doctoroff, and Ortiz (2008)	1. One scale on parental involvement completed by teacher a. Has parent called teacher recently b. Has parent stopped by recently c. Comfort level talking to parent about hypothetical problem with his or her child d. Frequency in which parents has asked questions or made suggestions about child e. Extent to which parent encourages child's positive attitude toward	1. SES and single-parent status related to parental involvement in parents of preschool-aged children

	education f. Frequency parent has volunteered in classroom g. How involved is parent in child's education and classroom h. Importance of education to family	
Bartel (2010)	1. Involvement in home-based activities a. Supervising homework b. Practicing spelling c. Reading with children 2. Involvement in school-based activities a. Helping out at school b. Attending PTA meetings c. Volunteering on field trips	1. Findings indicated that predictors of parental involvement for parents of lower SES backgrounds did not differ from those cited in literature as relevant for parents of higher SES
Cooper (2010)	1. School-based parental involvement a. Attended PTA meeting b. Attended open-house c. Attended parent advisory group or policy council d. Attended school or class event e. Attended parent-teacher conference f. Volunteered at school g. Participated in fundraising h. Contacted teacher or school	1. Found significant associations between school-based parental involvement and five school characteristics including two forms of outreach to parents, school SES, class size and school size
Deslandes and Bertrand (2005)	1. Parental involvement at home* a. Educational activities at home 2. Parental involvement at school* a. Frequency of going to child's school b. Frequency of interactions with	1. Parents' perceptions of adolescents' invitations in the academic domain and social domain related to involvement at home. Parents' perceptions of teachers' invitations impacted parental involvement

	adolescents at school and with teachers	at school.
Driessen, Smit, and Sleegers (2005)	1. School-initiated parental involvement a. Attention to provision of information to parents b. Attention to attachment of parents to school c. Attention to take parents seriously 2. Parent-initiated parental involvement a. Help with homework b. Ask for information about school matters c. Leisure activities of family d. Rules at home and school e. Choice of school for secondary education	1. Parents visited schools less and reported helping with homework less often as the percentage of minority disadvantage students increased
Drummond and Stipek (2004)	1. One scale assessing involvement regarding math, reading, homework, and knowing what child is learning	1. Low-income parents reported greater amounts of home-based involvement than school-based parental involvement
Eccles and Harold (1993)	1. Provide opportunities 2. Direct instruction and involvement 3. Monitor schoolwork 4. Help with schoolwork 5. Volunteer 6. Support school activities 7. Attend conferences 8. Request information	1. Proposes a model that describes predictors of parental involvement by parents of adolescents

	9. Participate in school governance	
Feuerstein (2000)	1. Students talk with parents about school 2. Parent contact with school 3. Parent volunteerism 4. Parent expectations 5. Parent participation in PTO 6. Parents talk with student about school 7. Parents visit school 8. Structure of home-learning environment 9. Involvement in grade-placement decisions	1. Examined school characteristic as predictors of parental involvement and found school outreach produced the strongest effects on predicting parental involvement in parents of eighth grade students
Galindo and Sheldon (2012)	1. Family involvement at school a. Attending open house or back-to-school night b. Attending meetings of PTA, PTO, or parent-teacher-student organizations c. Attending meetings of parent advisory group or policy council d. Attending parent-teacher conferences or meeting with teachers e. Attending school or class events f. Acting a volunteer at school or on a committee g. Fundraising for school 2. Family involvement in educational activities at home a. Reading books with child b. Telling stories to child c. Singing songs with child d. Doing arts and crafts	1. School outreach was associated with school-based parental involvement in parents of kindergarteners. Albeit significant, the findings produced small effect sizes

	e. Child doing chores f. Playing games or doing puzzles g. Talk about nature or do science projects h. Play sports i. Child looked at picture books outside of school j. Child read or pretended to read k. Built things together or play with construction toys	
Garcia Coll, Akiba, Palacios, Bailey, Silver, DiMartino, and Chin (2002)	1. Values concerning parental involvement a. Views on role in child's education 2. School-based involvement a. Parents' involvement in child's school in general b. Had parents' initiated meeting with child's teacher 3. Home-based involvement a. Parents' exertion of control over child's behavior at home b. Implementation of child curfews	1. Found differences in parental involvement (all three forms) across three immigrant groups, Portuguese, Dominican, and Cambodian
Green, Walker, Hoover-Dempsey, and Sandler (2007)	1. Home-based involvement* a. Keeping eye on child's progress 2. School-based involvement* a. Attending PTA meetings	1. Found parental role activity beliefs, parental self-efficacy, specific child invitations, and parental reports of time and energy impacted both home-based and school-based involvement. Also found age related differences in parental involvement.

Griffith (1998)	1. Involved parents a. Volunteering at school b. Attendance in meetings, open-houses, back-to-school nights	1. Found race/ethnicity and parent's expectations for their children's educational attainment were strongest predictors of parental involvement performed by parents of elementary school students
Grolnick, Benjet, Kurowski, and Apostoleris (1997)	1. Parent-School Interaction (child, parent, and teacher report)* a. Visiting school b. Attending school events c. Talking with teacher d. Volunteering 2. Cognitive involvement (child and parent report)* a. Went to library with child b. Talked about current events with child 3. Personal Involvement (child and parent report)* a. Parents' interest and knowledge about school activities	1. Found several predictors of parental involvement in parents of elementary-aged students. Family SES was a strong predictor of school and cognitive involvement. Gender differences existed in relation to social support.
Hayes (2011)	1. Home involvement* a. Talk to child about school experiences b. Know how child is doing in school 2. School involvement* a. Belong to PTA at child's school b. Volunteer at child's school	1. Found differences in predictors of parental involvement for parents of low SES versus high SES backgrounds, especially related to parents' educational aspirations
Herman and Yeh (1983)	1. Parent participation in school (principals' reports) a. Number of parent volunteers	1. Findings suggested that contact with teachers ultimately increases involvement in parents of elementary school students

