

ABSTRACT

Title of Document: THE IMPACT OF PARENTS' DEMOGRAPHIC AND PSYCHOLOGICAL CHARACTERISTICS AND PARENT INVOLVEMENT ON YOUNG CHILDREN'S READING AND MATH OUTCOMES.

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Parents' involvement in children's education as a means to increase children's academic achievement has received national attention due to findings from studies and current educational legislation. The current study explores the impact of parents' demographic and psychological characteristics and their involvement in activities both school and at home on children's reading and math outcomes within the framework of Bronfenbrenner's bioecological theory. Using data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), a nationally representative sample of children and families, this study addresses the following research questions: what are the effects of parents' characteristics on child outcomes and on parent involvement, what is the effect of parent involvement on child outcomes, and to what extent does parent involvement mediate the association between parent characteristics and child outcomes. Results from the study revealed that parents' level of education and income were associated with both parent involvement and children's reading and math outcomes. In addition, parents' beliefs

about their children's academic abilities also were strongly predictive of children's outcomes. Parent involvement *in school* was positively associated with children's reading and math outcomes, whereas parent involvement *at home* was negatively associated with children's outcomes. Lastly, parent involvement in school was found to partially mediate the association between parents' education and children's reading and math outcomes. This study highlights the impact parents have on their children's academic outcomes and findings suggest that programs aimed at helping parents build human capital is an important way to increase parent involvement at school and help children to succeed.

THE IMPACT OF PARENTS' DEMOGRAPHIC AND PSYCHOLOGICAL
CHARACTERISTICS AND PARENT INVOLVEMENT ON YOUNG
CHILDREN'S READING AND MATH OUTCOMES

By

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Dedication

I dedicate this dissertation to my family. Their support and guidance throughout this process has been invaluable and without them, none of this would have been possible. Thank you especially to my mother, father, Jake and Duncan.

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CHAPTER I

Introduction

Over the past ten years, parent involvement in children's schools (e.g. attending parent-teacher conferences, back to school night, volunteering at school) has received national attention due in part to the enactment of the No Child Left Behind Act of 2001. This legislation highlights an extensive body of research linking parent involvement to improved academic performance (Comer & Haynes, 1991; Griffith, 1996; Grolnick & Slowiaczek, 1994; Kohl, Lengua, & McMahon, 2000; Ritblatt, Beatty, Cronan, & Ochoa 2002; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991; Zellman & Waterman, 1998) and improved child attitudes about school (Epstein & Dauber, 1991; Zellman & Waterman, 1998). Findings on parent involvement are robust enough to show an effect of involvement on children's academic outcomes, but are not specific enough to be helpful in advising schools, parents, and policymakers on what factors lead to involvement and how to encourage parent involvement to yield improved child outcomes. The current study examines the influence of parents' demographic and psychological characteristics and parent involvement on children's reading and math outcomes.

The extant literature indicates that parent involvement is an important factor in children's success in school, particularly during the early elementary school years (Griffith, 1996). Research has shown that for younger school-age children parent involvement is associated with higher cognitive and academic scores, specifically children's reading and math outcomes (Nye, Turner, & Swartz, 2006; Sheldon & Epstein, 2005). Although little is known about the mechanism by which parent involvement affects children's achievement, it may be that parents' involvement in school relays to

children the importance of school and reinforces learning that occurs at home. During these early elementary school years (kindergarten through third grade), children are learning the rudimentary skills in reading and math that are necessary for later learning and academic success. Since this is a critical time of development and parent involvement has been shown to be important for children's success in school, it is important to examine the association between how parents are involved in school and how children perform academically.

The amount and type of parent involvement in which parents engage in however, differs depending on parents' demographic characteristics (e.g. education, income, ethnicity) and psychological characteristics (e.g. beliefs about children's academic abilities, perceptions of school and barriers to involvement). For example, low income, less educated, minority parents tend to be less involved in their children's school and school-related activities (e.g. attend fewer meetings, volunteer less) than higher income, more educated European-American parents (Chrispeels & Rivero, 2001; Hill & Taylor, 2004; Lareau, 1987). Evidence suggests that this is because parents with fewer resources and different cultural backgrounds feel unwelcome at school or are unable to attend events due to language barriers, and time and work constraints (Carlisle, Stanley, & Kemple, 2005; Delgado-Gaitan, 1991; Patrikakou, & Weissberg, 1998; Peña, 2000; Ramirez, 2003).

Moreover, parents' psychological characteristics such as beliefs about their child's academic competence and the utility of their own involvement have been shown to strongly impact both the amount of parent involvement and children's academic outcomes (Green, Walker, Sandler, & Hoover-Dempsey, 2006; Grossman, Osterman,

Schmelkin, & Pedhazur, 1999). Parents who have positive perceptions of school (e.g. feel the school is welcoming and there are opportunities to be involved) and who do not believe they have many barriers to involvement (e.g. transportation or child care constraints) tend to be more involved in school-based activities than parents with less positive beliefs and more barriers to involvement (Griffith, 1996; Reed, Jones, Walker, & Hoover-Dempsey, 2000). Additionally, parents who believe their children are doing well in school and feel that they are able to help their children academically have children who perform better in school than parents who have less positive beliefs (Pomerantz & Dong, 2006).

There are several limitations of the extant parent involvement literature that the current study will address. First, there is a lack of consensus as to what constitutes parent involvement; some researchers consider school activities exclusively, while others include activities at home (Desimone, 1999; Griffith, 1996; Lawson, 2003; Nye et al., 2006). This lack of consensus within the parent involvement literature makes it unclear as to which types of parent involvement (e.g. school involvement, home involvement) are most strongly associated with children's academic outcomes, which leads to inconsistent findings and conclusions about the strength and effectiveness of parent involvement. For example, studies exploring the association between parent involvement and children's outcomes differ in their findings of the strength of the association with effect sizes ranging from .35 to .85 (Nye et al., 2006). This is perhaps due to variability as a result of differences in the conceptualization of parent involvement. Because both home and school involvement have been shown to be associated with children's academic outcomes (Desimone, 1999; Sheldon & Epstein, 2005; Sy & Schulenberg, 2005), it is necessary to

use a broader definition of parent involvement that includes both school-based and home-based activities. For the current study, parent involvement during early elementary school is defined as activities parents engage in, both at school and at home, (e.g. volunteer in class, attend back to school night, read to child, play games) to help their children succeed academically.

Second, the associations between parents' psychological characteristics (i.e. beliefs about their children's academic performance and school), involvement and children's academic outcomes remain partially unexplored. Although certain psychological characteristics such as parents' self-efficacy have been studied in connection with parent involvement, other parent beliefs have not. For example, although evidence suggests that parents' beliefs about their children's academic performance are associated with children's academic achievement (Pomerantz & Dong, 2006), research is less clear about the association between these types of beliefs (i.e. beliefs about children's academic performance) and parent involvement, either at school or at home. It may be that the effect of parents' beliefs about their children's academic achievement on children's academic outcomes is indirect and instead mediated by parent involvement. That is, perhaps parents who believe their children are not doing well academically participate in more learning activities at home which in turn increases academic achievement. Furthermore, research suggests that parents' perceptions of their child's school and barriers to involvement are associated with parents' participation in school-based activities, but little is known about the association between parents' perceptions of school and home-based activities. It may be that while parents who perceive many barriers to school involvement and have negative school perceptions participate less in

school activities, they instead are more active in home involvement activities. Therefore there is a need to examine multiple types of parent psychological characteristics (i.e. beliefs and perceptions) when exploring parent involvement at school and at home and children's academic outcomes. The current study will examine parents' beliefs about their children's academic abilities, their perceptions of school and barriers to involvement in relation to parent involvement, both at school and at home, and children's reading and math outcomes. Parent self-efficacy, although found to be influential in predicting parent involvement activities (Green et al., 2006; Grossman et al., 1999; Reed et al., 2000) will not be examined due to data limitations.

Third, the existing parent involvement literature has not explored the independent and combined effects of parents' demographic and psychological characteristics and parent involvement on children's academic outcomes across the first four years of school. When children reach third grade, a shift in the academic paradigm has occurred; more of an emphasis is placed on content knowledge rather than skill acquisition, and there is less group work and involvement opportunities for parents (National Governor's Association, 2005). Therefore it is important to understand the unique impact parents have (i.e. their demographic and psychological characteristics and their involvement) during the early elementary school years on children's third grade academic outcomes. The current study seeks to examine how parents' characteristics and involvement are associated with children's third grade reading and math outcomes.

Fourth, methodological constraints and conceptual problems limit the application of the parent involvement literature. Much of the parent involvement research to date is based on small-scale, qualitative and intervention-based studies (Nye et al., 2006). These

studies shed light onto certain aspects of parent involvement, including how barriers and perceptions of school are linked to involvement, but the results cannot be generalized to larger populations of children and parents and lack statistical power. Examining the effects of parent involvement using nationally representative longitudinal datasets will add to our current knowledge by providing population-based estimates of the factors that predict parent involvement and the influence that parent involvement has on children's academic outcomes over time. The current study will use the Early Childhood Longitudinal Study, Kindergarten Class of 1998, a nationally representative, longitudinal dataset. Lastly, although a few studies on parent involvement are grounded in Bronfenbrenner's bioecological theory (Bronfenbrenner, 1979; 1989), the majority of this research is atheoretical. To better understand the role of parent involvement in children's lives, it is important to base the research on theory and thus the current study uses the bioecological theory as a guiding framework.

In sum, the purpose of the current study is to better understand the independent and cumulative effects of parents' demographic and psychological characteristics and involvement during the early elementary school years on children's third grade reading and math outcomes. It will address limitations of existing research by using a large scale, nationally representative dataset, examining parent involvement activities both at school and at home, and examine the unique impact of parents' characteristics and involvement on children's academic outcomes. The current study is useful in helping the field better understand the influence parents have on children's academic achievement in school in order to improve children's success in school.

Theoretical Framework

This study is guided by Bronfenbrenner's bioecological theory (Bronfenbrenner, 1977; 1989) which has been used to investigate the effects of parents and schools on children's academic achievement because it explains how parents and schools can independently and interactively affect children's outcomes. Although the parent involvement literature remains largely atheoretical, the bioecological theory is most comprehensive in its exposition of predictors and outcomes of parent involvement. Other theories (e.g. Coleman, 1988, Haveman & Wolfe, 1995) and models (e.g. Epstein, 1995; Hoover-Dempsey and Sandler, 1995; 1997) that have been applied to parent involvement studies are smaller in scope and thus only guide research on specific predictors of involvement. In other words, these more narrow theories are not independently sufficient for explaining the relation between multiple predictors of parent involvement (e.g. parents' demographic and psychological characteristics) and children's academic outcomes.

The bioecological theory posits that a child develops within multiple contexts or systems that consist of people, objects and institutions, and each system along with the child's biological characteristics, directly and indirectly affect the child. The social interactions that occur between the child and systems in his/her environment are known as proximal processes and help to promote children's competencies and outcomes (Bronfenbrenner, 1989). The effects of the proximal processes, however, are constrained by the environment. For example, relations between parents and children, such as parent involvement, can lead to favorable child outcomes, but the amount and type of social interaction between parent and child is constrained by characteristics within the

environment (e.g. parents' education, ethnicity, income). In addition, the bioecological theory posits that relations within the environment are affected by four main components: process, person, context and time. The current study considers each of these components by exploring how predictors of involvement such as parents' characteristics (i.e. person), and parent involvement in their children's school (i.e. process and context), directly and indirectly impact children's academic outcomes during the early elementary school years (i.e. time).

Predictors of Parent Involvement in Children's Elementary School

Given the research to date on the factors that account for variation in parent involvement and guided by Bronfenbrenner's bioecological theory (Bronfenbrenner, 1979; 1989), parents' demographic (e.g. education, income, ethnicity) and psychological (e.g. beliefs about children's academic abilities, school and barriers to involvement) characteristics are considered central predictors of parent involvement and are examined in the current study.

Parents' Demographic Characteristics

Research aimed at understanding variations in parent involvement in elementary school education has generally focused on parent education, income, and ethnicity because these variables have been most strongly linked to parent involvement in school (Carlisle et al., 2005; Hill & Taylor, 2004; Jeynes, 2005). Studies have concluded that lower income, less educated, minority parents are less involved in their child's education and that this may be due, in part, to their feeling unwelcome at school and less prepared to help their child academically (Chavkin & Williams, 1989; Delgado-Gaitan, 1991; Lareau, 1987; McKay, Atkins, Hawkins, Brown, & Lynn, 2003; Peña, 2000; Ramirez,

2003). The majority of research examining parents' characteristics as predictors of parent involvement, however, generally uses a composite variable of socioeconomic status (SES) (i.e. education, income) instead of assessing demographic characteristics individually and rarely controls for ethnicity. While measures of SES are sometimes informative, researchers have begun to desegregate this construct and assess the independent effects of parent's education and income on behaviors of interest. For example, research has shown that parents' education, in particular maternal education, is one of the strongest predictors of parenting behaviors and consequently of outcomes for children over and above parents' income and parents' ethnicity (Duncan & Brooks-Gunn, 1997). The current study examines the unique influences of parent's education, income, and ethnicity on parent involvement in school and on children's reading and math outcomes.

Parents' Psychological Characteristics

Parent beliefs about their children's academic abilities and their perceptions of their children's school have been shown to be strong indicators of the nature and extent of parents' involvement in their children's education (Fan & Chen, 2001; Griffith, 1996; Smrekar & Cohen-Vogel, 2001; Zellman & Waterman, 1998) and of their children's academic performance (Pomerantz & Dong, 2006). Findings suggest that parents who believe their children are doing well academically and believe that academic competence is a fixed trait, (i.e. that intelligence and competence does not change over time) have children who do better in school than parents who do not share these beliefs. A possible explanation of this finding is that children whose parents believe they are doing well academically internalize their parents' beliefs about their competency, creating a self-

fulfilling prophecy (Pomerantz & Dong, 2006). Whether the effects of parent's beliefs on children's academic performance are direct or are mediated by parent involvement is not clear. It may be that parents' beliefs are associated with the level and type of parent involvement which in turn is associated with children's academic achievement.

In addition, parents' perceptions of school and barriers to involvement have been associated with parent involvement in school. Parents who feel unwelcome at school or perceive many barriers to being involved (e.g. time and work constraints, child care, transportation) are typically less involved in school based activities (Carlisle et al., 2005; Delgado-Gaitan, 1991; Griffith, 1996; Perez Carreon, Drake, & Calabrese Barton, 2005; Ramirez, 2003). However, the extant literature is unclear about whether parents' beliefs about their children's school and perceived barriers have the same effect on parent's involvement at *home* (e.g., reading, helping with homework) as it does on parent involvement in *school* (e.g., attending PTA meetings, volunteering in class).

Lastly, research on parents' psychological characteristics and parent involvement in schools often does not control for parents' education, income and ethnicity, making it difficult to discern the unique impacts of parents' beliefs on involvement, over and above the effects of parents' demographic characteristics (Chrispeels & Rivero, 2001; Lareau, 1987; McKay et al., 2003; Ramirez, 2003). Parents may be less involved because their own characteristics (e.g. dropped out of school, less educated) lead to negative beliefs about involvement and school participation and therefore they may feel they lack the knowledge or skills necessary to help their children. Therefore, it is important to discern the unique effect of parents' psychological characteristics on parents' decisions to be involved in their child's school education in order to guide future research and inform

policymakers about the importance a parent's beliefs have on his/her actions. The current study examines the effects of parents' beliefs about their children's academic abilities, perceptions of the child's school and barriers to involvement on parent involvement and children's academic outcomes.

Predictors of Children's Reading and Math Outcomes

It is important to explore predictors of children's reading and math outcomes during the early elementary school years, because these subjects lay the groundwork for later learning. During the first four years of school (kindergarten through third grade) children are learning how to read and learning basic mathematics skills that are necessary for later success in school. By third grade, children who have not mastered basic learning skills begin to fall behind their peers academically as shown by a widening of the academic achievement gap (Aikens, 2006; National Governor's Association, 2005; O'Connor, Fulmer, Harty, & Bell, 2005). Findings implicate several important factors which contribute to children's academic achievement in school. Parents' demographic (e.g. education, income) and psychological (e.g. beliefs about children's abilities) characteristics have been found to be associated with children's academic outcomes. For example, children who have parents who are less educated and have lower incomes typically do worse academically than children who have parents who are more educated and have higher incomes (Atzaba-Portia, Pike, & Deater-Deckard, 2004; Horatcsu, 1995; Linver, Brooks-Gunn & Kohen, 2002). Moreover, parents who believe their children do well academically and that they will always do well have children who do better academically than parents who do not believe their children are doing well (Pomerantz & Dong, 2006).

Parent involvement has also been found to be a strong indicator of children's academic achievement. The majority of the parent involvement literature has found significant associations between parent involvement in elementary school (e.g. volunteering, attend parent-teacher conferences) and children's academic outcomes (e.g. better reading and math test scores and grades) (Berger, 1991; Epstein & Dauber, 1991; Grolnick & Slowiaczek, 1994; Kohl et al., 2000; Ritblatt et al., 2002; Sheldon & Epstein, 2005; Snow et al., 1991; Zellman & Waterman, 1998). This research theorizes that parents who are more involved with their children's school education are more likely to be aware of issues that may arise at school and know when their children might need more academic help. Also, researchers speculate that parents' involvement in school might send a message to their children that they believe that school is important so children learn the value of education (Carlisle et al., 2005; Domina, 2005; Smrekar & Cohen-Vogel, 2001).

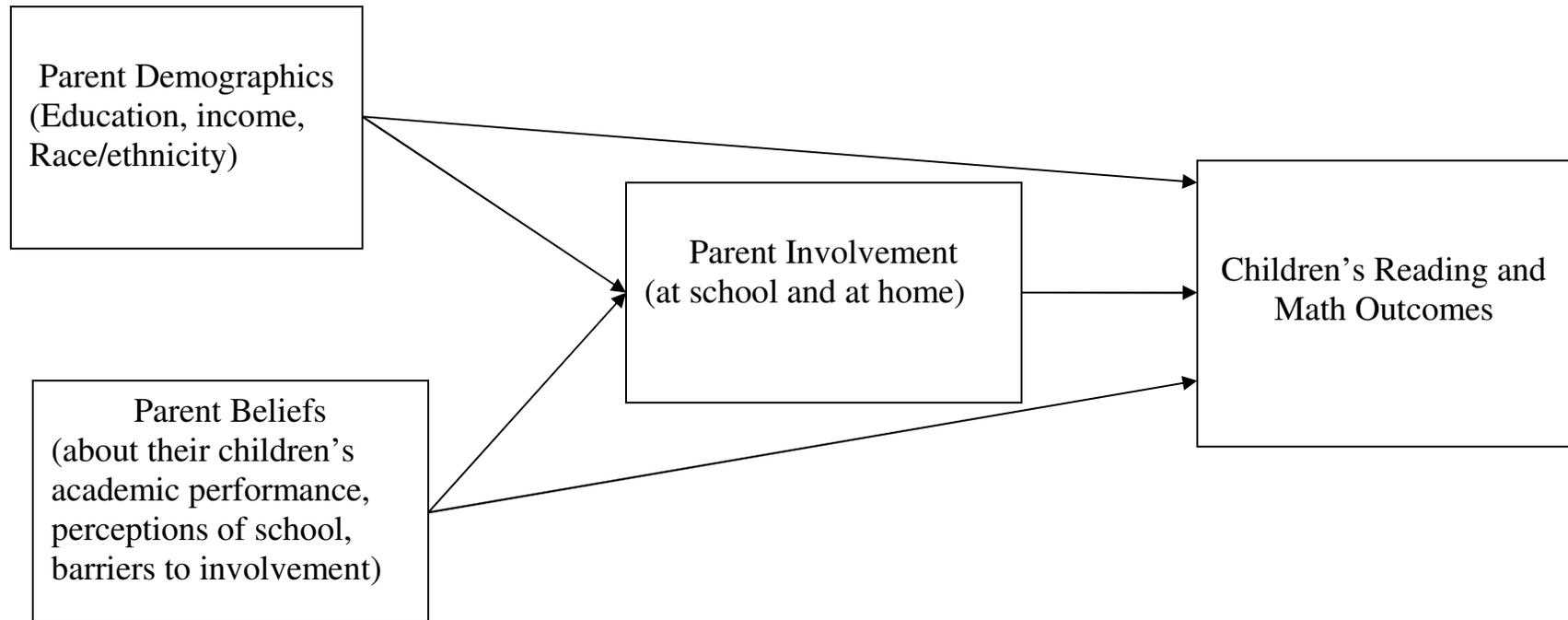
In addition, some studies have found that parent involvement has an impact on children's outcomes even when controlling for parents' demographic characteristics (Griffith, 1996). Such findings suggest that parent involvement may be a mechanism which mediates the association between parents' demographic and psychological characteristics and children's academic outcomes. There is some recent evidence that activities parents do (e.g. read to children, mother-child positive interactions) mediate the association between parents' socioeconomic status and children's intellectual development (Guo & Harris, 2000), but this pathway needs to be further explored. The current study seeks to examine the associations between parents' demographic and psychological characteristics, involvement and children's reading and math outcomes and

determine whether parent involvement serves as the proximal mechanism which impacts children's academic outcomes.