	b. Number of volunteer hours c. Number of parent visits to the school per school enrollment d. Parent reports of number of activities they participated in (aide, volunteer, PTA, attendance at parent meetings) e. Parents' interest in the school f. Teachers' perceptions of parent attendance at school events	
Ho Sui-Chu and Willms (1996)	1. Home Discussion a. Talk with mother b. Discuss school program c. Talk with father d. Discuss activities 2. School Communication a. School contacts parents b. Parents contact school 3. Home Supervision a. Limit TV time b. Limit going out c. Monitor Homework d. Home after school 4. School Participation a. Volunteer at school b. Participate in PTO	1. Found several predictor of parental involvement in parents of eighth grade students across all four types of involvement
Hoover-Dempsey, Bassler, and Brissie (1987)	1. Parent-teacher conferences 2. Parent volunteers in classroom 3. Parent tutoring of children on homework 4. Parent home instruction	1. Found school structural characteristics impacted several of the school-based involvement

	5. Parent support of teacher	
Hoover-Dempsey, Bassler, and Brissie (1992)	1. Parents help with homework 2. Engage in educational activities with children 3. Parents do volunteer work at school 4. Telephone calls with parents 5. Parents attend scheduled conferences	1. Findings indicated that demographic characteristics and parent efficacy beliefs related to various forms of parental involvement in parents of kindergarten through fourth grade students
Huntsinger and Jose (2009)	1. Parental involvement in school activities a. Contributes material to classroom b. Helps teacher prepare materials for class c. Volunteers in classroom d. Chaperones on fieldtrips e. Serves on school committees f. Attends open houses regularly g. Attends parent-teacher conferences h. Talks informally with teacher	1. Found greater levels of school-based parental involvement reported by White parents than Chinese immigrant
Lareau (1987)	1. Home involvement a. Read to child b. Reviewing child's homework 2. School involvement a. Communicate concerns with teacher b. Parent-teacher conferences c. Attending open houses d. Volunteering in classroom	1. Found differences in parental involvement across levels of SES
Levine-Rasky (2009)	1. Membership in PTA 2. Volunteering in classrooms or office 3. Fundraising 4. Committee work	1. Found differences in parental involvement in parents coming from different economic backgrounds

	5. Coordination of special events	
McWayne, Campos, and Owsianik (2008)	1. School-based involvement* a. Volunteering in classroom b. Going on class trips c. Meeting other parents to plan events 2. Home-based involvement* a. Creating space for learning at home b. Providing learning opportunities for child in the community c. Keeping regular routines for child d. Sharing stories about parent's own educational experiences 3. Home-school conferencing* a. Talking with teacher about learning difficulties and accomplishments b. Discussing with teacher ways to promote learning at home c. Exchanging written notes or phone calls with teacher	1. Found race/ethnicity difference in parental involvement of fathers but not mothers all from low-SES backgrounds
Overstreet, Devine, Bevans, and Efreom (2005)	1. School involvement a. Visited classroom b. Attended events at school c. Member of PTO d. Frequency of school visits	1. Learned that perceptions of school receptivity explained significant amounts of variance when explaining school involvement
Park and Holloway (2013)	1. School-based involvement a. Attendance at school meetings b. Attendance at parent-teacher conferences c. Attendance at PTA meetings	1. Found several significant patterns between demographics, parental beliefs, perceptions of school outreach, and the three forms of parental involvement for parents of kindergarteners through twelfth

	d. Attendance at school events e. Engagement in volunteer activities at school 2. Homework involvement composite a. Study place designated at home b. Existence of homework rules at home c. Checking homework 3. Educational expectations and college planning composite a. Expectations about future schooling b. Intentions and plans on funding college	graders. Effect sizes were small, however.
Pena (2000)	1. Attending PTO meetings 2. Attending school-sponsored activities 3. School committees 4. Attending back to school night and other similar events	1. Found several predictors of parental involvement for Mexican-American parents
Rodriguez and Lopez (2003)	1. Helped children with school work 2. Volunteer 3. Attend parent-teacher conferences 4. Fundraising 5. Serve as room mother 6. Attend parent advisory committee meetings 7. Attend school-sponsored functions 8. Attend school board meetings	1. Noted patterns of school-based parental involvement among Mexican-American parents. The most common form was attending parent-teacher conferences
Rowley, Helaire, and Banerjee (2010)	1. School involvement* a. Attending open houses b. Talking with teacher c. Attending PTO meetings 2. Home involvement*	1. Found parental beliefs and demographic factors impacted home- and school-based parental involvement for Black mothers

	a. Helping child with homework b. Practiced spelling skills with child c. Listened to child read	
Ryan, Casas, Kelly-Vance, Ryalls, and Nero (2010)	1. Involvement at home* a. Help your child with schoolwork b. Read with your child 2. Involvement at school* a. Attend student-teacher conferences b. Talk to child's teacher	1. Home-based and school-based involvement was not significantly different across the three race/ethnicity groups
Sheldon (2002)	1. Involvement at home a. Read with your child b. Talk with child about what he/she is learning c. Work with child on school subjects at home d. Watch television with child e. Do homework with child f. Ask child about progress in school 2. Involvement at school a. Respond to teacher request for help b. Attend school events c. Talk to child's teacher d. Volunteer in classroom or school	1. Various forms of social networks impacted parents of elementary school students involvement at home and school
Smock and McCormick (1995)	1. Parent-child interaction with homework 2. Parent-school staff interactions with meetings in school	1. Parents' perceptions about their child's achievement and beliefs about the school system were significantly associated with involvement. Parents had children between kindergarten and twelfth grade

Suizzo and Stapleton (2007)	1. Verbal activities a. Reading to child b. Telling stories to child c. Reading outside of school d. Looking at picture books e. Singing songs with child 2. Non-verbal activities a. Child doing chores b. Playing games with child c. Doing art with child d. Building things with child e. Doing sports with child f. Learning about nature 3. Outside-home activities a. Child visiting library b. Child attending sports events	1. Found several predictors of home-based involvement in parents of kindergarten students
Sy, Rowley, and Schulenberg (2007)	1. Home literacy involvement a. Read to child b. Tell stories to child 2. Home activity involvement a. Build things with child b. Talk about nature or do science c. Projects with child d. Play games with child 3. Parent-teacher conference 4. School participation a. Volunteer in classroom b. Attend back to school night c. Attend school event 5. Non-home educational activities	1. Found differences in parental involvement between Asian-American parents and European-American parents

	a. Take child to zoo, aquarium b. Take child to library c. Take child to museum, art gallery or historical site	
Turney and Kao (2009)	1. Parental involvement Global Scale a. Attended an open house or back-to-school night b. Attending a meeting of PTA, PTO, or parent-teacher-student organization c. Attended parental advisory group or policy council d. Attended a parent-teacher conference e. Attended school or class event f. Volunteered at school or served on committee g. Participated in fundraising	1. Found differences in parental involvement across minority and non-minority parents as well as immigrant and non-immigrant parent groups
Waanders, Mendez, and Downer (2007)	1. Home-based involvement* a. Activities to promote learning at home 2. School-based involvement* a. Volunteering in the classroom b. Going on class trips with child 3. Home-school conferencing* a. Assessed communication between school personnel and parents regarding child's problems and accomplishments in classroom	1. Found contextual factors impacted school-based involvement by low SES parents. Also found that home-based involvement by low-SES parents was related to personal beliefs and social networks
Walker, Ice, Hoover-Dempsey, and Sandler (2011)	1. Home-based involvement* a. Help child with homework 2. School-based involvement*	1. Found role-construction beliefs and invitations for involvement by the teacher predicted home-based and school-based

	a. Helped out at child's school	involvement in Latino parents
Williams and Sanchez (2012)	1. Participation at school 2. Being there outside of school 3. Communication 4. Parent aspirations 5. Incorporating community members into lives of children	1. Parents' descriptions of involved parents aligned well with Epstein's (2001) conceptualization of parental involvement
Wong and Hughes (2006)	1. School-based involvement a. Visited child's school for special event b. Attended a parent-teacher conference c. Has been invited to a parent-teacher conference d. Has been invited to child's school for special event e. Has attended PTA or PTO meetings f. Volunteers at child's school	1. Found both between and within group differences in school-based parental involvement among parents of minority backgrounds

Note. Studies varied in the extent to which they provided the specific forms of parental involvement or composites. Variation also existed regarding whether they provided information beyond the name of the composites. This table reports all information made available to the reader. Studies that provided only samples of specific parental involvement items and not the entire set are designated with an asterisk. Unless otherwise indicated, parents provided ratings of parental involvement.

Appendix B. Variables

Child/Parent Level Characteristics		
Present Study Variable Names	ECLS-K Variable Names	
	1st Grade	8th Grade
School-Based Parental Involvement		
Attended Open House	P4ATTENB	P7ATTENB
Attended PTA Meeting	P4ATTENP	P7ATTENP
Attended Parent Conference	P4PARGRP	P7PARGRP
Attended school event	P4ATTENS	P7ATTENS
Acted as school volunteer	P4VOLUNT	P7VOLUNT
Participated in fundraising	P4FUNDRS	P7FUNDRS
1st Home-Based Parental Involvement		
How often read to child	P4READBO	---
How often practice numbers	P4RDWRNM	---
How often tell child stories	P4TELLST	---
How often sing songs with child	P4SINGSO	---
How often play games with child	P4GAMES	---
How often teach child nature	P4NATURE	---
How often build things with child	P4BUILD	---
How often help child do art	P4HELPAR	---
8th Home-Based Parental Involvement - Background Knowledge		
Frequently attend non-school events	---	P7FRQPLY
Frequently take day trips	---	P7FRQTRP
Frequently work on a hobby or sport	---	P7FRQHBY
Frequently go to Restaurants	---	P7FRQRST
8th Home-Based Parental Involvement - Related to School		
How often check homework	---	P7CHKHWK
How often talk about school day	---	P7OFTTLK
How often talk about grades	---	P7TLKGRD
How often talk about school activities	---	P7TLKSCH
SES	W1SESL	W8SESL
Parent Barriers*		
Inconvenient meeting time	P4MEETTM	P7MEETTM
No child care	P4NOCARE	P7NOCARE
Cannot get off of work	P4CANTGT	P7CANTGT
Safety going to school	P4SAFEGO	P7SAFEGO
Not feel welcomed by school	P4NOTWEL	P7NOTWEL
Problems with transportation	P4PROBLM	P7PROBLM

Language problems	P4LANGOE	P7LANGOE
Don't hear of interesting things	P4THINGS	P7THINGS
Race/Ethnicity*	W1RACETH	W8RACETH
Parent Interaction/ Social Capital*	P4PCLASS	P7PCLASS
Educational Expectations	P4EXPECT	P7EXPECT
Marital Status	P4CURMAR	P7CURMAR
Number of Siblings	P4NUMSIB	P7NUMSIB

Note.* = this variable was transformed into a dummy-coded variable in the present study; all aggregated variables were from aggregated from the child/parent level.
Appendix B continued on the next page.