Study Rationale and Overview

The current study examines how parents' demographic and psychological characteristics and involvement during the early elementary school years impact children's third grade reading and math outcomes (see Figure 1). The first four years of school mark an important developmental time period when children learn the basic skills needed to be successful in school. Using Bronfenbrenner's bioecological theory as a framework for the study, interactions between parents, children, and the school are explored to determine how people (i.e. parents, children), processes (i.e. parents' beliefs, involvement), time (i.e. early elementary school) and context (i.e. home and school) influence children's academic outcomes. The goals of the study are: 1) to investigate the unique effects of parents' demographic (i.e. education, income, ethnicity) and psychological (i.e. beliefs about child and school) characteristics on children's reading and math outcomes; 2) to investigate the unique effects of parents' demographic and psychological characteristics on parent involvement at school and at home; 3) to examine the effects of parent involvement at school and at home across the first four years of school on children's reading and math outcomes in third grade; and 4) to examine the extent to which parent involvement mediates the association between parents' characteristics and children's reading and math outcomes.

Figure 1: Model of Parent Characteristics, Parent Involvement and Child Outcomes



These associations are examined using a nationally-representative study of children (Early Childhood Longitudinal Study- Kindergarten Class of 1998-9). The ECLS-K dataset was designed using an ecological approach taking into account child, parent and school level variables which is similar to Bronfenbrenner's bioecological theory and model.

The current study contributes to the literature in the following ways. First, it uses a more comprehensive definition of parent involvement, examining both school-based and home-based activities parents engage in with their children. Second, it provides an in-depth examination of the unique impact of parents' demographic and psychological characteristics on parent involvement, both at school and at home, during a critical developmental time period (i.e. the first four years of school). Third, it examines the influence of parent involvement on children's reading and math outcomes using a nationally representative sample and explores the mediating effect of parent involvement. Fourth, it is grounded in Bronfenbrenner's bioecological theory which allows for the analysis of multiple factors within a child's environment. By including multiple predictors of involvement, involvement activities and child outcomes in one study using a nationally representative sample, it helps to inform policy and practice in an effort to improve children's academic outcomes.

The study is designed to address the following research questions:

Research Question 1. What are the effects of parents' demographic characteristics (i.e. education, income, and ethnicity) when children are in kindergarten and parents' psychological characteristics (i.e. beliefs about children's academic abilities, perceptions

of school and barriers to involvement) when children are in kindergarten and first grade on children's third grade reading and math outcomes?

Research Question 2. What are the effects of parents' demographic characteristics (i.e. education, income, and ethnicity) when children are in kindergarten and psychological characteristics (i.e. beliefs about their children's academic abilities, perceptions of school and barriers to involvement) when children are in kindergarten and first grade on parent involvement averaged across the first four years of school (i.e. kindergarten-third grade)?

Research Question 3. Controlling for parents' demographic and psychological characteristics, what is the association between parent involvement at school and at home during the early elementary school years and children's third grade reading and math outcomes?

Research Question 4. To what extent does parent involvement mediate the effect of parents' demographic and psychological characteristics and children's third grade reading and math outcomes?

CHAPTER II

Literature Review

Research indicates that when parents are involved in their children's school (e.g. helping with homework and attending school events), children score higher on achievement tests, get better grades in school, have more positive attitudes about school and have better behavioral outcomes (Comer & Haynes, 1991; Epstein & Dauber, 1991; Grolnick & Slowiaczek, 1994; Kohl et al., 2000; Ritblatt et al., 2002; Snow et al., 1991; Zellman & Waterman, 1998). Parent involvement in school is beneficial for parents, children and teachers because of the interactions which take place between all three. Parents can serve as a support system by reinforcing the learning that occurs in the classroom and emphasizing the importance of school (Carlisle et al., 2005; Domina, 2005; Grolnick, Benjet, Kurowski, & Apostoleris, 1997; Zellman & Waterman, 1998). Given the array of ways parents can be involved (e.g. reading at home, volunteering in school, singing songs), it is less clear what types of parent involvement are the most beneficial for improving children's academic outcomes and how much parents should be involved in their children's school education in order to ensure the best academic outcomes for their children (Desimone, 1999). In addition, it remains unclear how predictors of involvement such as parents' demographic and psychological characteristics are associated with different types of parent involvement. This review will begin by discussing overall limitations with the extant literature. Next, a review of theories used within the parent involvement field, including the bioecological theory which frames the current study will be addressed. Lastly, predictors of parent involvement (i.e. parents' demographic and psychological characteristics) and predictors of children's academic

outcomes (i.e. parents' beliefs about their children academically and parent involvement) will be discussed.

Although many studies find a positive association between parent involvement activities and academic outcomes (Grolnick & Slowiaczek, 1994; Jeynes, 2003; Jeynes, 2005; Sheldon & Epstein, 2005; Zellman & Waterman, 1998), there continues to be a debate about how strong that association is due differences in research methodology and conceptualizations of studies which leads to inconsistent findings and conclusions within the parent involvement literature (Epstein, 2001; Griffith, 1996; Nye et al., 2006). An important aspect of the literature that may account for some discrepancy in the findings is a lack of consensus about what is parent involvement. Researchers use various definitions of what constitutes parent involvement (e.g. volunteering, homework, playing games with children); while some define involvement as participating in school-based activities (e.g. volunteering, attending events), others use a broader definition to include home-based activities (e.g. helping with homework, read to child) (Epstein, 1985; 1995; Grolnick et al., 1997; Nye, et al., 2006; Sheldon & Epstein, 2005). Findings suggest that both school-based and home-based parent involvement is associated with improved child outcomes (Carlisle, et al., 2005; Desimone, 1999; Epstein, 1985; 1995). In the current review and study, parent involvement is defined as activities parents engage in to help their child succeed academically, which can occur both in school (e.g. volunteering, attending meetings and events) and at home (e.g. reading to children, helping with homework, playing games).

Another possible reason for the differences found in the strength of the association between parent involvement and children's outcomes is because of the

variability regarding how child outcomes are measured. Studies with larger effect sizes typically use students' grades reported by teachers rather than standardized test scores. It may be that these findings reflect parents' relationships with teachers rather than assessing the direct impact of parent involvement on children's outcomes (Desimone, 1999; Domina, 2005; Pallas, Entwistle, Alexander, & Stulka, 1994). Likewise, researchers who used children's standardized reading and math scores as outcome variables found that teachers' characteristics (e.g. education, years of teaching) do not mediate the association between parent involvement and children's outcomes (Cabrera, Epstein, & West, under review).

The age of the child also contributes to differences in the strength of the association between parent involvement and children's academic outcomes (Domina, 2005; McNeal, 2001; Nye et al., 2006; Sheldon & Epstein, 2005). An examination of the literature suggests that when children are in the early elementary school grades (e.g. Pre-K to 3rd grade), parent involvement is associated with an improvement in academic outcomes, such as reading and math scores (Griffith, 1996; Nye et al., 2006; Sheldon & Epstein, 2005). On the other hand, during adolescence parent involvement in school is associated with behavioral outcomes appearing to serve as a form of monitoring of children's behaviors and school work (McNeal, 1999; 2001). According to the bioecological theory, parent involvement is not a fixed entity but instead affected by multiple factors such as the children's age and environmental factors such as parents' demographic and psychological characteristics (Bronfenbrenner, 1989).

Lastly, the majority of parent involvement research is based on small scale qualitative samples (Nye et al., 2006) which provide greater insights into the mechanisms

of involvement by exploring parent involvement more in depth. However, small sample sizes make it difficult to generalize the findings to larger populations and often lack power. The current study explores the influence of parent involvement on children's reading and math outcomes using a nationally representative sample of elementary school children over the first four years of school (i.e. kindergarten, first and third grade).

In addition to methodological and conceptual disparities within the parent involvement literature, some aspects of parent involvement also remain partially unexplored, specifically certain predictors of involvement. Research investigating factors that influence the amount and type of parent involvement have found that parents' demographic and psychological characteristics such as parents' education, income and ethnicity, and parents' beliefs about their children's academic abilities, their children's school and about their ability to help their children in school (e.g. parental self-efficacy) are strong indicators of parent involvement (Hoover-Dempsey, Bassler, & Brissie, 1992; Ramirez, 2003; Smrekar, & Cohen-Vogel, 2001). For example, low-income, minority parents with low levels of education are typically less involved in school based activities such as PTA meetings and Back to School Nights than higher income, European-American parents with higher levels of education (Chrispeels & Rivero, 2001; Hill & Taylor, 2004). However, most of this research has not disentangled the unique effects of these factors (e.g. education, income) on children's outcomes and instead use a composite of socioeconomic status. Socioeconomic status is a composite variable typically made up of parents' education, income, and employment. There is research to suggest, however, that parent education, specifically maternal education, has the strongest impact on parent involvement (Cabrera et al., under review; Duncan & Brooks-Gunn, 1997) over and

above other demographic factors and therefore there is a need to examine the unique effects of demographic characteristics on parent involvement.

Parents' psychological characteristics such as their beliefs about school, involvement and about their children's academic achievement also have been found to have an effect on parent involvement activities and children's academic performance. Parents who believe that they should play an active role in their children's academic lives and that their involvement matters tend to be more involved both at school and at home than parents who do not (Green et al., 2006; Griffith, 1996; Grossman et al., 1999). Moreover, parents who have positive perceptions of school are typically more involved in school-based activities (Carlisle et al., 2005; Dauber & Epstein, 1993; Delgado-Gaitan, 1991; Hill & Taylor, 2004; Lawson, 2003; Overstreet, Devine, Bevans, & Efreom, 2005; Reed et al., 2000). Lastly, research has indicated that parents who believe that their children are doing well in school and that children's academic performance does not change, have children who do better academically than parents who do not believe that their child is doing well and that academic performance can change (Pomerantz & Dong, 2006). Nevertheless, it remains unexplored how parents' perceptions of school are associated with home involvement and how parents' beliefs about their children's academic abilities are associated with parent involvement both at school and at home.

Although the parent involvement literature has indicated an association between parents' demographic and psychological characteristics and parent involvement, and an association between parent involvement and children's academic outcomes, parent involvement has not been examined as a mediator between parents' characteristics and children's outcomes. In addition, given research showing that parents' resources (i.e.

education and income) are so linked directly to children's outcomes (Horatcsu, 1995; Linver et al., 2002), it is possible that parent involvement has a mediating effect on children's outcomes. For example, parents with more resources (e.g. education, income, positive beliefs about school) may be more involved in school and at home with their children which is associated with more positive academic outcomes for children.

This chapter presents a review of the extant literature on parents' demographic and psychological characteristics (i.e. parents' education, income, ethnicity, beliefs about school and children's academic abilities) as predictors of parent involvement both at home and at school and explores associations between these predictors, parent involvement and children's academic outcomes (i.e. reading and math) during the early elementary school years. First, theories that have been used to guide the parent involvement literature will be reviewed. Next, because Bronfenbrenner's bioecological theory (Bronfenbrenner, 1979; 1989) guides the current research in examining parents' characteristics, involvement and children's academic outcomes, it also frames the subsequent sections of this review: (i) the effects of predictors of parent involvement on parent involvement both at school and at home are examined, and (ii) the effects of parents' demographic and psychological characteristics and parent involvement on children's reading and math outcomes are explored. When examining predictors of involvement, both parents' demographic characteristics (i.e. parents' education, income, and ethnicity) and parent's psychological characteristics (i.e. beliefs about school and children's academic abilities) are examined. The review concludes with suggested avenues for future research and a description of the current study.

This review is constrained by several factors. First, this review will focus on the early years of elementary school (i.e. kindergarten through third grade) because parent involvement in children's school education is most prevalent during early childhood and wanes during the middle childhood and adolescent years (Epstein & Dauber, 1991; Griffith, 1996; NCES, 1998). It is important to examine predictors of children's academic outcomes during the early elementary school years because these years are a time of rapid and critical development and because academic success during this time period is highly predictive of later achievement (National Governor's Association, 2005; O'Connor et al., 2005). By third grade if children have not mastered basic skills necessary for later learning, they begin to fall behind their peers academically (Aikens, 2006). Second, reading and math outcomes will be the focus of this literature review because early childhood academic curricula typically place a strong emphasis on reading and math achievement. Third, although there is evidence that school and teacher characteristics affect children's outcomes (Becker, & Epstein, 1982; Feldman, & Wentzel, 1990; Wentzel, Barry, & Caldwell, 2004), they will not be discussed because this literature review is focused on the impact of parents on children's academic outcomes. Lastly, the review focuses on parent beliefs about their children's academic abilities and perceptions of school rather than parents' self-efficacy and motivations to be involved because of restrictions within the dataset although those factors have been shown to be important indicators of level and type of involvement (Hoover-Dempsey et al., 1992; Hoover-Dempsey et al., 2005).

Review of Theories used to Examine Parent Involvement

The majority of the parent involvement literature remains atheoretical, although several theories and models have been used within the field. While some researchers have used theories such as capital theories (Coleman, 1988), resource theory (Haveman & Wolfe, 1995) and the bioecological theory (Bronfenbrenner, 1979; 1989), others base their research on models of parent involvement (Epstein, 1995; Hoover-Dempsey & Sandler, 1995; 1997) which were derived from multiple theories.

Coleman's (1988) capital theories posit that certain parental assets (e.g. education, income) become capital when they are invested because they will yield certain positive returns or social outcomes (e.g. academic success for their children). Specifically, parents' financial capital (e.g. income), human capital (e.g. skills, education or talents) and social capital (e.g. networks of friends, family and colleagues) are expected to have positive impacts on children's outcomes (e.g. academic performance, social emotional development). When parents apply and invest their resources in their children, children are more prepared and have more resources themselves to do well academically and socially in school. Accordingly, when examining parent involvement, capital theories would predict that parents with more human capital (e.g. education) and financial capital (e.g. income) will invest more time and resources (e.g. parent involvement) in their children. The hypothesized effects of human and financial capital are both direct, through transactions with their children, and indirect, by providing more stimulating environments, through the resources they make available to their children. Capital theories are useful for understanding how parents' demographic characteristics and parent involvement affect children's outcomes, however it does not address how parents'

psychological characteristics, such as parents' beliefs about school, are associated with parent involvement activities and children's academic outcomes. There is evidence that these psychological characteristics have an effect on parent involvement and children's outcomes (Lawson, 2003; Overstreet et al., 2005; Pomerantz & Dong, 2006; Hoover-Dempsey & Sandler, 1995). Parents' beliefs about participating in school activities and their perceptions of school have been shown to be associated with how much parents are involved in school (Dauber & Epstein, 1993; Hill & Taylor, 2004; Overstreet et al., 2005). In addition, parents' beliefs about their children's academic achievement have been directly linked to children's academic outcomes (Pomerantz & Dong, 2006).

Similar to capital theories (Coleman, 1988), resource theory (Haveman & Wolfe, 1995) suggests that parents invest their resources (e.g. income, education, abilities, time) in their children in order to generate positive outcomes (e.g. better reading and math scores) and enhance the overall well-being of the family. Therefore the amount and type of resources that are allocated to the child and the timing of that allocation will effect a child's academic achievement. Although resource theory (Haveman & Wolfe, 1995) is useful in understanding how parents' demographic (e.g. education, income) and psychological characteristics (e.g. decisions to invest and distribute resources) impact children's success in school through their investments (e.g. involvement), it does not address other psychological factors that may influence parents' decisions to be involved. For example, parents may perceive their child's school to be unwelcoming or that the school does not offer interesting activities for parents and these perceptions affect parents' investment in their children's schooling (Delgado-Gaitan, 1991; Sy and Schulenberg, 2005).

Other research on parent involvement has used conceptual models rather than theories to frame their investigations. Two models that are often used in the parent involvement literature are Epstein's (1995) and Hoover-Dempsey and Sandler's (1995, 1997) conceptualizations of parent involvement. These models have been used to explore the effects of family-school partnerships on child outcomes (e.g. Comer & Haynes, 1991; Epstein, 1985; Sheldon 2003; 2005; Sheldon & Epstein, 2005) and the relation between parents' self-efficacy and motivation and parent involvement behaviors (e.g. Anderson & Milke, 2007; Hoover-Dempsey & Sandler, 1995; Hoover-Dempsey, Walker & Sandler, 2005; Reed et al., 2000; Walker, Wilkens, Dallaire, Sandler, & Hoover-Dempsey, 2005). Epstein's model outlines six types of involvement within a school-family partnership program: parenting, communication with school, volunteering, learning at home, parent participation in decision making, and collaboration with the community. The model focuses on multiple types of involvement rather than just school involvement and although it is assumed, the model does not explain the relation of these types of involvement to parents' demographic or psychological characteristics, which are important predictors of parent involvement, nor to children's academic outcomes (Epstein, 1995).

Hoover-Dempsey and Sandler (1995; 1997) developed a model to link how and why parents become involved and their choice of involvement to children's outcomes. The model consists of five levels: parents' decisions to become involved (e.g. beliefs about role as parent, self-efficacy), parents' choice of involvement, the mechanisms by which parent involvement influences children's outcomes (e.g. modeling, reinforcement), and children's outcomes. These levels build upon one another forming a linear,

unidirectional model which does not take into account the bidirectional nature of parents' beliefs, involvement and children's outcomes. There is evidence that how parents are involved can be in reaction to children's academic performance as well as their own beliefs which suggests a bidirectional impact of children on parents' behaviors and beliefs. For example, Ng, Kenney-Benson and Pomerantz (2004) found that parents become less involved in helping with homework when they believe that their children are doing well academically and therefore do not need as much help. Although both of these models are widely used within the parent involvement literature, they are not based in a particular theory which allows for the explanation and prediction of how parent involvement impacts children's academic achievement.

The theories and models discussed thus far have been used to examine parent involvement, but are not independently sufficient for examining demographic and psychological predictors of involvement, or the effects overtime of parent involvement activities on children's academic outcomes. Bronfenbrenner's bioecological theory (1979; 1989) encapsulates virtually all theoretical frameworks used within the parent involvement literature (e.g., social capital theories, Epstein's and Hoover-Dempsey and Sandler's models) as it broadens the focus of other frameworks with the inclusion of key components from other theories and models and the expansion of the conceptualization of biological and environmental influences on children's academic outcomes. The bioecological theory remains at the core of educational research because its account of development is broad in scope and it incorporates a multitude of environmental and psychological components.

Theoretical Framework

The bioecological theory posits that an individual's development is affected by his biological characteristics (i.e. gender, age) and his environment (i.e. family, school, etc.). This theory has been used to examine the different levels and ways in which parents are involved with their children's elementary school education, the factors that influence this involvement, and how children are affected by their environment. Bronfenbrenner (1979; 1989) suggests that an individual's environment is comprised of a set of systems (e.g. microsystem, mesosystem) through which characteristics of both the environment and the individual interrelate to produce change in the individual over time (Bronfenbrenner, 1989). Within these set of systems, there are four main components which affect development: process, person, context, and time variables. These components influence development both independently and concurrently within a person's environment (Bronfenbrenner, 1989).

The theory assumes that each system of the environment (i.e. the individual, the microsystem, the mesosystem) plays a critical role in shaping the individual through a complex series of relationships affected by the four components (i.e. process, person, context, and time). The theory stipulates that an individual is part of an environment composed of a number of nested systems comprised of people and institutions (i.e. schools, families, parents' workplace, health care centers, etc.). Because the systems work together with one another and with the individual affecting the individual, when one system changes all the other systems, including the individual are affected (Bronfenbrenner, 1977; 1979). The relations among systems or levels in the environment

and the individual are referred to as proximal processes which serve as the impetus for effective development (Bronfenbrenner & Ceci, 1994; Eamon, 2001). The amount of influence that the proximal processes can yield, however, depends on the environment. For example, regardless of the effort parents put in, parents with limited educational background and lack of specific skills or knowledge are less able to help their children academically than more educated parents (Bronfenbrenner & Ceci, 1994).