Appendix B continued. Variables

School Level Characteristics		
Present Study Variable Names	ECLS-K Variable Names	
	1st Grade	Eighth Grade
Average SES	Aggregated Variable	Aggregated Variable
Average Parent Interaction/Social Capital	Aggregated Variable	Aggregated Variable
Average Parental Barriers	Aggregated Variable	Aggregated Variable
Average Educational Expectations	Aggregated Variable	Aggregated Variable
Average Number of Siblings	Aggregated Variable	Aggregated Variable
Schools with more than 50% Minorities*	S4MINOR	S7MINOR

Note.* = this variable was transformed into a dummy-coded variable in the present study; all aggregated variables were from aggregated from the child/parent level.

Appendix C. Reliability of Composite Variables

Child/Parent Level Characteristics		
	1st Grade	8th Grade
	Overall α (α without item)	**Overall α** (α without item)
School-Based Parental Involvement	**.61**	**.64**
Attended Open House	(.54)	(.59)
Attended PTA Meeting	(.58)	(.59)
Attended Parent Conference	(.61)	(.63)
Attended school event	(.55)	(.60)
Acted as school volunteer	(.52)	(.60)
Participated in fundraising	(.57)	(.60)
1st Home-Based Parental Involvement	**.70**	---
How often read to child	(.67)	---
How often practice numbers	(.68)	---
How often tell child stories	(.66)	---
How often sing songs with child	(.69)	---
How often play games with child	(.67)	---
How often teach child nature	(.67)	---
How often build things with child	(.68)	---
How often help child do art	(.66)	---
8th Home-Based Parental Involvement - Background Knowledge	---	**.56**
Frequently attend non-school events	---	(.48)
Frequently take day trips	---	(.43)
Frequently work on a hobby or sport	---	(.50)
Frequently go to Restaurants	---	(.53)
8th Home-Based Parental Involvement - Related to School	---	**.67**
How often check homework	---	(.76)
How often talk about school day	---	(.59)
How often talk about grades	---	(.52)
How often talk about school activities	---	(.52)
Parent Barriers	**.46**	**.50**
Inconvenient meeting time	(.36)	(.38)
No child care	(.43)	(.47)
Cannot get off of work	(.39)	(.39)
Safety going to school	(.45)	(.49)
Not feel welcomed by school	(.45)	(.48)
Problems with transportation	(.44)	(.49)

Language problems	(.45)	(.49)
Don't hear of interesting things	(.44)	(.49)

Appendix D. Factor Analyses for Parental Involvement Outcome Variables

First Grade		
	Component	
	1	2
Attended open house	.02	.61
Attended PTA Meeting	.01	.49
Attended parent conference	-.01	.34
Attended school event	-.01	.62
Acted as school volunteer	.00	.69
Participated in fundraising	-.02	.59
How often read to child	.56	-.19
How often practice numbers	.54	-.11
How often tell child stories	.61	-.13
How often sing songs with child	.50	-.12
How often play games with child	.60	-.08
How often teach child nature	.59	-.13
How often build things with child	.57	-.03
How often help child do art	.61	-.10
	Component	
	1	2
Total Initial Eigenvalue	2.84	1.74
Percent of Variance	20.29	12.44
Cumulative Percent	20.29	32.73
Rotation Method	Oblimin with Kaiser Norm.	Oblimin with Kaiser Norm.