Child development is influenced by bidirectional and indirect influences between individuals and institutions at multiple levels. From this perspective, parents, teachers and schools influence children through their relationships with one another and with the child. These transactions between people and the environment are known as the person-context model which posits that within a person's environment, characteristics of both the person and the environment are taken into account jointly when examining development (Bronfenbrenner, 1989). The person-context model allows for the examination of development within a specific context or area of the environment making it possible to examine not only the unique characteristics of the person and his/her environment, but also to explore how they act together and create either favorable or unfavorable developmental outcomes (Bronfenbrenner, 1989). For example, do children who are raised in low-income, less educated households, but have parents who believe in educational success and are more involved in their children's education do better academically than parents who hold opposing beliefs? According to the bioecological theory, these children should do better than children with parents with the same characteristics but who hold negative beliefs about education and are less involved. This is due to the interaction of favorable (i.e. positive beliefs and involvement) and

unfavorable (i.e. less educated, low-income parents) conditions rather than the child only being exposed to unfavorable conditions.

The four main systems that exist within an individual's environment are the microsystem, the mesosystem, the exosystem and the macrosystem. The microsystem consists of people and things which the child directly interacts with on a regular basis. A young child's microsystem is composed of his family, school, friends and neighborhood which all have a direct impact on the child. Therefore, positive school environments that are less disruptive to learning and strong parent-child relationships contribute to gains in cognitive and emotional development and a reduction in behavioral problems (Farmer & Farmer, 1999). The next less immediate level is the mesosystem which encapsulates the linkages between the immediate contexts or microsystems (i.e. schools, families, neighborhoods) (Bronfenbrenner, 1986, Farmer & Farmer, 1999). An example of a common interaction between microsystem contexts within the mesosystem is parent involvement such as parents' communications with a child's teacher, both informally (e.g. talking after school) and formally (e.g. parent-teacher conferences).

The two outer system levels, the exosystem and the macrosystem, have no direct influence on the individual but instead create the context in which the microsystem and mesosystem function (Farmer & Farmer, 1999). The exosystem contains the people and institutions which directly relate to people and objects within the mesosystem such as parents' work environments, extended family and community centers that indirectly affect the child. For example, if a parent has a job which is not flexible and does not allow the parent to take unpaid leave, then he/she is less likely to take time off work and volunteer in his/her child's classroom. The outermost level of the bioecological model is

the macrosystem which consists of cultural values, laws and customs which affect the inner levels of the environment and in turn the individual. For instance, children living in countries that have high-quality health care systems are more likely to have better health experiences (e.g. routine check ups, dental care, immunizations, etc.) and exposure to better health care within their immediate environment than children living in countries with little to no access to health care.

It is through the components (i.e. process, context, person and time) within these four systems in the environment that a child's development is affected and shaped. In the current study, the components within the microsystem and the mesosystem levels are discussed in order to explore the relationships between parents, their children and their children's school environment. Within these two systems, the four main components of the theory, process, person, context and time will be considered and addressed with respect to how they impact and influence both parents' involvement in elementary school education and children's academic outcomes.

In summary, Bronfenbrenner's bioecological theory allows for the examination of multiple components within the environment that affect a child's academic achievement (e.g. parents' characteristics, involvement, and children's previous academic outcomes). Although there are limitations of the theory due to it being large in scope and incorporating all aspects of an individual's environment (i.e. no single study could address the whole theory), it remains the most comprehensive theory in explaining and predicting parents' impact (i.e. demographic and psychological characteristics, and involvement) on children's academic achievement. While other theories and models may provide more guidance within the parent involvement literature, they are restrictive in

nature lacking a broader, more comprehensive approach to exploring the impact of parents on children's academic outcomes.

For the current study which examines parents' demographic and psychological characteristics, parent involvement and children's academic outcomes, Bronfenbrenner's bioecological theory (1979; 1989), allows for the examination of all pieces of the study. In regards to studying parent involvement, there is no empirical data suggesting that one theory or model is better than another; this lack of consensus within the field is at the root of some of the inconsistent findings in this area of research. Therefore, the bioecological theory, which has been used within the parent involvement literature, provides the most comprehensive framework for the current study.

Predictors of Parent Involvement during Early Elementary School

Research has found that both parents' demographic and psychological characteristics have an impact on how parents are involved in their children's school (Grolnick et al., 1997; Hill & Taylor, 2004; Lawson, 2003; Linver et al., 2002; Overstreet et al., 2005; Reed et al., 2000). According to the bioecological theory (Bronfenbrenner, 1979; 1989), transactions between parents and children often have the strongest impact on a child's development. Therefore it is critical to first examine factors that influence how and why parents are involved with their children during the early elementary school years.

Demographic Characteristics

According to Bronfenbrenner's bioecological theory, parents' characteristics (e.g. education, income, and ethnicity) have an effect on parent involvement and children's outcomes through social interactions between contexts and people within the child's

environment (Bronfenbrenner, 1989; Bronfenbrenner & Ceci, 1994). Research examining predictors of parent involvement has focused on parents' education, income, and ethnicity because they have been the demographic characteristics that are most strongly linked to parent involvement (Grolnick et al., 1997; Hill & Taylor, 2004). For example, parents who are more educated and have higher incomes are more involved in school-based activities than parents who are less educated and have lower incomes (Linver et al., 2002). However, research has rarely examined the unique impact these demographic characteristics have on parent involvement because ethnicity, education and income are often correlated and therefore usually combined in the analyses. There is evidence however, that although these demographic factors are correlated, they do not account for the same portion of variance in parent involvement. For example, a body of research has shown that maternal education is the strongest predictor of being involved at school and is strongly associated with children's academic outcomes (Cabrera et al., under review; Duncan & Brooks-Gunn, 1997). Therefore, when exploring demographic predictors of parent involvement, parents' education, income and ethnicity need to be separated out to disentangle the independent effects of these factors on parent involvement and children's academic outcomes. Looking at the unique independent effects of parent characteristics could support increased levels of parent involvement by suggesting program target areas (e.g. educating parents) for educators and policymakers. The next following sections review studies on the unique effects of parents' demographic characteristics on parent involvement.

Parents' resources. Studies on parent involvement that have examined the effects of parents' resources (e.g. education, income) on how parents are involved have found

that parents who have more resources are more involved at school. For example, research indicates that low-income, less educated parents are typically less involved in their children's school than parents who are middle and upper income and more educated (Dauber & Epstein, 1993; Patrikakou & Weissberg, 1998; Lareau, 1987; Lareau & Horvat, 1999; Lawson, 2003). Findings from these small scale studies suggest that although low income parents may be involved in at-home activities (i.e. playing games, teaching numbers and letters), they tend to feel unwelcome at school, are often unsure of how they can be involved and have a fear of embarrassment due to their lack of education, which leads to low participation rates (Patrikakou, & Weissberg, 1998; Peña, 2000; Ramirez, 2003).

In a study measuring the association between parents' education and income and parent involvement in school, Lareau (1987) observed and interviewed parents, teachers, and children in two first grade classrooms in two communities, using a non-randomly selected sample. The communities were selected based on their demographic backgrounds (i.e. socioeconomic status of parents). One school was made up of low-income, less educated families; over half of the children were white, one third Hispanic, and the rest of the children were African-American and Asian. Approximately half of the children were receiving free and reduced meals, an indicator of poverty. The second school in another community consisted of mostly middle-income, more educated European-American families. There was no free and reduced meal program offered at the school. The children in both first grade classrooms were observed and teachers and principals were interviewed. At the end of the study, a total of six in-depth interviews were conducted with parents from the two classrooms.

Results from this study indicated that low-income, less educated parents had lower attendance rates at school functions, had poorer quality interactions with teachers (e.g. stiff and awkward, short interactions, raised only nonacademic issues) and were more often unfamiliar with the school curriculum and the schools' expectations for parent involvement than middle-income parents. For example, attendance rates at parent-teacher conferences were three times lower for low-income parents than for middle-income parents. A possible explanation is that parents' work and/or child care constraints make it difficult for low-income parents to adjust their schedules and participate in school activities. When interviewing parents about their involvement in school, Lareau (1987) found that due to parents' previous personal difficulties in school and lack of educational achievement, they were doubtful of their abilities to help their children academically and instead relied solely on teachers and the school to educate their children. In stark contrast, middle-income parents with higher levels of education believed that they were partners in their children's education and that they were able to help their children academically.

Lareau (1987) also found that lower-income parents had more difficulty attending school events due to issues with transportation and child care and less money to devote to educational resources (e.g. books and tutors) than middle-income families who had enough resources to accommodate their needs (Lareau, 1987). There were no significant differences by parents' income level in the type and number of requests teachers made to promote and encourage parent involvement in their children's school, although this finding is only based on observations and interviews with two teachers. This study suggests that both parents' income levels and educational status impact the amount and type of parent involvement in school. These findings are consistent with the bioecological

theory which suggests that parents are constrained by their environment and its conditions (i.e. education and income) (Bronfenbrenner & Ceci, 1994). In essence, the proximal processes and social interactions between parents and school are affected by environmental factors in the exterior systems (e.g. the mesosystem, exosystem and macrosystem). It is possible that low-income parents may want to be involved in their children's school, but their work and time constraints and feelings of inadequacy and doubt that they can make a difference may prevent them from doing so (Carlisle et al., 2005; Chavkin & Williams, Jr., 1989; Peña, 2000; Zellman & Waterman, 1998).

There are several limitations to Lareau's (1987) findings. First, results were based on comparisons of parents from two different classrooms within two different communities and teacher and school level characteristics (e.g. teacher education, school composition, community variables, cultural values) were not controlled for when examining the variables of interest. Second, the sample for the study was based on two first grade classrooms and interviews were only conducted with six parents and two teachers. Although Lareau's (1987) study can generate hypotheses that can be tested with larger-scale studies, the small sample size makes it difficult to generalize findings to other groups. The over reliance on small select samples is a persistent methodological issue in the parent involvement field (Nye et al., 2006). This has been in part due to the lack of national datasets containing sufficient data on parent involvement. However, in recent years the availability of national datasets containing more information on parent involvement has made it possible to explore these issues with representative samples.

Third, parent involvement was defined as involvement at school and did not include educational activities undertaken at home. It is possible that low-income parents

may be more involved in home educational activities (with the exception of reading to their children which was found to be more prevalent among middle-income families) than in school based activities (Lareau, 1987). This may explain the belief that low-income parents are not involved at all in their children's school education (Chrispeels & Rivero, 2001; Delgado-Gaitan, 1991; Hill & Taylor, 2004; Smrekar & Cohen-Vogel, 2001). Hence, there is a call in the literature to examine other types of parent involvement that occur outside of the school environment and to more broadly conceptualize parent involvement during the early elementary school years.

The lack of a consensus on what constitutes parent involvement has also contributed to our lack of clarity regarding what types of parent involvement relate to what outcomes and at what point in children's school experience which leading to inconsistent conclusions within the literature. The rationale for the inclusion of parent involvement outside of school is that parents provide educational experiences for their children that might have an impact on their child's academic achievement in school. For example, parents who read to their children and take them to the library and museums are providing stimulating language-rich experiences which help children increase their vocabulary and develop more language skills. Given this reasoning, in the current study, parent involvement activities done at home, such as practicing numbers and playing games, are included in the study. In addition, parents' education and income will be examined independently to better understand the unique contributions of these parent characteristics on parent involvement. It is hypothesized that parents who are more educated and have higher incomes will be more involved at school and at home than parents who are less educated and have lower incomes.

Ethnicity. According to the bioecological theory, the context a child grows up in within the environment has an effect on his development (Bronfenbrenner, 1979; 1989). A child's ethnicity can provide the cultural context in which s/he grows up. The school's context also has an influence on children, especially when the school's culture is different from the child's cultural context in which he was raised. However, little is known about the unique influence of a person's ethnicity on parent involvement and children's academic outcomes. Theoretically, it is unclear whether the differences among parent involvement are due to ethnicity per se or instead to the differential levels of resources that parents possess (e.g. education, income). The bioecological theory (Bronfenbrenner, 1979; 1989) does not state or predict if a person's culture or resources has more of an impact on development. Nevertheless, some studies show that ethnicity does play a role in parent involvement over and above other demographic characteristics (Chrispeels & Rivero, 2001; McKay et al., 2003; Ramirez, 2003). For example, there is ample research suggesting that minority parents, specifically African-Americans and Latinos, are less involved in their children's schooling compared to European-Americans (Carlisle et al., 2005; Delgado-Gaitan, 1991; Zellman & Waterman, 1998). A possible explanation for African-American and Latino parents' lack of involvement at school could be because of discrepancies between the home and school cultures. For example, studies have shown that Latino parents often feel disconnected between their culture and their children's schools and believe the schools are unwelcoming and unreceptive to their needs (i.e. lack of Spanish speaking school personnel) (Delgado-Gaitan, 1991; Peña, 2000; Ramirez, 2003), which leads to less parent participation in school. On the other hand, there is recent evidence suggesting that although African-American and Latino parents are not as

involved in school as European-American parents, they are more involved in home involvement activities (Cooper & Crosnoe, 2007; Suizzo et al., 2007). However, most of this research has not disentangled the effects of education, income and ethnicity and often parents' education and income were not controlled for in these studies making it difficult to conclude about the unique influence of ethnicity on parent involvement. Furthermore, these studies have not examined how much of an influence home involvement has on children's academic performance in school by only examining the frequency and type of involvement activities but not measuring children's academic outcomes.

In a study to better understand Mexican American parents' involvement in their children's school education and what factors influence this involvement, Peña (2000) interviewed 28 parents as well as teachers and administrators within one school. In addition, home visits, parent meetings and informal discussions were held as part of the study's design. The majority of the students were Mexican American (95.5%) and low-income, 89% of children received free and reduced meals at school. Results indicated that parents' levels of education, language barriers, family issues, and attitudes about the school staff and other parents influenced the number of activities parents choose to take part in (Peña, 2000). Parents who spoke little to no English tended to be hesitant to voice their concerns and less likely to offer to help out in school due to their limited language abilities and knowledge about the educational system. In addition, parents' inability to speak English and not understanding school procedures and practices led to parents feeling left out of groups and activities, and teachers were resistant to encourage parent involvement because it required additional work for them (Peña, 2000). Results from the study provide some insight into how ethnicity influences parents' involvement in their

children's school education. Nevertheless, findings were based on a small, nonrandomized sample of 28 parents and the majority of parents and children were low-income and less educated. It may be that parents in this study were less involved due to the lack of resources available to them rather than their ethnicity. There is a need for more research to replicate these findings using larger, more representative sample sizes of ethnic minority parents and controlling for parents' resources.

Similar to findings from Peña's (2000) study, findings have been reported with African-American parents feeling unwelcome at school and feeling that school expectations differ from their cultural and racial expectations (Lareau & Horvat, 1999; McKay et al., 2003). Such negative feelings lead to negative family-school relationships and decreased levels of involvement. Lareau and Horvat (1999) interviewed 24 parents, 12 European-American and 12 African-American and found that due to the overall racial context within the community, many of the African-American parents felt a lack of trust and confidence in the school system which they perceived as insensitive to their needs. McKay and colleagues (2003) similarly found that racial socialization processes (e.g. cultural pride, religiosity) among African-American parents were related to less parent involvement in their children's education. These findings can be explained by Bronfenbrenner's bioecological theory which suggests that depending on the strength of the relationship between people (i.e. parents) and context (i.e. schools and culture) in the child's environment the relationship between the two will lead to either favorable or unfavorable conditions for development (Bronfenbrenner, 1989; Bronfenbrenner & Ceci, 1994). Therefore, if parents perceive their children's school environment as not accepting of their ethnicity and culture, it will lead to unfavorable conditions in which parents and

schools interact (e.g. feelings of being unwelcome and not accepted) which lead to lower levels of parent involvement in school. Findings from these studies, however, are focused on differences in parent beliefs and expectations about school and how that is associated with ethnicity and parent involvement. More research is needed to explore an association between ethnicity and parent involvement activities while controlling for parent beliefs and perceptions of the school to understand how ethnicity is uniquely associated with parent involvement. Overall, although there is evidence that parents' ethnicity may impact parent involvement, the majority of studies do not control for parents' resources (e.g. education, income) making it difficult to ascertain the unique contribution ethnicity has on parent involvement.

In sum, the literature reviewed illustrates that there are associations among parents' education, income, and ethnicity and their involvement in their children's school. Parents who are less educated and have lower incomes may be less involved due to both work and scheduling conflicts and feelings of being unable to help and support their children educationally (Hoover-Dempsey & Sandler, 1995; Walker et al., 2005). On the other hand minority, low-income parents may be less involved at school due to cultural and language barriers between home and school (Peña, 2000; Ramirez, 2003). These findings, however, are based on small studies and do not disentangle the effects of education and income from ethnicity. Additionally, these studies examine school-based parent involvement to the exclusivity and do not include home-based involvement such as reading to children and playing games. In the current study, parents' education, income, and ethnicity are examined independently in relation to parent involvement both at school and at home and to children's reading and math outcomes.

Psychological Characteristics

Other important predictors of parent involvement during the early elementary school years are parents' psychological characteristics specifically their beliefs about their children's academic abilities, their beliefs about own abilities to help their children succeed (e.g. self-efficacy, beliefs) and about school (e.g. perceptions of the school, beliefs about barriers to involvement). This section explores the influences of parents' beliefs about school and involvement on parent involvement behaviors. Although there is a growing literature focused on the influence of parents' self-efficacy on parent involvement, it will not be incorporated into this study's review due to data limitations.

In accordance with the bioecological theory which takes both the individual and the context in which s/he lives into account jointly (Bronfenbrenner, 1989), parent beliefs, which may be a result of previous or current experiences, are expected to have an effect on involvement by influencing a parent to interact favorably or unfavorably with his/her environment (e.g. school). Research suggests that parent beliefs are strong predictors of parent involvement (Dauber & Epstein, 1993; Fan & Chen, 2001; Green et al., 2006; Grolnick, & Slowiaczek, 1994; Overstreet et al., 2005; Smrekar & Cohen-Vogel, 2001; Zellman & Waterman, 1998), however, not all studies control for parents' demographic characteristics such as education, income and ethnicity when testing the effects of beliefs on parent involvement (Hoover-Dempsey et al., 2005). For example, low-income, less educated parents typically have lower self-efficacy about their abilities to help their children academically and are less involved in school activities than middle-income, more educated parents (Hoover-Dempsey et al., 1992; Hoover-Dempsey et al.,

2005). Therefore, it remains unclear what the unique contributions of parents' psychological characteristics are over and above their demographic characteristics.

Parents' perceptions of school and involvement. An important predictor of parent involvement is parents' perceptions of their child's school and the schools' approachability. This association is in accordance with Bronfenbrenner's bioecological theory (1979; 1989) which posits that social interactions between people and contexts in the environment can create favorable or unfavorable conditions for the child. Parents who have positive perceptions of their child's school and do not perceive themselves having many barriers to being involved at school are generally more active in school-based activities (NCES, 1996; Overstreet et al., 2005, Dauber & Epstein, 1993).

In a study with low-income African-American parents, Overstreet and colleagues (2005) examined predictors of parent involvement in school (i.e. demographic characteristics, parents' educational aspirations for their children, perceptions of their child's school and school involvement) among parents of children ranging from kindergarten through 12th grade. The sample included 159 African-American mothers or female caregivers who were living in poverty and had low levels of education (96% had less than or equal to a high school education). Residents within the community were recruited and trained as interviewers for the study and randomly recruited African-American participants by knocking on doors within the community and distributing fliers (Overstreet et al., 2005). Participants were interviewed using a community survey which was part of a larger project in the area. Surveys included questions about parents' age, educational level and current employment status, community engagement (i.e. voting in last election, active in church and community center) and educational aspirations for both

themselves (e.g. if they had a desire for occupational training) and for their child (e.g. how far in school they wanted their child to go) (Overstreet et al., 2005). Parents were also asked about their perceptions of their child's school (e.g. if the school listens to them, if the school sponsors activities for parents) and about involvement in school activities (i.e. visited child's class, attended events, was a PTA member, and how often they visited the school).

To assess the impact of these predictors on school involvement, measured as attending events or not, correlations and two regression analyses were conducted, one for parents of elementary school aged children and the other for middle and high school aged children. Results indicated that parents' psychological characteristics such as parents' educational aspirations for themselves and their children and parents' perceptions of school were significantly correlated with parent involvement in school for parents with elementary school aged children (Overstreet et al., 2005). The regression analyses showed that for parents of elementary school aged children, parents who had higher educational aspirations for their children, were active in the community center and had positive perceptions about their child's school were more involved at school compared to other parents (Overstreet et al., 2005). However, parents' perceptions of the child's school (e.g. school listens to them, provides activities for parents) was found to be the most powerful predictor of school involvement ($B = .43, p < .001$). Parents' demographic characteristics (i.e. age, education, employment status) were not significant. Similar findings emerged for parents of middle and high school aged students, although parents' employment status was also significant for parents with older children.

These findings suggest that parents' beliefs about their child's school and its receptivity are very influential in parents' decisions to be involved at school which are consistent with previous findings (Dauber & Epstein, 1993). Nevertheless, while this study examines a unique homogenous population of parents (i.e. low-income, less-educated African-Americans) it is difficult to generalize these findings to other populations who are of different ethnicities and have higher educational and income levels. While Overstreet and colleagues (2005) controlled for demographic characteristics such as education and employment status, the effects of parents' perceptions of school on parent involvement need to be examined in other ethnic groups as well.

Another limitation of the study was that school-based parent involvement was only examined not home-based involvement activities. Recent studies have found that low-income minority parents, especially African-American and Latino, tend to be more involved in home-based activities than school-based activities (Anderson & Milke, 2007; Crosnoe & Cooper, 2007; Suizzo et al., 2007) which stresses for the need for researchers to further explore what parents do in the home as well as their involvement at school and how parents' perceptions of school relate to home involvement. In accordance with Dauber and Epstein's (1993) and Overstreet and colleagues (2005) findings, it is hypothesized that parents who have negative perceptions of their children's school will be less involved in school-based activities than parents who have more positive perceptions of school. Because there is no empirical evidence to support the association between parents' perceptions of school and home involvement, a hypothesis is not provided.

In summary, studies exploring parents' demographic and psychological characteristics as predictors of parent involvement, demonstrate that less educated, low-income, minority parents tend to be less involved in school than more educated, middle-income European-American parents. Studies also suggest that negative parent beliefs about involvement (e.g. school unwelcome, participation not beneficial) are associated with less involvement, although these findings may be confounded with education and income (Hill & Taylor, 2004; Smrekar & Cohen-Vogel, 2001). The majority of research on parents' perceptions of school and involvement is based on small scale qualitative studies which provide more in-depth information about parent involvement but does not yield results that generalize to larger populations. For purposes of the current study, both parents' demographic and psychological characteristics are explored in relation to parent involvement and children's reading and math outcomes.

Predictors of Children's Reading and Math Outcomes

In addition to children's academic abilities, school factors and teacher characteristics, parents play a large role in children's success in school. Findings indicate that parents' demographic (e.g. education and income) and psychological (e.g. beliefs about children's achievement) characteristics and involvement in school affect children's reading and math achievement as parents stress the importance of learning and school through their actions and beliefs (Comer & Haynes, 1991; Dauber & Epstein, 1993; Fan & Chen, 2001; Green et al., 2006; Griffith, 1996; Grolnick & Slowiaczek, 1994; Kohl et al., 2000; Ritblatt et al., 2002; Smrekar & Cohen-Vogel, 2001; Snow et al., 1991; Zellman & Waterman, 1998). In addition, according to the bioecological theory (Bronfenbrenner, 1979; 1989) parents impact children's success in school both directly,

through parent-child interactions, and indirectly, through parent-school interactions or involvement. This section focuses on predictors of children's reading and math outcomes, because during the early elementary school years (i.e. kindergarten through third grade) children must master the necessary reading and mathematics skills for later academic success in school. First studies are reviewed that have examined the direct associations between parents' demographic and psychological characteristics and children's reading and math outcomes. Next, studies that examine the association between parent involvement in school and children's academic outcomes are discussed. Meta-analytic studies that have examined the overall impact of parent involvement on children's academic outcomes, providing an overall picture of the literature from the 1970s to 2000 will first be explored. During these last 30 years, parent involvement has received increased attention in the educational reform movement as a way to increase student achievement. Then other studies focusing on the independent effects of involvement on reading and mathematical outcomes for young children are examined.

Parents' Demographic and Psychological Characteristics

Currently there is a wide academic achievement gap between children who live in low-income, less educated households and children who live in middle or upper-income households (National Governor's Association, 2005; O'Connor et al., 2005). Children who live in poverty are more at risk for both academic and behavioral problems in school compared to children who live above the poverty line (Guo & Harris, 2000; Linver et al., 2002). In addition, parents' educational attainment has been identified as one of the major predictors of children's academic achievement (Duncan & Brooks-Gunn, 1997; Pomerantz & Dong, 2006; Zellman & Waterman, 1998).

Several studies have examined the influence of family income on children's intellectual development and found a significant association between the income level and children's cognitive abilities (Guo & Harris, 2000; Linver, et al., 2002). For example, Linver and colleagues (2002) examined the relation between family demographic characteristics (i.e. income), family processes (e.g. mother-child interactions, parenting styles), and children's cognitive and behavioral outcomes by following children from birth to age five. Results indicated that family income was associated with both children's cognitive and behavioral outcomes. In a similar study, Guo and Harris (2000) examined the effects of poverty on cognitive development with children between the ages of 14 to 21 and found an association between poverty status and poor child cognitive outcomes. Nevertheless, both studies found that parent behaviors (e.g. involvement with child and cognitively stimulating activities) mediated the association between parent income and children's outcomes. Therefore, it appears that although parents' demographic characteristics (e.g. income and education) are associated with children's academic outcomes, parent involvement may be the mechanism which mediates the association between the two.

Parents' psychological characteristics such as parents' beliefs about their children's academic abilities have also been found to be associated with children's academic achievement in school. Parents' beliefs about their children's academic abilities and educational success have direct and indirect effects on children's academic achievement (Cabrera et al., under review; Eccles, 1992; Overstreet et al., 2005; Pomerantz & Dong, 2006; Pomerantz, Wang & Ng, 2005). Parents' perceptions of their children's abilities shape their behavior toward their children, which can have an impact

on children's self-efficacy and their performance in school (Eccles, 1992; Frome, & Eccles, 1998; Pomerantz & Dong, 2006). For example, parents who believe their children are doing well academically convey that to their children which leads children to have better self-perceptions and perform better in school (Eccles, 1992; Frome & Eccles, 1998). Moreover, parent beliefs about their children may moderate the association between parent demographic characteristics and children's academic outcomes. Cabrera and colleagues (under review) found that parents who believed their children are doing better than others in school had children who scored higher on reading and math outcomes than parents who believed their children were doing worse even when controlling for parents' level of education. Similarly, research indicates that parent beliefs about how far in school they believe their child will go are associated with parent involvement behaviors and children's academic outcomes (Hoover-Dempsey et al., 1992; Overstreet et al., 2005; Reynolds, 1998). This may be because parents convey their expectations of school success to their children and children internalize these beliefs and attitudes about school.

To examine how parents' perceptions of their children's academic competence influence children's achievement, Pomerantz and Dong (2006) surveyed 126 fourth, fifth and sixth grade children in school and their mothers through questionnaires mailed home. Almost all children and mothers were European-American (99%), 91% of mothers were married and 26% had a college degree. Both mothers and children were asked to complete questionnaires and children's grades were obtained from the school. Maternal questionnaires contained questions about their perceptions of their child's academic competence in different subjects (i.e. how good is your child in math) and in comparison

to other children in the class (i.e. rating the child's position in class for each school subject- 1= at the bottom, 7= at the top). Mothers were also asked about their beliefs about the stability of competence (e.g. how much they agreed that you can learn new things, but can't really change basic intelligence). Lastly, mothers were asked about their depressive symptoms and educational attainment (Pomerantz & Dong, 2006). Children completed questionnaires asking about their perceptions of their own academic competence (i.e. how good they were in each subject and in comparison to other children in their class), attributions they make for failure or success in their performance, and their mastery orientation (i.e. to measure intrinsic and extrinsic motivation). In addition, to measure perceived academic competence, children were presented with a description of two types of children who differed on their academic competence (i.e. children who believe they are smart and children who do not believe they are as smart as others) and asked which child they liked better and which they were most like (Pomerantz & Dong, 2006). Lastly, children's self-esteem and depressive symptoms were assessed.

Results indicated that mothers' perceptions of their children's academic competence acted as self-fulfilling prophecies for their children only when mothers believed that competence is fixed. That is, mothers who believed that competence does not change over time and believed their children were doing poorly had children who did worse academically. On the other hand, mothers who believed competence was more malleable and changed over time, their perceptions of their child's competence did not predict children's academic achievement (Pomerantz & Dong, 2006).

These findings suggest that mothers' perceptions of their children and of academic competence influence their children academically, but they need to be

interpreted with caution. Although Pomerantz and Dong (2006) incorporate both child and parent data into the study, they offer no explanation for the association between mothers' perceptions of academic competence and children's achievement. Nevertheless, these findings indicate that there is a need to examine the direct effects of parents' beliefs on children's academic outcomes. There are several limitations to the study. First, the study was 99% European-American and thus findings cannot be generalized to other races or ethnicities. It may be that in some cultures, this pattern of self-fulfilling prophecies does not exist and parent beliefs do not have the same kind of impact on children's academic achievement. Second, only mothers completed questionnaires about competence and the majority of children were living in two parent, married households. It is expected that fathers' perceptions of their children's competence and beliefs about the stability of competence also influence children's success in school. According to the bioecological theory, it is important to consider all of the environmental influences in a child's environment, which includes the proximal processes of the relations between people and context (Bronfenbrenner & Ceci, 1994). It is possible that while a mother may perceive her child to have low competence in a particular subject area, a father may feel the opposite, buffering the effects of mothers' beliefs on the child's academic abilities.

Third, to assess academic achievement, children's grades in school were collected rather than using a standardized assessment measure. Child grades, in contrast to standardized scores, may be more susceptible to teacher influences. For example, a parent who believes her child is doing well in school and believes that competence does not change, may convey those beliefs to the teacher who thus also expects the child to do well and grades the child accordingly. Hence, it is more methodologically sound to use a

standardized measure of children's outcomes that are less susceptible to teacher or school level influences. The current study examines the impact of parents' beliefs about their children's academic abilities and how far they will go in school on children's standardized reading and math outcomes. It is hypothesized that parents who have positive beliefs about their children's reading and math achievement will have children who have higher reading and math outcomes. In sum, parents' demographic and psychological characteristics have been found to be associated with children's academic outcomes. More research is needed, however, to examine parent involvement as a mechanism which mediates the association between parents' characteristics and children's academic outcomes.

Parent Involvement

According to Bronfenbrenner's bioecological theory (Bronfenbrenner, 1979; 1989), parent involvement in school impacts children directly through relations between parents and children and indirectly through social interactions between parents and schools. These relations are posited to have either favorable or unfavorable effects depending on the type of interaction and the characteristics of the people and contexts in which the interaction occurs. Parent involvement is expected to have positive effects on children's academic outcomes as children see their parents interacting positively with the school which conveys the importance of academic success to them. Research has indicated a direct positive association between parent involvement in early elementary school (e.g. helping with homework, attending school events) and children's reading and math outcomes (Berger, 1991; Epstein & Dauber, 1991; Grolnick & Slowiaczek, 1994; Kohl et

al., 2000; Nye et al., 2006; Ritblatt et al., 2002; Sheldon & Epstein, 2005; Snow et al., 1991; Zellman & Waterman, 1998).

Several meta-analyses assessing the impact of parent involvement on children's academic outcomes have supported the proposition that parent involvement positively influences children's performance in math and reading (Jeynes, 2003, 2005; Nye et al., 2006). For example, Nye and colleagues (2006) analyzed nineteen studies and found that overall parent involvement, defined as "parental participation in the educational processes and experiences of their children" (pp. 4), had a positive and significant effect on children's reading and math outcomes. Nevertheless, the reading outcome effect sizes were substantially larger than the math outcome effect sizes; this is in part due to the fact that more studies measured reading outcomes than math outcomes. In addition, during the early elementary school years, both classroom instruction and parent involvement activities are generally geared to reading which may account for the different effect sizes.

In another meta-analysis designed to explore the relation between parent involvement in school and children's academic achievement in urban samples of elementary school aged children (i.e. kindergarten through sixth grade), 41 studies were examined (Jeynes, 2005). The review found that parent involvement, defined as "parent participation in the educational processes and experiences of their children" (pp. 6), (e.g. homework, communication with child about school, general activities, parent expectations), was positively associated with children's academic outcomes regardless of the child's race, gender, or cultural background. The meta-analysis also concluded that parent involvement programs that were designed to enhance parent involvement in school and encourage participation were effective in improving child outcomes. Parent

involvement, however, had the strongest association with academic achievement when parents held pre-existing positive expectations and beliefs about their involvement (Jeynes, 2005). Thus, parent beliefs influenced the type and amount of parent involvement which in turn influenced academic outcomes for their children.

There are several limitations to these two meta-analytical studies. First Nye and colleagues (2006) limited the analyses to those studies that defined parent involvement as parents being actively engaged with their children. Studies were excluded if parents participated in activities without their children (e.g. parent-teacher conferences, and parent-teacher association meetings); activities which are considered under the umbrella of parent involvement in other studies. This lack of consensus within the field about the definition of parent involvement leads to inconsistent conclusions about the size of the effect of parent involvement. Second, although Jeynes (2005) limited his review to studies of children living in urban settings, he did not describe the demographic characteristics of the urban settings. Living in an urban environment is not synonymous with being low-income and children in these settings could have very different demographic characteristics that needed to be explored in more detail. Since parent demographic and psychological characteristics do have an effect on parent involvement, it is necessary to know the population of children and parents being studied in order to accurately interpret and understand the findings.

Other studies exploring the association between parent involvement and children's academic outcomes have yielded similar results to the meta-analytic studies. One main reason the association between parent involvement in school and child outcomes cannot be better delineated is the lack of consensus about the definition of

parent involvement. In addition, there is a lack of specificity in the evaluation of child outcomes being measured. Researchers use different types of outcomes (e.g. reading, math, science, social/emotional development) as their outcome variables, which have led to blurred results and inconsistencies in the findings (Nye et al., 2006). Since the No Child Left Behind Act has stipulated that all students increase their mathematical and reading performances, it is timely to examine the connections between parent involvement and these academic outcomes independently (Sheldon & Epstein, 2005).

To better understand how parent involvement is related to academic outcomes, Zellman and Waterman (1998) collected data on 193 second and fifth grade children from six elementary schools in two different districts in an urban area. Participants represented a diverse population of Latino, European-American, African-American and Asian-American mothers and children. Economically, the five schools varied, from 38% of children receiving free and reduced meals in one school to 95% of children receiving these services in another school. Mothers were interviewed about their involvement at school (i.e. attendance at school events and PTA meetings, volunteering, employment at school and participation on council or advisory committee) and involvement with homework, their enthusiasm for being a parent (e.g. whether the child was breastfed, the mother's assessment of the rewards of parenting compared to before becoming a parent, and her report of her own effectiveness as a parent) and their parenting style (e.g. positive, authoritarian, indifferent). Teachers of each participating child completed a questionnaire about the child and the school climate. Children were administered an intelligence test (Kaufman Brief Intelligence Test (K-BIT)) and children's reading outcomes were assessed.

Zellman and Waterman (1998) found that parent involvement in school, parent characteristics (e.g. ethnicity) and children's IQ scores predicted higher reading scores ($R^2 = .25$). However, when controlling for the child's ethnicity, child's intelligence, and the family's socioeconomic status, parent involvement only made a slight contribution to better teacher ratings of the child and better test scores ($\Delta R^2 = .03$) (Zellman & Waterman, 1998). Nevertheless, parent involvement differed depending on the perceived needs of the child. That is parents helping with homework was associated with children's reading scores, but parents who had children with higher IQs, who appeared not to need as much help, parents reported less involvement.

The findings from Zellman and Waterman's (1998) study are consistent with previous literature suggesting that parent involvement is associated with children's academic achievement. However, Zellman and Waterman (1998) found that parents' enthusiasm, parenting style and demographic characteristics are stronger predictors of children's reading scores and academic outcomes than parent involvement in school. This may be because parent involvement may be a mediating mechanism between parents' characteristics and children's academic outcomes. According to Bronfenbrenner's bioecological theory (1979), parent characteristics and involvement are associated with children's outcomes through a bidirectional relationship, which was found in this study. Results indicated that it was not simply that parents who were more involved had children who did better. Instead, if parents believed that their children were already successful in school, they would become less involved due to a decrease in need to help their children (Zellman & Waterman, 1998).

Nevertheless, this study has limitations. First, to assess parent enthusiasm, the authors only asked three questions (i.e. was the child breastfed, what was the mother's assessment of the rewards of parenting compared to before she was a mother, and how the mother rates her own effectiveness of being a parent) which resulted in a low alpha and does not directly relate to school based activities (Zellman & Waterman, 1998). There was no explanation for choosing these three items to measure parenting enthusiasm and the items were not correlated with any parent demographic variables except for income. Second, when assessing parent involvement activities, only involvement in school and helping with homework were measured. More research is needed to examine how other non-school involvement experiences (e.g. practicing numbers, singing to child, taking child to the library) are associated with child academic outcomes. Although this study has important implications for understanding the effects of predictors of involvement and involvement itself on child academic outcomes, more accurate measures need to be applied to better understand these associations.

In another study, Sheldon and Epstein (2005) focused on the impact of parent involvement on children's mathematics achievement. Their sample included eighteen schools (elementary, middle and high school) across the country located in urban and rural settings and with an ethnically diverse group of students. Children were in third through ninth grade. All schools in the study were part of an ongoing project examining the effects of family and community involvement on student outcomes (Sheldon & Epstein, 2005). School characteristics and involvement practices were reported and achievement test data and report cards for the students were obtained. Results indicated that three school practices were the most effective in increasing mathematics

achievement: giving parents contact information for the mathematics teachers, scheduling conferences with parents of children who were struggling in math, and providing additional information about students' progress in math on the report cards. According to Bronfenbrenner's bioecological theory, transactions at the mesosystem level (i.e. scheduling conferences and providing additional information to parents) are expected to impact children and their development through proximal processes (Bronfenbrenner, 1989). It is within this ecological niche (i.e. region of the environment that is favorable to strengthening the relationship between the person and context) that positive child academic outcomes are experienced. That is, by encouraging more involvement and positive relations between parents and school, parents become partners with teachers in their children's learning which leads to increases in children's math achievement.

Findings also indicated that parent involvement at home which included learning and teaching was significantly associated with improvements in mathematics achievement (Sheldon & Epstein, 2005). Home learning activities included homework assignments that students were required to work with a family member in order to complete. No other types of involvement were found to be significantly associated with children's math scores (e.g. volunteering, parenting workshops). As Bronfenbrenner's bioecological theory suggests, when there is a positive person-context relationship which is created through activities such as parents being involved with homework assignments, children's development is enhanced (i.e. they do better academically) (Bronfenbrenner, 1989). Although the study has important implications for how parents can help their students academically at home, these findings need to be replicated with larger samples and look more specifically at difference related to the age of the child.

Even though the majority of the research indicates that parent involvement is positively associated with children's academic outcomes, a few studies have found that it has little to no effect on academic outcomes (Barnard, 2004; Domina, 2005; Mattingly, Prislin, McKenzie, Rodriguez, & Kayzar, 2002; Perez Carreon et al., 2005). For example, Mattingly and colleagues (2002) reviewed 41 studies of parent involvement intervention programs and found parent involvement not to be significantly associated with child outcomes (i.e. academic achievement, behavior, self-esteem, attendance) and found little evidence that parent involvement is effective in improving student learning. However, Mattingly and colleagues (2002) included studies which incorporated a wide array of predictors and outcome variables, which conceptually measured very different things. For example, the studies in the meta-analysis examined included not only parent involvement activities (i.e. volunteering, communicating with school) but also peer tutoring and alternative curricula as predictors of child and parent outcomes. The outcomes variables ranged from parenting skills and home learning to student achievement, student self-esteem and classroom behavior. Mattingly and colleagues (2002) stated that their findings were more likely a result of methodological and design issues of the programs rather than the involvement activities of the parents, indicating the need for more consistent and accurate methodologies in parent involvement studies. The vast differences in intervention techniques and outcomes measured confound the cause-effect relationship between parent involvement activities and children's academic outcomes (Mattingly et al., 2002). Furthermore, many of the studies included in the meta-analysis had design issues, such as only using posttests with interventions, which led to threats of validity, and about a third of the studies used only qualitative data and did not conduct any

statistical analyses. These methodological and design issues are perhaps a result of a lack of understanding about how parent involvement serves as a mechanism for improving child outcomes, leading to different methods of program implementation and child assessment.

Another study examined the longitudinal effects of parent involvement in school during the early elementary school years (i.e. up through fourth grade) on children's academic and behavioral outcomes four years later, among a diverse group of 1,445 children (Domina, 2005). Participating in the National Longitudinal Study of Youth 1979, parent involvement was measured parent participation in six involvement activities. Four of the activities were school based (i.e. attending parent-teacher conferences, participating in PTA meetings, volunteering in class and outside of class on trips), while the other two parent involvement activities were at home and were reported by the children who were asked how often their parents help with their homework and how often their parents check their children's homework (Domina, 2005). Children's academic achievement and behavioral problems were measured using two assessments, the PIAT and BPI. Socioeconomic characteristics (i.e. income, education, and level of occupational status), child's race, grade level and gender, type of school, and family type (e.g. two parent family) were controlled for in the study.