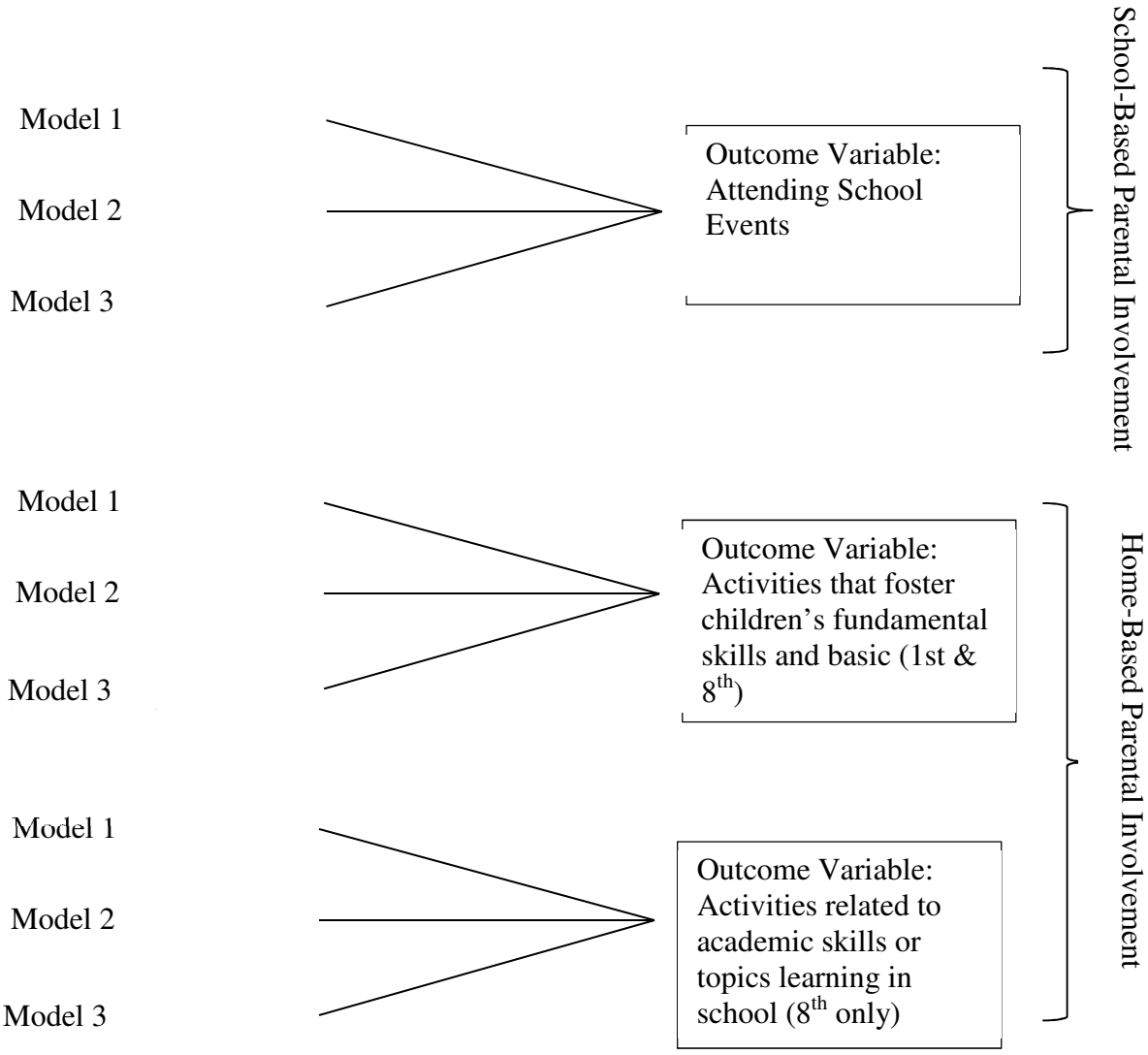
Eighth Grade			
	Component		
	1	2	3
Attended open house	-.48	.34	.09
Attended PTA meeting	-.46	.45	.26
Attended parent conference	-.31	.39	.40
Attended school event	-.45	.41	.11
Acted as school volunteer	-.48	.39	-.01
Participated in fundraising	-.48	.38	.04
Frequently attend non-school events	.43	.08	.48
Frequently take day trips	.39	.04	.61
Frequently work on a hobby or sport	.45	.04	.42
Frequently go to restaurants	.26	.06	.50
How often check homework	.24	.37	-.18

How often talk about school day	.50	.53	-.18
How often talk about grades	.51	.57	-.27
How often talk about school activities	.55	.58	-.26

	Component		
	1	2	3
Total Initial Eigenvalue	2.67	2.02	1.48
Percent of Variance	19.12	14.45	10.56
Cumulative Percent	19.12	33.58	44.14
Rotation Method	Oblimin with Kaiser Norm.	Oblimin with Kaiser Norm.	Oblimin with Kaiser Norm.

Appendix E. Visual Illustration of Analyses

Analyses Conducted for Both First and Eighth Grade Data



Appendix F. Analytic Plan for Each Research Question

All unconditional models were investigated to ensure there was significant variance in the outcome variables across schools. This provided a basis to continue and investigate the research questions of interest

RQ 1: To what extent do individual parental characteristics of SES, expectations, barriers, marital status, social capital, number of siblings and race/ethnicity help to explain parental involvement in 1st and 8th grade across schools?

Analytic Plan: For both first and eighth grade data, I assessed the effects produced by the child/parent level variables in the two school-based parental involvement models and three home-based parental involvement models.

RQ2. To what extent do school characteristics of barriers, social capital, expectations, SES, and minority composition explain the variability of parental involvement in first and eighth grades across schools?

Analytic Plan: For both first and eighth grade data, I assessed the five between-school models, one for each outcome variable.

RQ3. How do the school and individual characteristics that explain the variability of school-based parental involvement and home-based parental involvement in first grade differ from those that explain the variability of school-based parental involvement and home-based parental involvement in eighth grade?

Analytic Plan: I converted all coefficients to the standardized units of the dependent variable. I compared these effect sizes produced by first and eighth grade

between-school models for school-based parental involvement and then for home-based parental involvement.

Appendix G. Correlation Matrix: 1st Grade Child/Parent Level

Child/Parent Level Predictors	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. School PI	---														
2. Home PI	.19	---													
3. SES	.41	.08	---												
4. 1-2 Barriers	-.07	-.03†	ns	---											
5. >2 Barriers	-.24	-.05	-.19	.17	---										
6. African Am.	-.16	Ns	-.24	.03†	.08	---									
7. Hispanic	-.11	-.09	-.26	-.04	.11	-.22	---								
8. Asian Am.	-.08	-.03†	.05	ns	ns	-.08	-.08	---							
9. Indigenous	-.04	Ns	-.07	-.02†	ns	-.07	-.07	-.03†	---						
10. Multi-racial	ns	Ns	.04	ns	-.02†	-.06	-.07	-.03†	-.02†	---					
11. Interact (1-4)	.13	.03†	.10	ns	-.04	-.07	ns	.ns	-.03†	ns	---				
12. Interact (> 4)	.27	.13	.19	-.09	-.14	-.12	ns	-.03†	.02†	ns	-.45	---			
13. Parental Expect.	.15	.11	.23	-.04	-.03†	ns	.12	.06	-.03†	.02†	.03†	.12	---		
14. Marital Status	-.23	-.03†	-.35	.05	.13	.34	-.03†	-.07	.03†	ns	-.10	-.13	-.12	---	
15. # Siblings	-.11	Ns	-.11	-.03†	.06	.09	.05	ns	.08	ns	-.04	ns	-.04	-.06	---