Domina (2005) found participation in the six parent involvement activities were associated with higher scores on achievement tests and lower instances of behavioral problems for young children. However, when controlling for parent characteristics and children's previous academic achievement, the involvement activities no longer

significantly predicted children's academic outcomes but remained significant for children's behavioral problems (Domina, 2005).

This inconsistency in the literature about the effect of parent involvement on children's academic outcomes can in part be explained by the differences of theoretical conceptualizations (i.e. different operational definitions of involvement, inconsistent use of measures of involvement) (McNeal Jr., 2001). For example, Domina (2005) mostly used measures of parent involvement that involved monitoring and assessing children, such as checking homework and attending conferences. It is possible that other types of parent involvement activities that were not assessed are related more to academic outcomes (e.g. going to the library, reading to children, practicing numbers). It may also be that parent involvement is only effective for some children under certain conditions which are yet to be explored. Further analyses on the specific effects of parent involvement on young children need to be conducted.

In addition, although this sample was followed across time for four years, elementary school aged children (fourth grade and below) were grouped together in the analyses. Young children's developmental changes need to be considered. While researchers have reported different influences of involvement between young children (i.e. elementary and middle school) and adolescents (Feldman & Wentzel, 1990; McNeal, 1999; 2001; Wentzel, 1994), studies have not examined potential differences in the influence of involvement among younger children. We need to better understand how parent involvement activities, both at school and at home, across the first few years of school influence young children's academic achievement at specific ages. In sum, there remains a lack of consensus about the strength of the effect of parent involvement on

children's reading and math outcomes, in part due to methodological and definitional inconsistencies. In the current study, children's third grade reading and math achievement are explored in relation to parent involvement, at school and at home, across the first four years of school using a large sample of young children. This will allow for a better analysis of the impact of parent involvement on children's academic outcomes, examining how different types of involvement have different effects on children's academic achievement.

Conclusion

The literature reviewed herein was fairly consistent in its findings that parents' education, income, ethnicity and parent beliefs (e.g. beliefs about their children) are associated with parent involvement (e.g. attending school conferences, volunteering, helping with homework) and that parent involvement leads to increased reading and math scores for children (Jeynes, 2005; Lareau, 1987; Peña, 2000; Reed et al., 2000; Sheldon & Epstein, 2005). Parents who are less educated, have lower incomes and are minorities (e.g. African American and Latino) are less involved in school-based activities (Lareau, 1987; Peña, 2000). Parents who believe their children are doing well and can improve academically, have children who get higher grades (Ng et al., 2004; Pomerantz & Dong, 2006). In addition, children whose parents are more involved in their children's education (e.g. involvement at school and at home) have better outcomes in reading and math (Jeynes, 2005; Nye et al., 2006).

There are several limitations to the literature on parent involvement. First, there is a lack of a consensus about the definition of parent involvement; while the majority of researchers define involvement as parent activities done at school (e.g. parent-teacher

conferences, Back to School Nights), other studies include home-based involvement activities such as reading to children and helping with homework (Epstein, 1985; Epstein & Dauber, 1991; Griffith, 1996; Grolnick et al., 1997). Second, while few studies have used Bronfenbrenner's bioecological theory, most of the field is atheoretical. The bioecological theory allows for the exploration of multiple components within a child's environment that may influence academic achievement and thus can help the field to understand how parent involvement serves as a mechanism for improved outcomes. Third, the overwhelming majority of parent involvement literature is based on qualitative and intervention studies using small, unrepresentative samples (Epstein & Dauber, 1991; Fan & Chen, 2001). While these intervention studies offer insights into the factors that promote parent involvement and generate hypotheses that can be tested with larger samples, the generalizability of their findings are limited. Fourth, parents' education, income and ethnicity need to be disentangled from one another to understand the unique effects and contributions of each predictor on parent involvement and children's academic outcomes. Fifth, although there is a growing body of parent involvement research on young children, there continues to be a lack of longitudinal research on parent involvement across the early elementary school years. By assessing parent involvement overtime, it enables researchers to understand the effects of involvement overtime on children's academic outcomes. Lastly, there are several associations between parents' characteristics, involvement and child outcomes that have remained unexplored. For example, although studies suggest that parents' beliefs about their children's academic performance are associated with their children's school achievement (Pomerantz & Dong, 2006), it is unclear how these beliefs are associated with parent

involvement. In addition, parent involvement, at school and at home, has not been examined as a mediator between parents' demographic and psychological characteristics and children's academic outcomes.

Overview of Study

The current study uses a longitudinal, nationally representative sample of elementary school children (kindergarten through third grade) to examine the influence of parents' demographic (i.e. education, income, ethnicity) and psychological (i.e. beliefs about their children's academic abilities, beliefs about school and barriers to involvement) characteristics on parent involvement, both at school and at home. It also examines how parents' characteristics and parent involvement are associated with children's reading and math outcomes. This research will contribute to our understanding about the longitudinal impact of predictors of involvement and parent involvement across the first four years of school on children's reading and math scores in third grade. The findings from the current study have important implications for how policymakers and practitioners promote and encourage parent involvement in a way that is meaningful to children's academic achievement.

The current study addresses the following research questions and tests the corresponding hypotheses:

Research Question 1. What are the effects of parents' demographic characteristics when children are in kindergarten and parents' psychological characteristics when children are in kindergarten and first grade on children's third grade reading and math outcomes?

Research examining the impact of parents' characteristics on children's academic outcomes has found that children whose parents are more educated, higher-income and are European-American do better academically than children whose parents are less educated, lower-income and minority (Lawson, 2003; Linver et al., 2002). More specifically, parents' level of education has been shown to have the strongest impact on children's academic achievement (Duncan & Brooks-Gunn 1997). Parents' beliefs about their children have also been shown to have direct effects on children's academic achievement; parents who believe that their children are doing well in school and that children's competence does not change have children who are doing better academically than parents who do not hold such positive beliefs (Pomerantz & Dong, 2006). Additionally, there is an association between parents who believe their children will go far in school (e.g. college, advanced degrees) and children's reading and math achievement (Reynolds, 1998).

Hypothesis 1: Parents' demographic characteristics, especially parents' education, will have an effect on children's third grade reading and math outcomes.

Hypothesis 2: Parents who have positive beliefs about their child's reading and math achievement compared to other children will have children who have higher third grade reading and math outcomes in third grade than parents who do not have positive beliefs about their children's achievement.

Hypothesis 3: Parents who believe their children will go far in school will have children with higher third grade reading and math outcomes than parents who do not believe their children will go far in school.

Research Question 2. What are the effects of parents' demographic characteristics (i.e. education, income, and ethnicity) when children are in kindergarten and psychological characteristics (i.e. beliefs about their children's academic performance, perceptions of school and barriers to involvement) when children are in kindergarten and first grade on parent involvement averaged across the first four years of school (i.e. kindergarten-third grade)?

The parent involvement literature has found strong associations between parents' demographic characteristics and parent involvement. Specifically, parents who are less educated, lower-income and minority are typically less involved in school-based involvement activities than more educated, higher-income, European-American parents (Lareau, 1987; Lareau & Horvat, 1999; Peña, 2000; Perez Carreon et al., 2005; Ramirez, 2003). However, less is known about the effect of parents' characteristics on home-based involvement activities with early elementary school aged children. While there is little research to date on the impact of parents' beliefs about their children's academic achievement on parent involvement, research indicates that parents who have negative perceptions of their child's school and perceive many barriers to involvement are less involved in school-based activities (Dauber & Epstein, 1993; Hill & Taylor, 2004; Overstreet et al., 2005; Reed et al., 2000).

Hypothesis 1: Parents who are more educated and have higher incomes will be more likely to be more involved at school and at home than parents who are less educated and have lower incomes.

Hypothesis 2: Parents who have negative perceptions about their children's school (e.g. school does not provide volunteer opportunities) and perceive many barriers

to being involved (e.g. work conflicts, transportation issues) will be less involved in school-based activities than parents with positive perceptions about the school and who have fewer barriers to involvement.

Research Question 3. Controlling for parents' demographic and psychological characteristics, what is the association between parent involvement at school and at home during the early elementary school years and children's third grade reading and math outcomes?

Parent involvement has been shown to be strongly associated with children's academic outcomes (e.g., reading, math), especially when children are in elementary school (Comer & Haynes, 1991; Griffith, 1996; Grolnick & Slowiaczek, 1994; Kohl et al., 2000; Ritblatt et al., 2002; Snow et al., 1991; Zellman & Waterman, 1998). Although most studies have only explored school-based involvement, there is some evidence that home activities such as reading to children and helping with homework are also associated with children's reading and math outcomes (Ng et al., 2004; Sheldon & Epstein, 2005).

Hypothesis 1: Parents who are more involved in both school-based and home-based activities will have children with higher reading and math scores in third grade than parents who are less involved even when controlling for parents' demographic and psychological characteristics.

Research Question 4. To what extent does parent involvement mediate the effect of parents' demographic and psychological characteristics on children's third grade reading and math outcomes?

Although there are no studies to date that have examined parent involvement as a mediator between parents' demographic and psychological characteristics and children's academic outcomes, there is evidence that there is an association between parents' demographics and involvement and between involvement and children's outcomes. Moreover research has found that cognitive stimulation in the home (e.g. mother reading to child, books and magazines in the home) mediates the effects of poverty on children's intellectual development (Guo & Harris, 2000). Therefore, it is expected that parent involvement serves as a mediating variable between parents' demographics and psychological characteristics and children's academic outcomes.

Hypothesis 1: Parent involvement will partially mediate the association between parents' demographic and psychological characteristics and children's third grade reading and math outcomes.

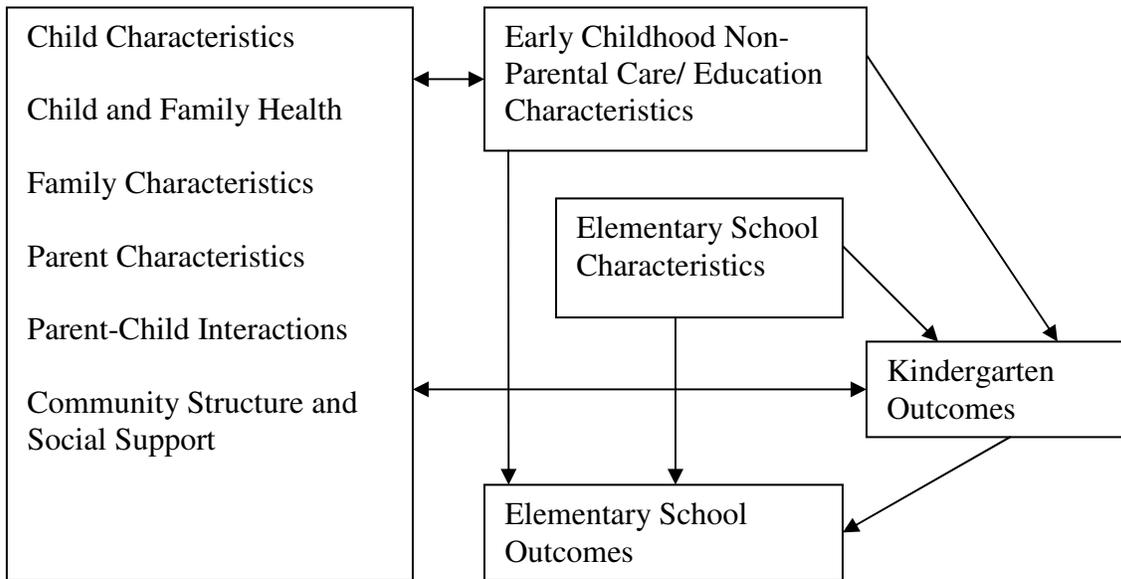
CHAPTER III

Method

The current study uses data from the Early Childhood Longitudinal Study-Kindergarten Class of 1998-99 (ECLS-K). The ECLS-K is a multisource, multimethod, longitudinal, nationally representative study designed to explore the educational experiences of children and their academic and social outcomes (see Figure 2) (US Department of Education, 2002). The ECLS-K sample includes approximately 22,000 children who attended approximately 1,000 kindergarten programs during the 1998-99 academic year.

The design of the ECLS-K study is a dual-frame, multistage sample (US Department of Education, 2004). First, 100 Primary Sampling Units (PSUs, counties or groups of counties within the United States) were drawn and then both public and private schools were selected from within the PSUs. Data were collected beginning in the fall of kindergarten (1998) and then in the spring of kindergarten, fall and spring of first grade and the spring of third and fifth grades. Parents, children, teachers and administrators participated in the study and provided information about the children and the home and school environment. In the spring of first grade, the sample was refreshed to have a nationally representative population of first graders in the United States which included children who did not attend kindergarten in 1998. The sample of children and families in the third grade, however, is not a representative sample because children who had just moved to the United States were not included in the sample (US Department of Education, 2002). In the current study, parent and child data are from the data collection waves in the fall and spring of kindergarten, and spring of first and third grade.

Figure 2: ECLS-K Conceptual Model



SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99.

Participants

The sample for the current study includes parents, mostly mothers, who completed the parent interview when their children attended kindergarten in 1998-99, attended first grade in 1999-2000 and were in third grade in 2001-2 (US Department of Education, 2002). It should be noted that not all children who were assessed were first time kindergarteners, first or third graders. Children who were retained and needed to repeat a grade were also included in the sample. Child outcome data include children's reading and math standardized test scores in the spring of third grade. Parent data include parents' demographic and psychological information collected when children were in kindergarten and first grade. To ensure that the sample was representative of the larger population, the sample was weighted using a longitudinal normalized weight. The sample for the current study consists of 17,401 children (see Table 1). Almost 60% of the children in the sample were European American, non-Hispanic, 16% African American, non-Hispanic, 19% Hispanic, 3% Asian and 5% were another ethnicity (e.g. Native Hawaiian, American Indian, Pacific Islander). Almost 70% of the parents who were interviewed were married and in 90% of the households English was the primary language spoken. The average number of children under the age of 18 living at home was 2.5 (SD= 1.2) and there were approximately an equal number of boys (52%) and girls (48%) in the sample. The average age of mothers when the children were in kindergarten was 33 years, SD= 6.6 and fathers average age was 36 years, SD= 6.9. When children were in kindergarten, 22% of mothers and 21% of fathers had a bachelor's degree or above, 45% of mothers and 69% of fathers worked over 35 hours a week and

Table 1

Parent and Child Demographic Descriptive Information (N= 17,401)

Variables	<i>M(SD)/%</i>
<i>Mother Education (%)</i>	
Less than high school	14.7%
High school diploma	30.5%
Vocational Technical Program/ Some college	31.7%
Bachelor's degree or above	21.6%
<i>Father Education (%)*</i>	
Less than high school	11.9%
High school diploma	25.8%
Vocational Technical Program/ Some college	20.9%
Bachelor's degree or above	21%
<i>Parent Employment Status</i>	
Not in labor force/Looking for work	31.6% (Mother) 4.5% (Father)
Less than 35 hours a week	21% (Mother) 2.8% (Father)
35+ hours per week	45.1% (Mother) 69.3% (Father)
<i>Ethnicity</i>	
European American, non-Hispanic	57.5%
Black or African American, non-Hispanic	15.9%
Hispanic	18.8%
Asian	2.7%
Other (Native Hawaiian, pacific Islander, American Indian, Alaska Native, more than one race)	5.0%
<i>Child Gender (% Male)</i>	51.5%

* 20.4% father data missing

21% of families were living below the poverty level. 85% of the schools in the study were public schools.

The response rate for the parent interview during the kindergarten year was 89%. In the first grade, the response rate for the parent interview was 85% and in the third grade the response rate was 77% (Tourangeau, Brick, Byrne, Le, & Nord, 2005). Direct child assessment data was used to examine children's educational outcomes and parent interview data were used to examine parents' demographic and psychological characteristics and involvement activities. Information was taken from the fall and spring of kindergarten and the spring of first and third grade because only data from a subsample of the ECLS-K were collected and assessed in the fall of first grade and no data were collected in the fall of third grade.

Procedure

The ECLS-K study collected data from four sources, with the child being the focal point of the study (US Department of Education, 2002). Data were collected from the child, their parents, their teachers and their schools by field staff, phone interviews and self-administered questionnaires. Field staff had in-person training sessions and most of the staff was former educators or teachers or were experienced in working with children and conducting assessments. Field staff who collected the data were split into 100 different work areas and in each work area there was a team consisting of one field supervisor and three assessors. The team collected data on parents and children for their work area. Child participants were selected into the sample using equal probability systematic sampling with approximately 24 students being sampled from each school

(US Department of Education, 2002). Because the study began in kindergarten, schools were initially selected if they had a kindergarten program.

Parent interviews were conducted using computer-assisted interviews (CAIs) that were usually conducted over the phone and lasted approximately 50 minutes (Tourangeau, et al., 2005). Contact information for parents or legal guardians was obtained from the child's school. Once the family was identified, the field staff teams called the families' home, making repeated attempts to contact the parents if necessary. When the family was reached, a field staff member first asked to speak to the child's mother, than another parent or guardian or another household member if the mother was not available. To be qualified as the respondent for a particular child, the person had to know about the child's care and education, had to live with the child, and be at least eighteen years old. Mothers were the main respondent (87%), followed by another parent or guardian and then an adult in the household. After the first round of data collection in the fall of kindergarten, field staff asked for the original respondent. If that person was unavailable, respondents were requested in the same order as the first wave of data collection.

Parent interviews were conducted primarily in English, but the questionnaire was also translated into Spanish, Chinese, Lakota and Hmong (US Department of Education, 2002). If the respondent did not speak English, bilingual translators completed the interview over the phone, first filling out the questionnaire by hand and then entering the information into the computer.

Child assessments were conducted in person for approximately 50-70 minutes at the children's school over a 14 week period (US Department of Education, 2002).

Assessments were conducted in a classroom other than the one the child was originally in when the interviewer arrived at the school or administered in the school's library.

Children were assessed directly using computer-assisted personal interviews (CAPI), administered one-on-one with each child. If English was not the primary language spoken at home, children were administered the OLDS (Oral Language Development Scale) assessment, a measure of oral English language ability. If children scored above the standard cutoff score on the OLDS, they were administered the assessment in English. If they scored below the cutoff, parts of the assessment were translated for them into their primary language. Children who did not pass this language screener and whose native language was not Spanish were not assessed in certain domains such as the general knowledge assessment in kindergarten. Because the current study included this measure, children who did not pass the language screener in the fall of kindergarten were not included in this study. Overall, less than 1% of the children were excluded due to language, a disability, setting, health care aide or assistive device (Tourangeau, et al., 2005).

Measures

The measures used in the ECLS-K protocol were carefully selected and developed in consultation with leading experts in the areas of child development, education, and large-scale survey research (US Department of Education, 2002). The direct child assessment measures were standardized measures created for the ECLS-K study. The assessments were derived from the examination of national and state assessments, performance standards, and existing child assessments such as the Woodcock Johnson battery. A panel of expert educators and curriculum specialists

reviewed the items to ensure validity of the assessments. In the current study, data from the parent interview and direct child assessments were used.

Independent Variables

Parent interview. Respondents were asked about demographic characteristics (e.g. home language, education, income, and employment), parents' values and beliefs, home and school activities, the home environment, and children's abilities and health. In the current study, variables pertaining to parents' demographic and psychological characteristics and their involvement in their children's education will be used (see Table 2).

Parents' were asked about their family demographic characteristics including mothers' and fathers' level of education, total household income, and ethnicity of child (see Appendix A). Parents' education was scored with nine levels of educational attainment: 1='8th grade or below', 2= '9th-12th grade', 3= 'high school diploma/equivalent', 4= 'voc/tech program', 5= 'some college', 6= 'bachelor's degree', 7= 'graduate/professional school-no degree', 8= master's degree (MA, MS), 9='Ph.D. or professional degree'. For the current study, parent education was recoded and collapsed into four levels; 1= having less than a high school diploma, 2= having a high school diploma, 3= some college or having a vocational/technical degree, and 4= having a bachelor's degree or above because some of the categories included less than 10% of the sample.

Parents' income was reported on a continuous scale and consisted of the total household income. Child ethnicity was used as a proxy for parent ethnicity because they are highly correlated.