Note. Unless otherwise indicated, all correlations reached significance at $p \leq .001$. Those with † reached significance at $p \leq .10$

Appendix H. Correlation Matrix: 1st Grade School Level

School Level Predictors	1.	2.	3.	4.	5.	6.
1. Avg. SES	---					
2. Avg. Interaction	.41	---				
3. Avg. Barriers	-.37	-.30	---			
4. Avg. Parent Expectations	.24	.21	ns	---		
5. Avg # of Siblings	-.19	-.08†	.17	ns	---	
6. Schools with >50% Minorities	-.49	-.21	.36	.14	.16	---

Note. Unless otherwise indicated, all correlations reached significance at $p \leq .001$. Those with † reached significance at $p \leq .10$

Appendix I. Correlation Matrix: 8th Grade Child/Parent Level

Child/Parent Level Predictors	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. School PI	---															
2. Home PI- Rel. to Sch.	.11	---														
3. Home PI – Back. Know.	.23	.19	---													
4. SES	.21	-.04	.25	---												
5. 1-2 Barriers	-.05	-.03†	-.06	-.07	---											
6. >2 Barriers	-.08	-.05	-.12†	-.12	.29	---										
7. African Am.	-.03†	.06	-.09	-.21	.03†	.05	---									
8. Hispanic	-.04	Ns	-.12	-.18	ns	.08	-.22	---								
9. Asian Am.	Ns	-.09	-.05	.06	ns	.06	-.08	-.08	---							
10. Indigenous	Ns	Ns	-.05	-.06	ns	ns	-.07	-.07	-.03†	---						
11. Multi- racial	.02†	Ns	.04	.04†	.02†	ns	-.07	-.07	-.03†	-.02†	---					
12. Interact (1-4)	-.03†	-.02†	Ns	ns	ns	.04	.02†	ns	.03†	ns	ns	---				
13. Interact (> 4)	.24†	.08	.19	.18	-.07	-.11	-.13	-.07	-.05	ns	ns	-.65	---			
14. Educational Expectations	.13	.06	.17	.29	-.04	-.08	-.04	.12	.08	-.04	.02†	ns	.10	---		
15. Marital Status	-.13	Ns	-.16	-.22	.06	.10	.25	ns	-.07	.02†	ns	ns	-.11	-.14	---	
16. # Siblings	Ns	-.14	-.11	-.04	.02†	.07	.07	.08	.ns	.07	-.02†	ns	-.02†	ns	-.07	---

Note. Unless otherwise indicated, all correlations reached significance at p≤.001. Those with † reached significance at p≤.10

Appendix J. Correlation Matrix: 8th Grade School Level

School Level Predictors	1.	2.	3.	4.	5.	6.
1. Avg. SES	---					
2. Avg. Interaction	.35	---				
3. Avg. Barriers	-.36	-.26	---			
4. Avg. Parent Expectations	.26	.10	-.15	---		
5. Avg # of Siblings	-.20	-.06 †	.14	ns	---	
6. Schools with >50% Minorities	-.44	-.27	.24	.14	.11	---

Note. Unless otherwise indicated, all correlations reached significance at $p \leq .001$. Those with † reached significance at $p \leq .10$

References

Alexander, K. L., Entwisle, D. R., & Dauber, S. L. (1993). First-grade classroom behavior: Its short- and long-term consequences for school performance. *Child Development, 64,* 801-814.

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

Archer-Banks, D. A. M., & Behar-Horenstein, L. S. (2008). Black Parental Involvement in their children's middle school experiences. *The Journal of Negro Education, 77,* 143-156.

Arnold, D. H., Zeljo, A., Doctoroff, G. L., & Ortiz, C. (2008). Parental involvement in preschool: Predictors and the relation of involvement to preliteracy development. *School Psychology Review, 37,* 74-90.

Bartel, V. B. (2010). Home and school factors impacting parental involvement in a Title I elementary school. *Journal of Research in Childhood Education, 24,* 209-228.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology, 94,* 95-120.

Collignon, F. F., Men, M., & Tan, S. (2001). Finding ways in: Community-based perspectives on Southeast Asian family involvement with schools in a New England state. *Journal of Education for Students Placed at Risk, 6,* 27-44.

Comer, J. P. (1995). School power: Implications of an intervention project. New York:

Free Press.

Cooper, C. E. (2010). Family poverty, school-based parental involvement, and policy-focused protective factors in kindergarten. *Early Childhood Research Quarterly, 25,* 480-492.

Deslandes, R., & Bertrand, R. (2005). Motivation of parental involvement in secondary-level schooling. *The Journal of Educational Research, 98,* 164-175.

Desimone, L. (1999). Linking parental involvement with student achievement: Do race and income matter? *The Journal of Educational Research, 93,* 11-30.

Dornbusch, S. M., & Ritter, P. L. (1988). Parents of high school students: A neglected resource. *Educational Horizons, 66,* 75-77.

Driessen, G., Smit, F., & Sleegers, P. (2005). Parental involvement and educational achievement. *British Educational Research Journal, 31,* 509-532.

Drummond, K. V., & Stipek, D. (2004). Low-income parents' beliefs about their role in children's academic learning. *The Elementary School Journal, 104,* 197-213.

Eccles, J. S., & Harold, R. D. (1993). Parent-school involvement during the early adolescent years. *Teachers College Record, 94,* 568-587.