Table 2

Independent and dependent variables

	Fall of Kindergarten	Spring of Kindergarten	First Grade	Third Grade
Child age				X
Child gender	X			
School type				X
Mother education	X			
Father education	X			
Household income	X			
Ethnicity	X			
Beliefs child reading ability			X	
Beliefs child math ability			X	
Degree expected of child	X			
School provide chance to volunteer		X		
Barriers to school involvement		X		
Parent involvement in school				
Contact school		X	X	X
Attend open house		X	X	X
Attend PTA meeting		X	X	X
Attend parent-teacher conference		X	X	X
Attend school event		X	X	X
Volunteer		X	X	X
Fundraise		X	X	X
Parent involvement at home				
Read to child	X		X	X
Practice numbers	X		X	X
Help with homework			X	X
Sing songs	X		X	X
Play games	X		X	X
Play sports	X		X	X
Teach about nature	X		X	X
Tell stories	X		X	X
Do art together	X		X	X
Build things	X		X	X
Child Reading Outcome				X
Child Math Outcome				X

Child race was comprised of eight categories derived from a composite variable created by the ECLS-K: a) European American, non-Hispanic, b) Black or African American, non-Hispanic, c) Hispanic, race specified, d) Hispanic, race not specified, e) Asian, f) Native Hawaiian, other Pacific Islander, g) American Indian or Alaska Native, and h) More than one race, non- Hispanic. These race categories were then collapsed and recoded as: 1= European American, non-Hispanic 2 = Black, African-American, non-Hispanic, 3= Hispanic, 4= Asian, 5= other ethnicity (which included all individuals in the original categories f through h). After recoding the child race variable, dummy coding was used with European American, non-Hispanic children being the omitted category.

Parents were asked about psychological characteristics such as their beliefs about their child's academic abilities, their perceptions of their child's school and beliefs about barriers to school involvement. Beliefs about children's academic abilities consisted of three items. In the spring of first grade parents were asked how well they believe their child is doing in school in reading and math compared to other children in the class. Parent beliefs were only asked when children were in first and third grades not in kindergarten, and therefore the analyses consisted of these items taken from the spring of first grade. Parents' responses were on a Likert scale and ranged from 1= 'much worse' to 5= 'much better' with respect to their beliefs about how their children were doing academically in a particular subject (see Appendix C). Parents were also asked how far they believe their child would go in school (e.g. completing high school, college degree). This item was asked in the fall of kindergarten but not the spring (see Appendix B). Beliefs are not expected to change significantly across the academic year, allowing this

variable to be used to represent parents' beliefs about the highest degree their kindergarten children would obtain.

Parents were then asked about their perceptions of their child's school (e.g. the school helps you understand child development, the school provides workshops and makes you aware of volunteer opportunities). Parents' responses about school perceptions were on a Likert scale ranging from 1= 'school does this very well' to 3= 'school doesn't do this at all'. For the current study, these variables were reverse coded so that the negative responses (e.g. school doesn't do this) were rated lower than the positive responses (e.g. school does this very well). For example, parents' perceptions of the school (e.g. school makes you aware of chances to volunteer, school provides materials to learn at home) were recoded as 1= doesn't do this at all, 2= just ok, 3= does this very well. By reverse coding these variables, a positive association between parents' school perceptions and parent involvement or child outcomes would indicate that parents' who have positive perceptions of the school are also more involved or have children with better academic outcomes. After conducting an initial set of analyses, variables related to parents' perceptions of their children's school did not account for a significant part of the variance in parent involvement or in children's reading or math outcomes, except for parents' perception of the school providing volunteer opportunities. Therefore, all other school perception variables were removed from the final set analyses reported here.

Eight items asked parents about perceived barriers to school involvement (i.e. inconvenient meeting times, child care, work constraints, safety problems going to school, school makes you feel unwelcome, transportation, language barriers, don't hear about things you want to be involved in). Parents were if asked any of these made it

harder for them to be involved in school. Responses were recoded as 0= 'no' and 1= 'yes'. After recoding, a negative association between barriers to involvement and parent involvement in school would indicate that parents who believe there are barriers to their involvement in school are less involved at school compared to parents who perceive fewer barriers. Three of the eight barriers to school involvement (i.e. transportation issues, no child care available and inconvenient meeting times of school events) were all highly correlated and therefore collapsed into one composite variable. The remaining five barriers were removed from the final set of analyses due to lack of variability in the responses. It should be noted that barriers to involvement were only asked in response to school-based involvement, not home-based involvement where they would not be applicable.

Parent involvement in a child's education was assessed by asking parents about their *school* involvement and *home* involvement in school education related activities (see Appendices B, C, D). For *school involvement*, parents were asked whether or not an adult in the household had attended a particular school event (e.g. open house, PTA meeting) in the past year or participated in their children's school by volunteering or fundraising resulting in a 0= 'no' or 1= 'yes' response (e.g. *Have you attended a parent-teacher conference this year?*). Seven school involvement activities were assessed in the study; parent contacted school, attended open house, attended parent-teacher conferences, attended PTA meetings, attended school event, volunteered, and fundraised.

To assess *home involvement* in school education related activities, parents were asked about the frequency of different types of activities they engage in with their children both in the community and at home. At kindergarten and third grade, parents

were asked about things they have done with their children in the community in the past month such as attending a sporting event, play or going to the zoo or museum. Responses were coded as 0= 'no' and 1= 'yes' and a composite was created which averaged the amount of community activities parents engaged in with their children in kindergarten and third grade.

When children were in first grade and third grade, parents were asked how often they engage in different types of home-based activities each week such as reading to your child, helping with homework, playing games and singing songs. Home involvement activities were assessed on Likert scales and were recoded so that all of the scales range from 0= 'not at all' to 4= 'everyday'.

For the current study, composites of the large set of parent involvement items across the data collection time points (i.e. kindergarten, first and third grade) were created. A goal of the current study was to focus on how parent involvement during the early elementary school years was associated with children's third grade academic outcomes and therefore parents' participation in involvement activities in kindergarten, first and third grade were collapsed together. There is no theoretical or empirical evidence to suggest that the frequency of parent involvement would be different at each specific grade within the early elementary school years. To confirm, preliminary analyses (i.e. t-tests and correlations) were run to assess whether there were statistical differences across the first four years of school with the parent involvement in school variables. There were no significant differences in the means of involvement across the three grade levels and the variables at the different time points were highly correlated indicating that

the frequency of parent involvement remained relatively stable during the early elementary school years.

A composite for parent involvement *at school* was created to assess how many different types of activities parents were involved in during the early elementary school years, ranging from 0= 'no activities' to all 7= 'activities'. To create the overall composite, composites were created first at each time point (kindergarten, first and third grade) by summing all seven school involvement items for the year. Then the three new composite variables, one for each time point, were averaged together to create a parent involvement in school composite variable across all three time points. For example, a composite score of 5 indicates that on average that parent had participated in five out of seven activities during the early elementary school years. A factor analysis was not run on these parent involvement items because they are dichotomous variables. With dichotomous variables, there is little variability within each item as there are just two possible responses which make it difficult to do a factor analysis. Correlations were run on all seven parent involvement in school items and were found to all be correlated with one another ($r = .09, p < .01$ to $r = .29, p < .01$).

Parent involvement *at home* was comprised of seventeen items including activities such as reading to children, helping with homework, playing games, and visiting the library or a museum. Five items were dichotomous variables assessing community based activities (e.g. attending a play or museum, visiting the library). A composite for these items was created by summing the number of activities parents participated in with their children at each point in time and then averaging the two scores. The other twelve home involvement items responses were on a Likert scale and therefore

a factor analysis was run on these items. A factor analysis was conducted to determine whether these activities can be grouped together for purposes of data reduction or needed to be analyzed separately (see Appendix E). The factor analysis with principal component analysis as the extraction method and a direct oblimin rotation revealed that there were three factors that emerged from the home involvement activities: unstructured involvement activities (e.g. playing games, doing art together, teaching about nature, playing sports), homework involvement (e.g. helping with overall homework, reading and math homework), and literacy/numeracy involvement (e.g. reading, telling stories, singing songs, practicing numbers). For each of the three home involvement factors, a composite was created by averaging factor scores from each of the data collection waves in kindergarten, first and third grade.

After running the initial set of analyses, unstructured learning activities and community activities did not account for a significant amount of the variance in children's reading and math outcomes and therefore were removed from the analyses. The remaining two types of home involvement (helping with homework and engaging in literacy/numeracy activities) were collapsed into one composite variable because they were significantly correlated ($r = .22, p < .01$) and theoretically measuring a similar construct of academic support from parents.

Dependent Variables

Children's academic assessments. In the current study, children's reading and math outcomes were assessed in the spring of third grade. The cognitive assessments were designed to measure children's academic performance at the time of data collection as well as growth over time (US Department of Education, 2004). Therefore, the

measures contained items that were specific to curriculum in the third grade as well as items that overlap with adjacent grades to assess growth over time. The third grade reading assessment included questions measuring phonemic awareness, vocabulary and word decoding, reading comprehension and interpretation (US Department of Education, 2004). The reading assessment was derived from the conceptual framework of the National Assessment of Educational Progress (NAEP), which is based on national curriculum standards, and adapted to adequately measure reading skills with younger school aged children. Teachers and literacy curriculum specialist reviewed the sections and items for accuracy and developmental appropriateness. A writing assessment was not included in the reading assessment as it was too time consuming and costly to be assessed. Children's third grade math assessment was also derived from the NAEP conceptual framework and included questions that measured properties, operations, measurement and number sense, geometry and spatial sense, data analysis, statistics, algebra, patterns and functions (US Department of Education, 2004).

The reading and math assessments were two-stage adaptive tests. The first stage was an initial routing test to place the child at a particular level of difficulty for each academic area and the second stage was a subset of the reading or math assessment determined by the routing test. Item Response Theory (IRT) methods were used to estimate the number of items a child would answer correctly had the child taken the full set of items rather than the subset. IRT methods also allow for the comparison of children's assessment scores over time by using comparable measures and placing their scores on a common vertical scale. Reliabilities were computed for each subject area based on the IRT scores, t-scores and proficiency scores for each student. The reliabilities

for the third grade assessment scores were .94 for reading and .95 for math (Tourangeau et al., 2005).

Control Variables

Several variables at the school and child level were used as controls in the current study because they are related to children's academic outcomes and therefore may confound the findings of the impact of the independent variables on the dependent variables. Type of school (i.e. public or private) was included as a control because it was highly correlated with both the amount of parent involvement and children's academic outcomes. This may be because private schools with more resources and money may have more opportunities available in which parents can participate, contributing to increased levels of parent involvement compared to schools that offer fewer opportunities for parent participation. The focus of the current study was to examine the effects of parent characteristics on children's academic outcomes, and therefore school level variables were added as controls rather than indicators of children's academic achievement. Although it is well documented and acknowledged that school and teacher level variables do have an effect on children's academic outcomes, it is beyond the scope of the current study to examine all other potential variables.

Children's age and gender were controlled for to account for any age or gender related differences in the dependent variables. Children's general knowledge outcomes from the fall of kindergarten were also controlled for to account for initial overall knowledge upon entry into elementary school. The general knowledge measure included both natural science and social studies items and measured conceptual understanding, scientific investigation, and knowledge of history, government, geography and culture.

Children were scored on their abilities to understand the world around them and how well they could make inferences about the relationships between things around them. Unlike the reading and math assessments which were able to measure specific levels of proficiency, the general knowledge assessment contained diverse information that was difficult to rank, thus children's scores reflected their overall breadth of understanding of the subject matter rather than a proficiency ranking.

The general knowledge variable is used as a proxy for the child's cognitive ability and academic knowledge as well as a summary of their out of school experiences at the entry of school. Research has suggested that children's general knowledge is linked to later school achievement, especially reading (Attewell, Domina, & Suazo, 2005; West, Tarullo, & Aikens, 2007). Although the general knowledge assessment may account for much of the variance in children's reading and math outcomes because it is highly correlated with later academic achievement, it is important to understand the unique impact parents have on their children's academic achievement. Moreover, according to the bioecological theory (Bronfenbrenner, 1989) children contribute to their own development and therefore it is necessary to include a variable (i.e. initial general knowledge) measuring and controlling for children's contributions to their academic achievement when assessing parents' impact on children's outcomes. However, it should be noted that children's outcome scores on this assessment also represents preschool experiences which are influenced by parents and parents' characteristics such as education and income.

CHAPTER IV

Results

To test whether parents' demographic and psychological characteristics and their involvement at school and at home are associated with children's reading and math outcomes, a series of multivariate analyses were conducted. First the process of creating the database, including the weighting procedures used, is described. Second, results from the descriptive analyses are presented followed by results from the multivariate analyses.

Creating the Database

The dataset for the study was created from a public database (ECLS-K) containing data collected from parents and children beginning in kindergarten and following them through third grade (US Department of Education, 2002). The current study uses ECLS-K data collected in the waves in the fall and spring of kindergarten, and spring of first and third grade to create a dataset suitable to address the research questions. Variables used for this study consisted of independent, mediator, dependent and control variables. The independent and mediator variables included parents' demographic characteristics (e.g. education, income, ethnicity), parents' psychological characteristics (e.g. beliefs of how the child is doing academically and how far the child will go in school, beliefs about the school environment and barriers to involvement) and parent involvement, both *at school* (e.g. attending school events, volunteering) and *at home* (e.g. reading to child, playing games). The dependent variables for the current study included children's academic outcomes (e.g. reading and math assessment scores). Control variables included child characteristics (e.g. age, gender, general knowledge

outcomes) and school type (e.g. public v. private school) to account for any variance in the independent and dependent variables due to child or school level effects.

Once the initial dataset was created, the data were cleaned by first recoding all variables to account for missing data, ensuring that the variables were normally distributed and checking for skewness and multicollinearity. Missing data, which included items where participants did not respond or refused to answer, were originally coded as numerical scores of -1 to -9. In the current study, missing data were recoded as system missing in the current study. Frequencies, means, standard deviations, skewness and kurtosis were run on all variables to ensure that they were normally distributed. Only variables assessing barriers to school involvement (safety going to school, not feeling welcome at school, problems with transportation, language problems and not hearing of interesting things) were positively skewed and had no variability, that is over 94% of parents in the sample responded that these were not barriers to involvement. Because there was no variability in the responses the items were pulled from the analyses, leaving three remaining barriers to involvement (not being able to get off work, no child care available, and inconvenient meeting times of school events) which were collapsed into one composite variable.

All independent variables were then assessed for multicollinearity, which is when the independent variables are too highly intercorrelated and the effects of the independent variables cannot be separated (Friedman & Wall, 2005; Wheeler & Tiefelsdorf, 2005). Multicollinearity exists when the tolerance values are less than .10 and the VIF values are greater than 4.0. In the current study, none of the independent variables had tolerance

values less than .10 or VIF values greater than 4.0 and therefore all independent variables were included.

Weighting the Dataset

When conducting analyses with large scale datasets with complex designs using traditional software packages such as SPSS, standard errors are typically underestimated and results appear to be significant even when they may not be (US Department of Education, 2002). To address these concerns, several weighting methods were employed. Because the ECLS-K employs a multistage, complex design (i.e. different types of survey instruments, different levels of nonresponse at each level, different sampling time points), multiple sampling weights are needed when analyzing the data. Weights are used to produce estimates which are representative of the population of children and parents who were in kindergarten, first and third grade when the ECLS-K study was being conducted (US Department of Education, 2002) and account for selection bias and nonresponse effects in the study. Based upon the type of data selected (i.e. child and parent level) and the waves of data collection (i.e. fall and spring of kindergarten, spring of first and third grade) an overall weight is selected which adjusts and assigns a weight to each case in the study so that the sample is representative of the normal distribution of that population. The set of weights developed for the ECLS-K dataset and used in the current study are specific for the fall and spring of kindergarten, and spring of first and third grade datasets as well as for the population of interest (i.e. parents and children). These weights are also specific for the instruments used to collect the data (e.g. parent interview, direct child assessments) (US Department of Education, 2002).

For the current study, the weight selected was C1_5FPO, representing parent and child level data collected in the fall and spring of kindergarten and in the spring of first and third grade. This weight, however, sums to the population weight based upon the data collection time points rather than the specific population weight for the sample in the current study. Therefore the weight was normalized to have the correct degrees of freedom and sample size when calculating standard errors. Without creating a normalized weight, SPSS will automatically calculate the standard errors assuming the sample size and degrees of freedom is the sum of the weights. With normalized weights, the standard errors will be based upon the correct sample weight for the current study instead of the population size. To normalize the weight, C1_5FPO was multiplied by the total number of cases with a positive weight and then divided by the sum of the weights. This weight is herein referred to as the sample weight for the current study.

In addition to weighting the data with a sample weight, a set of 90 replicate weights were used to estimate the standard errors of the survey estimates accurately. The paired jackknife replication method is the preferred method to use when analyzing the ECLS-K data using both the sample weight and replicate weights (US Department of Education, 2002). The method takes into account the clustered, multistage design of the study and its sampling characteristics and oversampling methods with subpopulations and allows for the accurate estimates of the standard errors and significance levels in the analyses (Tourangeau et al., 2005). The standard error calculations using the paired jackknife replication method can either be calculated by hand or analyses can be run in AM software. AM Software is an alternative software program that is able to replicate analyses run in SPSS but calculates the correct standard errors based on the study's

design (AM Statistical Software, n.d.; Hahs-Vaugh, 2005). Standard errors can also be calculated in SPSS by taking the ratio of the standard error estimate under the actual sample design to the standard error estimate that would have been obtained with a random sample of the same size (Tourangeau et al., 2005). However, it is usually encouraged to use AM Software rather than calculating them in SPSS because the results are more accurate (Hahs-Vaugh, 2005).

Descriptive Analyses

Parents and children in the current study were representative of the national population of children and their families who were in kindergarten in 1998-99, in first grade in 1999-2000 and in third grade in 2001-2002, with the exception of children who were not proficient in English in the fall of kindergarten (see Table 1). As reported earlier, 58% of the sample was European American and approximately 20% of mothers and fathers had a bachelor's degree or above. 45% of mothers and 70% of fathers were employed full time during the data collection period. Approximately half of the children in the sample were male (52%).

Overall, parents had very positive perceptions and beliefs about their children's success in school (see Table 3). When asked in the spring of first grade how parents thought their children were doing in reading and math compared with other children in their class, the majority of parents responded that they believed their children did "a little better" or "much better" than other children (67% for reading and 65% for math). Almost 50% of parents believed that their children would obtain a 4-5 year college degree and 27% believed their child would obtain a post baccalaureate degree.

Table 3

Parent Psychological Characteristics and Involvement Descriptive Information

Variables	<i>M(SD)/%</i>
<i>Beliefs about children's academic abilities (%) - Spring 1st grade</i>	
Much worse/a little worse	10.5% (Reading) 5.9% (Math)
About the same	21.4% (Reading) 28.3% (Math)
A little better/much better	67.4% (Reading) 64.7% (Math)
<i>How far in school child goes - Fall Kindergarten</i>	
High school or less	9.9%
2+ years of college	14.8%
Finish 4-5 year college degree	47.8%
Post Baccalaureate education	27%
<i>Perceptions of child's school (% does this ok/ not at all)</i>	
School makes you aware of chances to volunteer	25.4%
<i>Barriers to involvement (% yes perceive barriers)</i>	
Inconvenient meeting time	38.7%
No child care	25.1%
Cannot get off from work	51.3%
<i>PI at school (Composite of 7 items, range 0-7)</i>	4.51 (1.38)
<i>PI at home (Mean factor score)</i>	2.87 (.48)
<i>(Composite of homework help, reading to child, practicing numbers, telling stories)</i>	
0= 'not at all'; 1= 'once or twice a week';	
2= '3-6 times a week'; 4= 'everyday'	

When asked about perceptions of their children's schools, 74% of parents thought the school does a good job of making parents aware of chances to volunteer. Parents also reported that it was difficult to be involved in school activities due to inconvenient meeting times of events (39%), not being able to get off from work (51%) and not having child care (25%). Parents' cited not being able to get off work to attend school events as the largest barrier to being involved in school indicating the need for schools to be more accommodating when scheduling events.

In general parents were involved both at school and at home; the majority of parents (66%) participated in four or more school based activities with a mean of 4.51 activities (SD= 1.38) per year during the early elementary school years (see Table 3). For parent involvement at home, parents engaged in literacy/numeracy activities and helping with homework on average three to six times a week. Children's reading and math outcomes were assessed using standardized reading and math assessments. For the reading assessment, scores ranged from 42.4 to 148.95 with a mean score of 107.23 (SD= 20.36), while math scores ranged from 31.05 to 120.42 with a mean score of 84.14 (SD= 18.12).

Bivariate Correlations

Bivariate correlations were run on the independent and dependent variables (see Tables 4 and 5). Mothers' and fathers' education were positively correlated with one another ($r = .60, p < .01$) and with total household income ($r = .42, p < .01$ for mothers, and $r = .43, p < .01$ for fathers). Parent involvement *at school* was positively associated with parents' education ($r = .41, p < .01$ for mothers, and $r = .37, p < .01$ for fathers) and income ($r = .34, p < .01$). However, being African American and Latino were negatively

associated with parent involvement at school ($r = -.17, p < .01$ for both) compared to being European American. Parent involvement *at home* was negatively correlated with parents' education ($r = -.03, p < .01$ for mothers, and $r = -.02, p < .01$ for fathers) and income ($r = -.05, p < .01$), but positively associated with being African American and Latino ($r = .08, p < .01$ for African American and $r = .04, p < .01$ for Latino) compared to being European American (see Table 5).

Correlations between the independent and dependent variables yielded several significant findings (see Table 5). Parents' demographic characteristics were correlated with child outcomes and parent involvement. Mothers' and fathers' education were positively associated with third grade reading ($r = .37, p < .01$ for mothers and $r = .36, p < .01$ for fathers) and math ($r = .35, p < .01$ for mothers and $r = .33, p < .01$ for fathers).

Total household income was positively associated with reading and math outcomes ($r = .30, p < .01$). Being African American or Latino was negatively associated with reading ($r = -.19, p < .01$ for African American and $r = -.18, p < .01$ for Latino) and math ($r = -.25, p < .01$ for African American and $r = -.13, p < .01$ for Latino) outcomes compared to being European American. Parent involvement *in school* was positively correlated with children's reading and math outcomes ($r = .32, p < .01$ for both), but parent involvement *at home* was negatively correlated with children's reading ($r = -.14, p < .01$) and math ($r = -.20, p < .01$) outcomes.

Parents' psychological characteristics were also associated with child outcomes and parent involvement.

Table 4
Bivariate correlations between parents' demographic and psychological characteristics

	Mother educ	Father educ	Income	African Amer.	Latino	Asian	Other ethnicity	Belief reading	Belief math	Degree expect	School-chance to volunt.	Barriers to involve.
Mother education	---	.60**	.42**	-.11**	-.21**	.04**	-.03**	.05**	.07**	.20**	.10**	-.08**
Father education		---	.43**	-.08**	-.23**	.08**	-.01	.06**	.05**	.19**	.11**	-.10**
Income			---	-.18**	-.15**	.03**	-.04**	.03**	.03**	.14**	.12**	-.11**
African American				---	-.21**	-.07**	-.10**	.04**	.04**	.02*	-.04**	.06**
Latino					---	-.08**	-.11**	.04**	.05**	.12**	-.06**	.05**
Asian						---	-.04**	.02*	.01	.07**	-.03**	.03**
Other ethnicity							---	-.03**	-.03**	-.01	-.05**	.01
Belief reading								---	.56**	.12**	.04**	-.07**
Belief math									---	.12**	.04**	-.04**
Degree expect										---	.00	-.01
School-chance to volunteer											---	-.03**
Barriers to involvement												---
Child age	-.00	.02	-.03**	-.02**	-.06**	-.04**	.00	.01	.05**	-.05**	.04**	-.01
Child gender	.01	-.00	.02*	.00	.01	.01	-.03**	.09**	-.04**	.03**	.02*	-.02*
General knowledge outcome	.37**	.34**	.32**	-.30**	-.15**	-.04**	-.05**	.14**	.15**	.13**	.11**	-.11**

* $p \leq .05$, ** $p \leq .001$

Table 5

Bivariate correlations between parents' characteristics, involvement and children's academic outcomes

	PI at School	PI at Home	Children's Reading Outcomes	Children's Math Outcomes
Mother education	.41**	-.03**	.37**	.35**
Father education	.37**	-.02*	.36**	.33**
Income	.34**	-.05**	.30**	.30**
African American	-.17**	.08**	-.19**	-.25**
Latino	-.17**	.04**	-.18**	-.13**
Asian	-.08**	-.02**	.03**	.04**
Other ethnicity	-.04**	.01	-.05**	-.04**
Belief reading	.06**	-.02*	.31**	.25**
Belief math	.08**	-.01	.21**	.29**
Degree expect	.14**	.08**	.14**	.13**
School- chance to volunteer	.20**	.01	.13**	.13**
Barriers to involvement	-.19**	-.02**	-.10**	-.09**
PI School	---	.12**	.32**	.32**
PI Home		---	-.14**	-.20**
Children's Reading Outcomes			---	.73**
Children's Math Outcomes				---

* $p \leq .05$, ** $p \leq .001$

Children's third grade reading outcomes were positively correlated with parents' beliefs about how their children were doing in reading ($r = .31, p < .01$), parents' beliefs about how their children were doing in math ($r = .21, p < .01$) and how far in school parents believe their child will go ($r = .14, p < .01$). Children's math outcomes were positively associated with parents' beliefs about how their children were doing in reading ($r = .25, p < .01$), parents' beliefs about how their children were doing in math ($r = .29, p < .01$) and how far in school parents believe their child will go ($r = .13, p < .01$). Parents' beliefs about how far in school they believe their child will go were also positively associated with parent involvement at school ($r = .14, p < .01$) and parent involvement at home ($r = .08, p < .01$). Parents' perceptions of the school providing chances to volunteer was significantly positively associated with parent involvement in school ($r = .20, p < .01$). Parents' beliefs about barriers to involvement were negatively associated with parent involvement at school ($r = -.19, p < .01$).

In sum, parents' involvement *at school* was positively associated with parents' education, income and children's reading and math outcomes, whereas parent involvement *at home* was negatively associated with parents' education, income and children's third grade reading and math outcomes. Ethnicity was negatively associated with parent involvement at school and with children's reading and math outcomes but positively associated with parent involvement at home when comparing African American and Latino students to European American students. Parents' beliefs about their children's academic abilities were associated with children's reading and math outcomes in third grade. Parents who had positive perceptions of school and perceived fewer barriers to involvement were more involved at school compared to parents who had

less positive beliefs and reported having more barriers. Although analyses from the bivariate correlations yielded significant results, the correlations in general were not very strong. Hierarchical regressions were run to examine the unique variance accounted for by parents' characteristics, parent involvement in children's reading and math outcomes.

Multivariate Analyses

Hierarchical multiple regressions were conducted to assess the effect of parents' demographic characteristics (i.e., education, income, and ethnicity), psychological characteristics (i.e. beliefs about children's abilities, perceptions of school and beliefs about barriers to involvement), and parent involvement both *at school* and *at home* during the early elementary school years on children's third grade reading and math outcomes. Hierarchical regressions enable one to partition the variance in the dependent variable that is uniquely accounted for by each independent variable.

Effect sizes for each regression were calculated using the R^2 of each model for each regression run. In the regressions, the R^2 values ranged from .25 to .01. An effect size score of .20 is considered a medium effect size when conducting analyses with the ECLS-K dataset. According to Cohen (1988), an effect size of .20 is considered a medium to large effect size (.02 is a small effect size and .35 is a large effect size). When calculating the effect sizes for each regression run in the current study, the analyses yielded a range of effect sizes from $f^2 = .01$ to $f^2 = .33$, indicating small, medium and large effects, respectively. The first research question examining the association between parents' characteristics and children's reading and math outcomes yielded medium effect sizes of $f^2 = .11$ and $f^2 = .12$. The second research question examining the association between parents' characteristics and parent involvement yielded a large effect size with

parent involvement in school $f^2 = .33$, but small effect sizes with parent involvement at home, $f^2 = .04$ for both helping with homework and literacy/numeracy activities. The third research question examining the association between parent involvement and children's outcomes yielded small effect sizes of $f^2 = .01$ and $f^2 = .03$. Even with low effect sizes, however, often findings have important policy and research implications and should be evaluated within the context of the extant literature (McCartney & Rosenthal, 2000). Therefore, although the effect sizes of the regressions are below the cutoff score of .20, results will still be reported and considered significant by using findings from the AM Software program.

Hierarchical regressions were run to test whether parent involvement significantly mediated the association between parent characteristics and children's academic outcomes. According to Baron and Kenny (1986), for a variable to mediate an association between independent and dependent variables, the following criteria must be met: (i) the independent variables, IVs, (i.e. parent's demographic and psychological characteristics) must be significantly associated with the dependent variable, DV, (i.e. children's third grade reading and math outcomes), (ii) the IVs (i.e. parents' demographic and psychological characteristics) must be significantly associated with the mediator variable, MV, (i.e. parent involvement), (iii) the MV (i.e. parent involvement) must be significantly associated with the DV (i.e. children's third grade reading and math outcomes) when controlling for the IV, and (iv) the MV (i.e. parent involvement) must significantly reduce the association between the IV (i.e. parent characteristics) and DV (i.e. children's reading and math outcomes). If the association between parents' demographic and psychological characteristics and children's third grade reading and

math outcomes is reduced to zero when parent involvement is entered, then it is considered full mediation. If there is a reduction in the association between the variables (i.e. the beta values are reduced), then it is considered a partial mediation. When the beta scores suggest a partial mediation, then the Sobel test (1982) is used to measure the significance of the indirect effect. The Sobel test is recommended when using large sample sizes and multivariate analyses.

The first research question asks about the effects of parents' education, income, ethnicity, beliefs about children's academic abilities, perceptions of school and barriers to involvement, measured when children were in kindergarten and first grade, on children's third grade reading and math outcomes. To address this question, two sets of regressions were run, one for each dependent variable: children's third grade reading and math scores. Children's age, gender, and general knowledge outcomes from the fall of kindergarten were entered as control variables in step 1. In step 2, the following independent variables were entered as a set: mothers' and fathers' education level, total household income, ethnicity, parents' beliefs about children's reading and math abilities, how far in school parents believe their children will go, parents' perceptions of the school offering volunteer opportunities, and parents' beliefs about barriers to involvement (see Table 6).

Controlling for children's general knowledge scores, age and gender, parents' demographic and psychological characteristics as a set were significantly associated with children's reading outcomes ($R^2 = .46$, $F(22,69) = 146.33$, $p < .01$) and math outcomes ($R^2 = .44$, $F(22,69) = 175.06$, $p < .01$) for the full model.

Table 6

Parents' demographic and psychological characteristics as predictors of children's reading and math outcomes

	Children's Third Grade Reading Outcomes			Children's Third Grade Math Outcomes		
	β	SE	ΔR^2	β	SE	ΔR^2
Step 1			(.36**)			(.32**)
Child General Knowledge	.60**	.04		.57**	.04	
Child Age	-.08**	.19		-.05**	.15	
Child Gender [†]	.11**	.47		-.08**	.42	
School type ^{††}	.03**	.51		-.02*	.63	
Step 2			(.10**)			(.11**)
Child General Knowledge	.48**	.04		.42**	.04	
Child Age	-.05**	.19		-.03*	.15	
Child Gender [†]	.09**	.47		-.09**	.42	
School type ^{††}	.01	.51		-.05**	.63	
Mother's education	.07**	.36		.08**	.37	
Father's education	.07**	.35		.05**	.31	
Income	.04**	.00		.06**	.00	
Black/African American	-.07**	.91		-.13**	.90	
Hispanic	.00	.89		-.01	.75	
Asian	.04*	1.29		.04*	1.16	
Other ethnicity	-.04	1.87		-.04*	1.42	
Beliefs about child reading	.24**	.24		.12**	.27	
Beliefs about child math	.04*	.32		.18**	.23	
Degree expect of child	.04*	.25		.05**	.20	
School makes you aware of chances to volunteer	.01	.37		.04**	.36	
Barriers to school involvement	-.00	.20		-.01	.18	

* $p \leq .05$, ** $p \leq .001$, † male = 0, female = 1, †† public = 0, private = 1

Mothers' and fathers' education were found to be uniquely associated with children's reading ($\beta = .07, p < .01$ for mothers and fathers) and math outcomes ($\beta = .08, p < .01$ for mothers, and $\beta = .05, p < .01$ for fathers). Total household income was statistically significant for reading ($\beta = .04, p < .01$ and for math ($\beta = .06, p < .01$). A negative association was found between African American children's ethnicity and third grade reading and math outcomes compared to European American children ($\beta = -.07, p < .01$ for reading and $\beta = -.13, p < .01$ for math). On the other hand, for Asian children a significant positive association was found between ethnicity and reading and math outcomes ($\beta = .04, p < .05$) compared to European American children's reading and math outcomes. Parents' beliefs about their children's reading achievement was significantly associated with children's third grade reading and math outcomes ($\beta = .24, p < .01$ and $\beta = .12, p < .01$ respectively) and beliefs about math abilities were associated with reading ($\beta = .04, p < .05$) and math ($\beta = .18, p < .01$). Parents' beliefs about how far in school their children will go was significantly associated with both children's third grade reading and math outcomes ($\beta = .04, p < .05$ for reading and $\beta = .05, p < .01$ for math).

A series of post hoc exploratory analyses were conducted using two-way analysis of variance statistical tests to explore potential differences in parents' beliefs about their children's reading and math abilities by parents' ethnicity and parent involvement both at school and at home. Results indicated that there were significant main effects and interactions between parents' beliefs about their children's reading and math abilities, parent ethnicity, and parent involvement. Specifically, significant interactions were found between parents' beliefs about their children's reading abilities and ethnicity ($F = 7.94, p < .01$), parent involvement in school ($F = 4.07, p < .01$), helping with homework ($F = 2.12,$

$p < .01$), and engaging in literacy/numeracy activities ($F = 1.92, p < .01$). When examining parents' beliefs about their children's math abilities, significant interactions were found with parents' beliefs and ethnicity ($F = 4.43, p < .01$), parent involvement in school ($F = 3.80, p < .01$), helping with homework ($F = 3.78, p < .01$) and engaging in literacy/numeracy activities ($F = 2.60, p < .01$).

The second research question asks about the effects of parents' demographic and psychological characteristics on parent involvement at school and at home, during the early elementary school years. For each of the two regressions (one for school involvement and one for home involvement), school type (i.e. public vs. private), children's age and gender were entered as control variables into step 1. Parents' education, income, ethnicity, and psychological characteristics were entered as a set in step 2 (see Table 7).

For the full model, parents' demographic and psychological characteristics as a set were associated with parent involvement *at school* ($R^2 = .30, F(15,76) = 89.60, p < .01$), *helping with homework* ($R^2 = .04, F(15,76) = 8.16, p < .01$) and engaging in *literacy/numeracy* ($R^2 = .06, F(15,76) = 15.78, p < .01$). Results indicated that parents' education ($\beta = .21, p < .01$ for mothers, $\beta = .12, p < .01$ for fathers) and income ($\beta = .08, p < .01$) significantly predicted parent involvement at school and engaging in literacy/numeracy activities ($\beta = .06, p < .01$ for mothers, $\beta = .04, p < .01$ for fathers). Mothers' education was negatively associated with helping with homework ($\beta = -.04, p < .01$).

Table 7

Parents' demographic and psychological characteristics as predictors of parent involvement

	Parent Involvement (PI)								
	PI at School			PI at Home Homework			PI at Home Literacy/Numeracy Activities		
	β	<i>SE</i>	ΔR^2	β	<i>SE</i>	ΔR^2	β	<i>SE</i>	ΔR^2
Step 1			.04**			.00**			.02**
School type ^{††}	.20**	.05		-.02*	.03		.02*	.02	
Child Age	.01	.01		-.04**	.01		-.07**	.01	
Child Gender [†]	.02	.03		-.01	.02		.11**	.01	
Step 2			.25**			.04**			.04**
School type	.09**	.05		.00	.03		-.01	.02	
Child Age	-.00	.01		-.02*	.01		-.08**	.01	
Child Gender [†]	.01	.03		.00	.02		.11**	.01	
Mother Education	.21**	.03		-.04**	.02		.06**	.01	
Father Education	.12**	.02		-.02	.02		.04*	.01	
Total Household Income	.08**	.00		-.01	.00		-.05**	.00	
Black/ African American	-.09**	.07		.10**	.05		-.01	.03	
Latino	-.15**	.06		.11**	.04		-.08**	.02	
Asian	-.13**	.08		.01	.06		-.05**	.03	
Other ethnicity	-.06**	.10		.03**	.08		.01	.05	
Beliefs child reading ability	-.00	.02		-.09**	.01		.01	.01	
Beliefs child math ability	.05*	.02		-.03*	.01		.05**	.01	
Degree expected of child	.07**	.02		.03**	.01		.11**	.01	
School provide chance to volunteer	.12**	.04		.01	.02		.04**	.01	
Barriers to school involvement	-.14**	.02		-.00	.01		-.05**	.01	

* $p \leq .05$, ** $p \leq .001$ † male = 0 female = 1 †† public = 0, private = 1

When examining the association between ethnicity and parent involvement, a negative association was found between parent involvement at school and African American, Latino, Asian and other minority parents ($\beta = -.09, p < .01$; $\beta = -.15, p < .01$; $\beta = -.13, p < .01$; $\beta = -.06, p < .01$ respectively) compared to European American parents.

However, a positive association was found between parent involvement at home and African American parents compared to European American parents ($\beta = .08, p < .01$). It should be noted that ethnicity was entered into the same step as parents' education and income and therefore this result might also reflect educational and income differences among the groups. Therefore, even when controlling for specific child and parent demographic characteristics, not all variance is accounted for as these items are strongly correlated.

Regarding psychological variables, parents' beliefs about children's abilities were negatively associated with parent involvement at home helping with homework ($\beta = -.09, p < .01$ for beliefs about reading and $\beta = -.03, p < .01$ for beliefs about math). Parents' beliefs about how far in school they believe their child will go (i.e. the highest degree they expect them to get) was positively associated with parent involvement in school ($\beta = .07, p < .01$), parents helping with homework ($\beta = .03, p < .01$), and engaging in literacy/numeracy activities ($\beta = .011, p < .01$). Parents' perceptions of the school providing chances to volunteer was positively related to parent involvement in school ($\beta = .12, p < .01$) and perceptions of barriers to school involvement was negatively associated with parent involvement in school ($\beta = -.14, p < .01$).

The third research question asks about the influence of parent involvement *at school* and *at home* on children's reading and math outcomes when controlling for

significant parent demographic and psychological characteristics. To answer this question, two sets of regressions were run, one for each dependent variable: third grade reading and math outcomes. For each regression, in step 1 children's age, gender, general knowledge outcomes in the fall of kindergarten and school type were entered as control variables. Parents' demographic and psychological characteristics were also entered as control variables in the first step. In step 2, two parent involvement at school and at home (i.e. helping with homework and engaging in literacy/numeracy activities) were entered (see Table 8).

Parent involvement was statistically significantly associated with children's third grade reading scores ($R^2 = .48$, $F(27,64) = 125.31$, $p < .01$) and math scores ($R^2 = .47$, $F(27,64) = 138.18$, $p < .01$). Parent involvement *at school* was associated with both children's reading outcomes ($\beta = .04$, $p < .05$) and children's math outcomes ($\beta = .07$, $p < .01$). On the other hand, parent involvement at home helping with homework was negatively associated with both reading ($\beta = -.05$, $p < .01$) and math outcomes ($\beta = -.10$, $p < .01$). The same negative association was found with home involvement engaging in literacy/numeracy activities for reading ($\beta = -.06$, $p < .01$) and math outcomes ($\beta = -.12$, $p < .01$).

When these regressions were run without any controls, the same pattern of findings was found, although the effects were much larger (see Table 9). That is, parent involvement in school was significantly positively associated with children's reading and math outcomes, whereas parent involvement at home was negatively associated with children's reading and math outcomes.

Table 8

Parent involvement at school and at home as predictors of children's reading and math outcomes

	Children's Third Grade Reading Outcomes			Children's Third Grade Math Outcomes		
	β	SE	ΔR^2	β	SE	ΔR^2
Step 1			(.46**)			(.43**)
Child General Knowledge	.48**	.04		.42**	.03	
Child Age	-.06**	.19		-.03*	.16	
Child Gender [†]	.09**	.50		-.09*	.45	
School type ^{††}	.01	.53		-.05**	.60	
Mother's education	.06**	.32		.08**	.33	
Father's education	.06**	.35		.05**	.34	
Income	.04**	.00		.06**	.00	
Black/African American	-.07**	.97		-.13**	.95	
Hispanic	-.01	.85		-.02*	.73	
Asian	.03**	1.38		.04**	1.23	
Other ethnicity	-.04**	1.82		-.04**	1.40	
Beliefs about child reading	.25**	.27		.12**	.27	
Beliefs about child math	.04**	.29		.18**	.23	
Degree expect of child	.05**	.22		.05**	.21	
School makes you aware of chances to volunteer	.01	.37		.03**	.43	
Barriers to school involvement	.00	.20		-.01	.17	
Step 2			(.01**)			(.03**)
Child General Knowledge	.47**	.04		.40**	.03	
Child Age	-.06**	.19		-.03*	.16	
Child Gender [†]	.09**	.50		-.08**	.45	
School type ^{††}	.00	.53		-.06**	.60	
Mother's education	.06**	.32		.07*	.33	

Father's education	.06**	.35	.05**	.34
Income	.03*	.00	.06**	.00
Black/African American	-.07**	.97	-.12**	.95
Hispanic	-.01	.85	-.01	.73
Asian	.03*	1.38	.04*	1.23
Other ethnicity	-.04	1.82	-.03	1.40
Beliefs about child reading	.24**	.27	.11**	.27
Beliefs about child math	.04*	.29	.18**	.23
Degree expect of child	.05**	.22	.05**	.21
School makes you aware of chances to volunteer	-.00	.37	.03*	.43
Barriers to school involvement	.00	.20	-.00	.17
PI at School	.04**	.27	.08**	.25
PI at Home- Homework	-.05**	.41	-.10**	.34
PI at Home- Literacy/Numeracy Activities	-.06**	.64	-.12**	.50

* $p \leq .05$, ** $p \leq .001$ † male = 0, female = 1, †† public = 0, private = 1

The fourth research question tested the extent to which parent involvement, both at school and at home, mediated the effect of parents' demographic and psychological characteristics on children's third grade reading and math outcomes. Criteria were only met for parent involvement in school to be a mediator, not home involvement. That is, criteria were met for parent involvement in school to mediate the effects of parent characteristics on child outcomes with respect to the following independent variables: mothers' and fathers' education, and parents' beliefs about their children's reading and math abilities. To address the extent to which parent involvement at school mediates the effect of mothers' and fathers' education and beliefs about their children's abilities on child outcomes, eight regressions were run with four different independent variables (i.e. mother and father education, parent beliefs about children's reading and math abilities), two dependent variables (i.e. reading and math outcomes) and parent involvement at school as the mediator.