Epstein, J. L. (2001). *School, family, and community partnerships: Preparing educators and improving schools.* Boulder, CO: Westview.

Epstein, J. L., & Sheldon, S. B. (2006). Moving forward: Ideas for research on school, family, and community partnerships. In C. F. Conrad, & R. C. Serlin (Eds.), *The SAGE handbook for research in education: Engaging ideas and enriching inquiry* (pp. 117–138). Thousand Oaks, CA: Sage Publications, Inc.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement:

A meta-analysis. *Educational Psychology Review, 13,* 1-22.

Fantuzzo, J. W., Tighe, E., & Childs, S. (2000). Family involvement questionnaire: A multivariate assessment of family participation in early childhood education. *Journal of Educational Psychology, 92,* 367–376.

Feuerstein, A. (2000). School characteristics and parental involvement: Influences on participation in children's school schools. The Journal of Educational Research, 94(1), 29-40.

Galindo, C., & Sheldon, S. B. (2007). School and home connections and children's kindergarten achievement gains: The mediating role of family involvement. *Early Childhood Research Quarterly, 27,* 90-103.

Galindo, C., & Sheldon, S.B. (2012). School and home connections and children's kindergarten achievement gains: The mediating role of family involvement. *Early Childhood Research Quarterly, 27,* 90-103.

Garcia Coll, C., Akiba, D, Palacio, N., Bailey, B., Silver, R., DiMartino, L., & Chin, C. (2002). Parental involvement in children's education: Lessons from three immigrant groups. *Parents: Science and Practice, 2,* 303-324.

Georgiou, S. N. (1997). Parental involvement: Definition and outcomes. *School Psychology Education, 1,* 189-209.

Gonzalez, R. L. (2012). *Exploring parents' crossings into schools: understanding a critical step in the development of home-school relationships* (Unpublished doctoral dissertation). University of Maryland, College Park.

Green, C. L., Walker, J. M. T., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of

a theoretical model of parental involvement. *Journal of Educational Psychology, 99*(3), 532-544.

Griffith, J. (1998). The relation of school structure and social environment to parental involvement in elementary schools. *The Elementary School Journal, 99,* 53-80.

Grolnick, W. S., Benjet, C., Kurowski, C. & Apostoleris, N. H. (1997). Predictors of parent involvement in children's schooling. *Journal of Educational Psychology, 89,* 538-548.

Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology, 81*, 143-154.

Grolnick, W. S., & Slowiaczek, M. L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development, 65,* 237–252.

Grossman, J. A., Aldoney, D., & Jackson, C. (2013, April). A Multilevel Approach to Examining Parental Involvement in Kindergarten. Poster presented at Society for Research in Child Development, Seattle, WA.

Hayes, D. (2011). Predicting parental home and school involvement in high school African American adolescents. *The High School Journal, 94,* 154-166.

Herman, J. L., & Yeh, J. P. (1983). Some effects of parental involvement in schools. *The Urban Review, 15,* 11-17.

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

Ho Sui-Chu, E. and Willms, D. (1996). Effects of Parental Involvement on Eighth-Grade Achievement. *Sociology of Education, 69,* 126-141.

Hoover-Dempsey, K. V., Bassler, O. C., & Brissie, J. S. (1987). Parental involvement: Contributions of teacher efficacy, school socioeconomic status, and other school characteristics. *American Educational Research Journal, 24,* 417-435.

Hoover-Dempsey, K. V., Bassler, O. C., & Brissie, J. S. (1992). Exploration in parent-school relations. *The Journal of Educational Research, 85,* 287-294.

Hoover-Dempsey, K. V., & Sandler, H. M. (1995). Parental involvement in children's education: Why does it make a difference? *Teachers College Record, 95,* 310–331.

Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education? *Review of Educational Research, 67*(1), 3–42.

Hoover-Dempsey, K. V., & Sandler, H. M. (2005). Final performance report for OERI grant # R305T010673: The social context of parental involvement: A path to enhanced achievement. Presented to Project Monitor, Institute of Education Sciences, U.S. Department of Education, March 22.

Hornby, G., & Lafaele, R. (2011). Barriers to parental involvement in education: An exploratory model. *Educational Review, 63*, 37-52.

Huntsinger, C. S., & Jose, P. E. (2009). Parental involvement in children's schooling: Different meanings in different cultures. *Early Childhood Research Quarterly, 24,* 398-410.

Ingels, S. J., Abraham, S. Y., Karr, R., Spencer, B. D., & Frankel, M. R. (1990). *National Education Longitudinal Study of 1988, base year: Student components*

data file user's manual. Washington, DC: National Center for Education Statistics.

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

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

Jeynes, W. H. (2005a). The effects of parental involvement on academic achievement of African American youth. *The Journal of Negro Education, 74,* 260-274.

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

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

Jeynes, W. H. (2010). The salience of the subtle aspects of parental involvement and encouraging that involvement: Implications for school-based programs. *Teachers College Record, 112,* 747-774.

Jeynes, W.H. (2011). Parental involvement research: Moving to the next level. *The School Community Journal, 21,* 9-18.

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

Lareau, A. (1987). Social class differences in family-school relationships: The

importance of cultural capital. *Sociology of Education, 60,* 73-85.

Lee, S. (2005). Selective parent participation: Structural and cultural factors that influence school participation among Korean parents. *Equity and Excellence in Education, 38,* 299-308.

LeFevre, A. L., & Shaw, T. V. (2012). Latino parental involvement and school success: Longitudinal effects of formal and informal support. *Education and Urban Society, 44,* 707-723.

Levine-Rasky, C. (2009). Dynamics of parental involvement at a multicultural school. *British Journal of Sociology of Education, 30,* 331-344.

Maiers, A. (2001). *The teacher-parent partnership in the primary grades: Pathways to communication and cooperation.* Orlando, FL: Rigby Best Teachers Press.

McWayne, C., Campos, R., & Owsianik, M. (2008). A multidimensional, multilevel examination of mother and father involvement among culturally diverse Head Start families. *Journal of School Psychology, 46,* 551-573.

Muller, C., & Kerbow, D. (1993). Parental involvement in the home, school and community. In B. Schneider & J.S. Coleman (Eds.), *Parents, their children, and schools* (pp. 13-42). Boulder, CO: Westview.

National Center for Education Statistics. (2001). User's *manual for the ECLS-K base year public-use data files and electronic codebook* (NCES 2001-029, revised). Washington, DC: Department of Education.

National Center for Education Statistics. (2002). *User's manual for the ECLS-K base year public-use data files and electronic codebook* (NCES 2002-135). Washington, DC: Department of Education.

Ortiz, R. W. (2004). Hispanic/Latino fathers and children's literacy development: Examining involvement practices from a sociocultural context. *Journal of Latinos and Education, 3,* 165-180.

Overstreet, S., Devine, J., Bevans, K., & Efreom, Y. (2005). Predicting parental involvement in children's schooling within an economically disadvantaged Black sample. *Psychology in the Schools, 42,* 101-111.

Park, S., & Holloway, S. D. (2013). No parent left behind: Predicting parental involvement in adolescents' education with a sociodemographically diverse population. *The Journal of Educational Research, 106,* 105-119.

Pena, D. C. (2000). Parental involvement: Factors and implications. *The Journal of Educational Research, 94,* 42-54.

Raudenbush, S. W., & Bryk, A. S. (2002). Hierarchical Linear Models: Applications and Data Analysis Methods, 2nd Edition. Newbury Park, CA: Sage Publications.

Rodriguez, R. F., & Lopez, L. C. (2003). Mexican-American parental involvement with a Texas elementary school. *Psychological Reports, 92,* 791-792.

Rosenfeld, L.B., Richman, J. M., & Bowen, G. L. (2000). Social support networks and school outcomes: The Centrality of the teacher. *Child and Adolescent Social Work Journal, 17(3),* 205-226.

Rowley, S. J., Helaire, L. J., & Banerjee, M. (2010). Reflecting on racism: School involvement and perceived teacher discrimination in Black mothers. *Journal of Applied Developmental Psychology, 31,* 83-92.

Ryan, C. S., Casas, J. F., Kelly-Vance, L., Ryalls, B. O, & Nero, C. (2010). Parental involvement and views of school success: The role of parents' Latino and White

American cultural orientations. *Psychology in the Schools, 47,* 391-405.

Schlomer, G. L., Bauman, S., & Card, N. A. (2010). Best practices for missing data management in counseling psychology. *Journal of Counseling Psychology, 57,* 1-10.

Schulting, A. B., Malone, P. S, & Dodge, K. (2007). The effect of school-based kindergarten transition policies and practices on child academic outcomes. *Developmental Psychology, 41,* 860-871.

Seginer, R. (2006). Parents' educational involvement: A developmental ecology perspective. Parenting: Science and Practice, 6, 1-48.

Sheldon, S. B. (2002). Parents' social networks and beliefs as predictors of parental involvement. *The Elementary School Journal, 102,* 301-316.

Smock, S. M., & McCormick, S. M. (1995). Assessing parents' involvement in their children's schooling. *Journal of Urban Affairs, 17,* 395-411.

Suizzo, M. & Stapleton, L. M. (2007). Home-based parental involvement in young children's education: Examining the effects of maternal education across U.S. ethnic groups. *Educational Psychology: An International Journal of Experimental Educational Psychology, 27,* 533-556.

Sy, S. R., Rowley, S. J., & Schulenberg, J. E. (2007). Predictors of parental involvement across contexts in Asian American and White families. *Journal of Comparative Family Studies, 38,* 1-29.

Tourangeau, K., Nord, C., Lê, T., Sorongon, A. G., and Najarian, M. (2009). *Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K),*

Combined User's Manual for the ECLS-K Eighth-Grade and K–8 Full Sample Data Files and Electronic Codebooks. (NCES 2009– 004). Washington, DC: National Center for Education Statistics.

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

U.S. Department of Education, National Center for Education Statistics. (2007). *Parent family involvement in education survey of National Household Educational Survey Program, 2007* [Computer file]. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.

Waanders, C., Mendez, J. L, & Downer, J. (2007). Parent characteristics, economic stress, and neighborhood context as predictors of parental involvement in preschool children's education. Journal of School Psychology, 45, 619-636.

Walker, J. M. T., Ice, C. L. , Hoover-Dempsey, K. V., & Sandler, H. M. (2011). Latino parents' motivations for involvement in their children's schooling: An exploratory study. *The Elementary School Journal, 111,* 409-429.

Walker, J. M. T., Wilkins, A. S., Dallaire, J. P., Sandler, H. M., & Hoover-Dempsey, K. V. (2005). Parental involvement: Model revision through scale development. Elementary School Journal, 106, 85–104.

Williams, T. T., & Sanchez, B. (2012). Parental involvement (and uninvolvement) at an inner-city high school. *Urban Education, 47,* 625-652.

Wong, S. W., & Hughes, J. N. (2006). Ethnicity and language contributions to dimensions of parental involvement. *School Psychology Review, 35,* 645-662.