Parent involvement at school was found to partially mediate the effects of mothers' and fathers' education on children's reading and math outcomes (see Table 10). There was no mediation effect for parent involvement in school on parents' beliefs about their children's reading and math abilities and children's academic outcomes.

The effect of mothers' education on children's reading and math outcomes was reduced when parent involvement in school was added into the model (i.e. the betas remained significant but were reduced from $\beta = .07, p < .01$ to $\beta = .06, p < .01$ for reading and $\beta = .08, p < .01$ to $\beta = .07, p < .01$ for math). The same was true for the effect of fathers' education on reading when parent involvement in school was entered ($\beta = .07, p < .01$ to $\beta = .06, p < .01$).

Table 9
Parent Involvement as Predictors of Children's Academic Outcomes when Not Controlling for Parent or Child Characteristics

	Children's Third Grade Reading Outcomes			Children's Third Grade Math Outcomes		
	β	SE	ΔR^2	β	SE	ΔR^2
Step 1			(.14**)			(.16**)
PI at School	.30**	.23		.32**	.23	
PI at Home- Helping with Homework	-.18**	.39		-.20**	.33	
PI at Home- Literacy/ Numeracy Activities	-.02*	.60		-.14**	.52	

* $p \leq .05$, ** $p \leq .001$

Table 10
Effect of mediation of parent involvement in school on parent education and children's outcomes

	Reading						Math					
	Step 1		Step 2		Step 3		Step 1		Step 2		Step 3	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Child age	-.08**	.36**	-.05**	.10**	-.05**	.00**	-.05**	.32**	-.03**	.11**	-.02*	.01**
Child gender [†]	.11**		.09**		.09**		-.08**		-.09**		-.09**	
Gen know	.60**		.48**		.47**		.57**		.42**		.41**	
School type ^{††}	.03**		.01		.00		-.02*		-.05**		-.05**	
Mother educ			.07**		.06**				.08**		.07**	
Father educ			.07**		.06**							
PI school					.05**						.04**	
Sobel Test	$z = 5.48, p < .01$ for mother education $z = 5.90, p < .01$ for father education						$z = 5.35, p < .01$ for mother education					

[†] male = 0, female = 1, ^{††} public = 0, private = 1

The Sobel test (1982) was used to assess the strength of the significance of the mediation results because it has been found to work well with large sample sizes and multivariate analyses. This test assesses whether the indirect effect of the independent variable (i.e. mothers' and fathers' education) on the dependent variable (i.e. children's third grade reading and math outcomes) via the mediator (i.e. parent involvement at school) is significantly different from zero indicating a significant mediation exists (Preacher & Leonardelli, 2003). In this test, the unstandardized regression coefficients and their standard errors are entered into an equation. The regressions for the mediations were run both in SPSS and AM Software to obtain accurate regression coefficients and standard errors. Results from the Sobel test found that parent involvement *in school* significantly partially mediated the effect of mothers' education on reading ($z= 5.48, p < .01$) and on math ($z= 5.90, p < .01$) and fathers' education on reading ($z= 5.35, p < .01$). However, parent involvement in school did not significantly mediate the effect of fathers' education on children's math outcomes.

In sum, mothers' and fathers' education, income, and ethnicity were significantly associated with children's reading and math outcomes and parent involvement at school and at home. In addition, parents' beliefs about their children's academic abilities were significantly associated with reading and math outcomes. Parent involvement *in school* was positively associated with reading and math outcomes, while parent involvement *at home* was negatively associated with reading and math. Lastly, parent involvement in school was found to significantly partially mediate the effect of mothers' and fathers' education on children's reading outcomes and mother's education on math outcomes.

CHAPTER V

Discussion

The current study uses data from the ECLS-K study to explore predictors of parent involvement and to examine how parents' characteristics and parent involvement, both at school and at home, are related to children's reading and math outcomes during the early elementary school years. Moreover, this study adds to the literature by testing a mediation model of parent involvement between parents' characteristics and children's academic outcomes. Through the examination of parent characteristics and parent involvement both at school and at home using a nationally representative sample, the current study yields important research and policy implications about how parents impact children's academic success. Findings from the current study indicate that parents' education, income, ethnicity and beliefs about their children's academic abilities are predictive of parent involvement at school and at home and children's reading and math outcomes. In addition, parents who are involved in school have children with higher academic outcomes, while parents who are more involved at home have children with lower academic outcomes which may be the reason for more home involvement. Lastly, parent involvement in school was found to partially mediate the effect of mothers' and fathers' education on children's reading and math outcomes.

Results from the descriptive analyses show that the majority of parents whose children were in kindergarten in 1998 worked full time (i.e. 45% of mothers and 69% of fathers) and 68% of parents were married. Approximately 21% of parents had a bachelor's degree or above, and 79% of the sample was living at or above the national poverty threshold. Parents in general had positive perceptions of their children's

academic abilities. That is the majority of parents stated that their first graders were doing a little better or much better in reading (67%) and math (65%) compared to other children in the same classroom and believed that their children would attend college or obtain a higher degree. Most of the parents (74%) reported their children's schools do a good job providing opportunities for parents to volunteer, while approximately half of parents (51%) responded that the major barrier to their being more involved at school was their inability to take time off from work to attend school events.

Parents in the current study tended to be involved in their children's educational experiences at school and at home. Across the early elementary school years, parent involvement, both at school and at home, remained relatively stable. Parents participated in an average of five out of seven *school* involvement activities (i.e., attended parent-teacher conferences, an open house, PTA meeting, school event; contacted school; volunteered; fundraised) with approximately 70% of parents participating in four or more activities at school. Parents engaged in *home* involvement activities (e.g., read stories, helped with homework, practiced numbers) three to six times a week.

Multivariate analyses revealed associations between parents' characteristics, parent involvement at school and at home, and children's reading and math outcomes. It was found that parents' level of education, income and ethnicity were predictors of and correlated with children's third grade reading and math outcomes. These findings support the hypothesis that parents' demographic characteristics, especially parents' level of education, would be associated with children's third grade reading and math outcomes. These findings are consistent with prior studies suggesting that both parent education and income are strongly associated with children's academic success (Atzaba-Portia et al.,

2004, Duncan & Brooks-Gunn, 1997). As the bioecological theory would suggest, during parent-child social interactions (i.e., at the microsystem level) parents who are more educated and have higher incomes may stress the importance of education and doing well in school, and parents' resources of education and income may provide children with opportunities that support their academic achievement.

It was also hypothesized parents of first graders who believe their children are doing better in reading and math will have children with higher reading and math outcomes by the end of third grade than parents who have less positive beliefs about their child's academic standing. Moreover, it was expected that parents who believe their kindergarteners will go far in school will have children who do better in reading and math in third grade compared to parents who do not believe their children will go as far in school. Findings supported both hypotheses; parents' beliefs about their first graders' academic abilities were predictive of children's third grade reading and math outcomes. Parents' beliefs about their children's reading abilities accounted for 25% of the variance in reading outcomes, while beliefs about children's math abilities account for 18% of the variance in math outcomes. Additionally, parents who believe their kindergarteners will go far in school had children with higher reading and math scores in third grade than parents who did not believe their children would go as far.

Several explanations can account for these results. According to the bioecological theory, the effects of social interactions between people (i.e. how parents interact with their children) are determined by both environmental and biological characteristics of those people (Bronfenbrenner, 1979; 1989). Consistent with prior studies (Cabrera et al., under review; Eccles, 1992; Overstreet et al., 2005; Pomerantz & Dong, 2006;

Pomerantz, Wang & Ng, 2005) this study suggests that parents' beliefs about their children's academic abilities are strongly predictive of their children's ultimate school performance. These findings may perhaps be the result of children's internalizing their parents' expressed beliefs and expectations, creating a self-fulfilling prophecy. For example, parents may talk about school or the importance of education at home, or may compliment the child on his/her accomplishments to encourage learning and emphasize the importance of school success. Nevertheless, causality cannot be assumed from the analyses. It may be that rather than parents' beliefs having an effect on children's outcomes, parent may have accurate perceptions of their children's abilities which are evident in the strong associations between parents' beliefs and children's outcomes.

After examining how parents' characteristics affect children's academic achievement, parents' characteristics were then examined in relation to parent involvement behaviors. It was hypothesized that parents who were more educated (e.g. had a bachelor's degree or above) and had higher incomes would be more likely to be involved both at school and at home compared to less educated (e.g. less than a high school degree) and lower income parents. This hypothesis was partially supported. Parents who were more educated and had higher household incomes participated in more *school-based activities*, but not home involvement activities than parents who were less educated and had lower incomes. The finding that parents' demographic characteristics are associated with parent involvement in school is consistent with the bioecological theory that posits that children's development (i.e., their academic success) is affected by the surrounding environment, including parents' demographic characteristics such as their levels of education and income (Bronfenbrenner, 1979; 1989). It is likely that

parents who have more resources, such as the capacity to afford child care for their other children, take time off work, or do not have to work, can participate in more activities with their children at school. Unexpectedly, parents' education and income were not related to home involvement activities measured as reading to their child, telling stories, practicing numbers and helping with homework. When examining the crosstabs between these types of home involvement and parents' education, it appears that the majority of parents, regardless of their level of education, spend approximately the same amount of time each week participating in these types of learning activities with their children (i.e. 3-6 times a week).

Ethnicity was also found to be significantly associated with levels of parent involvement in school. Overall, minority (e.g., African American, Latino and Asian) parents were less involved in school-based activities compared to European American parents. This finding has been supported by previous literature (Carlisle et al., 2005; Chavkin & Williams, 1989; Delgado-Gaitan, 1991; Grolnick & Slowiaczek, 1994) although it remains unclear as to why minority parents are less involved in school. Some studies suggest that minority parents feel a clash between their culture and the majority (i.e., European American) culture and that they do not feel welcome or accepted in their children's school (Lareau, 1987; McKay et al., 2003; Patrikakou, & Weissberg, 1998; Peña, 2000; Ramirez, 2003). However, it must be noted that this finding may be confounded with other demographic variables such as parents' education, income or marital status which were not controlled. While few studies have controlled for demographic characteristics when examining the association between ethnicity and parent involvement, there is some evidence that minority parents who are more educated

and have higher incomes are more involved in their children's education (Hill, 1997) than more at-risk minority parents.

It was also hypothesized that parents who have negative perceptions of school and perceive barriers to school involvement (e.g. inconvenient meeting times for school events, work conflicts) will be less involved at school. The hypothesis was supported. Parents who believed that their children's school did not do a good job of providing opportunities to volunteer were less involved in school-based activities. Additionally, parents who perceived that barriers such as inconvenient meeting times, no child care and not being able to get off work prevented them from participating in school activities were less involved at school. These findings are consistent with the bioecological theory that states that the quality of the social interactions (i.e. favorable or unfavorable) will predict the outcome of the interaction (Bronfenbrenner, 1989; Bronfenbrenner & Ceci, 1994). That is, perceived negative interactions between parents and school (i.e. parents do not believe that the school is accommodating to their needs) should result in unfavorable outcomes, such as parents being less involved in school activities.

Unexpectedly, a negative association was found between parents' beliefs about their children's reading abilities and parents' involvement in home based learning activities. This finding is supported by the bioecological theory which posits that there are bidirectional relationships between the people and systems within the child's environment which impact development. Therefore, it may be that parents who perceive their children to be doing well academically in reading may participate in fewer home based activities such as reading to the child and helping with homework if they believe their child does not need the assistance.

Next it was hypothesized that parent involvement, at school as well as at home, would be positively associated with children's third grade reading and math outcomes. Findings indicate that this hypothesis was partially supported. Parents who were more involved in *school-based* activities had children who had higher reading and math outcomes than parents who were less involved in activities at school. Parent involvement at school was also strongly positively correlated with children's math and reading outcomes. The positive association between parent involvement *in school* and children's reading and math outcomes in third grade were not strong as previously reported in other studies (i.e. only accounting for 5-10% of the variance). This finding may reflect the fact that in the current study parents' education and income, which are strongly related to children's outcomes, were controlled for to determine the unique contribution of parent involvement on children's outcomes. Preliminary results confirmed that the associations between parent involvement at school and at home and children's reading and math outcomes were larger when parents' demographic characteristics were not controlled. Prior studies which report larger associations between parent involvement and children's outcomes often do not control for important parent demographic characteristics, which have been shown to affect children's outcomes (Comer & Haynes, 1991; Epstein & Dauber, 1991; Grolnick & Slowiaczek, 1994; Kohl et al., 2000; Nye et al., 2006; Zellman & Waterman, 1998).

Unexpectedly, parent involvement *at home* was negatively associated and correlated with children's reading and math outcomes. Parents who helped their children with homework at home and participated in more literacy/numeracy activities had children with lower reading and math outcomes than parents who participated in fewer

activities. These findings of negative associations between home involvement and children's academic outcomes may be a result of parents' perceptions of their children's abilities. Parents who believe that their children are not doing well in reading or math may help their children with homework and other home-based learning activities to support academic achievement. In addition, children who are not doing as well in school, regardless of their parents' perceptions, may be seeking help from their parents at home, thus setting up the likelihood that lower performing children are those whose parents step in and offer assistance. Therefore, these findings suggest that parents engage in more at home activities such as practicing numbers, reading to children and helping with homework when their children are not performing well at school, at least as measured by reading and math outcomes. Although in this study, children's general knowledge scores in kindergarten which are predictive of later reading and math achievement (Attewell et al., 2005; West et al., 2007), were controlled for, kindergarten reading and math scores were not. Future research should control for early reading and math outcomes to better understand if there is a causal association and if so in what direction. There is some recent evidence that parents' involvement with their children at home, especially helping with homework, is dependent on how they believe their children are performing academically in school (Pomerantz & Eaton, 2001; Pomerantz et al., 2005). It is also possible that teachers of children who are not performing well at school may be encouraging parents to help their children at home. This directionality of results is consistent with the bioecological theory which posits that parents and children do not act independently, but rather their social interactions and behaviors are dependent on one another (Bronfenbrenner, 1989).

The final hypothesis, that parent involvement partially mediates parents' characteristics and children's outcomes, was supported for parents' education and school involvement. Given findings of strong direct effects of mothers' and fathers' education, beliefs about children's academic abilities and of parent involvement on children's outcomes, parent involvement at school and at home were tested as mediators between parent education, parents' beliefs about their children's academic abilities and children's reading and math outcomes. Results revealed that parent involvement in school partially mediates the effects of mothers' and fathers' education on children's reading and mothers' education on children's math outcomes. Specifically, when parents are more highly educated, they are more involved in schools, and their children do better academically. Moreover, because educated parents are involved in schools their children do better in reading and math than children of less educated parents. Because there was only evidence of partial mediation, the findings indicate that there are both direct and indirect effects of parents' education on children's reading and math outcomes. Home involvement was not found to mediate the effects of parents' characteristic on children's outcomes. According to the bioecological theory, the interrelationships between parents, children, and schools, both positive and negative, affect children's academic performance through the transactions between one another (Bronfenbrenner, 1989).

To summarize, using a nationally representative sample of children and parents, the current study found that parents' education, income, beliefs about children's academic abilities and parent involvement at school and at home have direct effects on their children's academic outcomes. Significant and positive interactions were found with parents' beliefs about their children's reading and math abilities and parents' ethnicity,

and their involvement both at school and at home (i.e., helping with homework and engaging in literacy/numeracy activities). In addition, the effect of parents' education on children's reading and math outcomes is partially explained by parents' involvement in school activities.

Limitations

There are several limitations to the current study that need to be addressed. First, although using a large scale dataset such as the ECLS-K provides the opportunity to examine many different variables with a nationally representative sample over time, measurement of certain variables may be limited. For example, the ECLS-K does not have an adequate measure of parent self-efficacy with respect to helping their children succeed academically. Although studies have suggested that self-efficacy is strongly associated with parent involvement (Green et al., 2006; Grossman et al., 1999; Hoover-Dempsey et al., 1992; Hoover-Dempsey et al., 2005; Reed et al., 2000), the current study was unable to examine this potential predictor of involvement. In addition, the ECLS-K does not have a measure of children's IQ or cognitive abilities prior to entering kindergarten. While the general knowledge assessment can be used as a proxy for prior knowledge, this assessment also represents knowledge obtained from parents and therefore is not as accurate of an assessment to measure children's IQ or cognitive abilities. Another methodological concern was the slight inconsistency of questions asked across the years when the data were being collected. While the overwhelming majority of variables and measures were consistent across the data collection time points, there were several variables that were only asked at specific waves. For example, while most variables pertaining to parents' demographic and psychological characteristics were

assessed in kindergarten, other variables such as parents' beliefs about their children's performance in reading and math were asked for the first time in first grade instead of at the beginning of kindergarten. While beliefs are not expected to vary greatly from kindergarten to first grade, the current study was unable to use predictor variables from a single time point at the beginning of formal schooling (i.e. kindergarten). It is possible that parents' initial beliefs about their children's academic abilities changed over the first two years of school due to children's kindergarten performance or teacher feedback.

Second, the sample from the current study is not generalizable to the larger population of all children and families because children who were not proficient in English were not assessed on certain cognitive domains. Therefore the findings from the current study may not apply to limited English proficient children and families and need to be interpreted with caution. Third, as reported in the current study, strong associations were found between parents' ethnicity, income and education thus making it difficult to disentangle the effects of ethnicity from other socioeconomic variables (i.e. income and education) when examining parent involvement activities and children's academic outcomes. It was found that when statistically controlling for parents' income and education, ethnicity was still negatively associated with parent involvement at school and children's outcomes, but the strong associations between the variables make it difficult to parcel out the unique contribution of ethnicity.

Another limitation of the current study was the small effect sizes as reported in the results. While small effect sizes are typically reported in the majority of social science research, inferences and conclusions made from the results should be interpreted with caution (Duncan & Magnuson, 2007; McCartney & Rosenthal, 2000). In addition, results

from the bivariate correlations yielded small to moderate associations between the variables in the current study. Nevertheless, findings from both the correlation and regression analyses suggest that parents' demographic and psychological characteristics do have a stronger association with children's academic outcomes than parent involvement and need to be further examined.

Last, the current study was limited to examining only parent effects without considering the impact of teachers and schools on parent involvement and children's academic outcomes. Although whether the school was public or private was controlled for in the analyses, other school level characteristics were not measured and no teacher level characteristics were included in the analyses in the current study. Studies have indicated that both teachers and the school environment have an influence on children's academic achievement (Becker, & Epstein, 1982; Feldman, & Wentzel, 1990; Wentzel, Barry, & Caldwell, 2004). According to the bioecological theory, a child's development is impacted by his/her surrounding environment which includes school variables such as teacher characteristics or the make up of school (Bronfenbrenner, 1986; Farmer & Farmer, 1999), and thus the current study could have been more complete with the inclusion of teacher and school level variables.

Policy and Research Implications

Currently, the nation-wide emphasis on increasing parent involvement as a means of enhancing student achievement is based on predominantly small scale qualitative studies that may not generalize to the larger population, which can be achieved by utilizing recent large-scale databases. Although smaller studies allow for a closer

examination into the mechanisms of involvement, larger scale studies enable researchers to make estimates that better generalize to the population.

Using a national sample of parents and children, the current study suggests that not all types of parent involvement (at school and at home) have the same effects on children's academic outcomes. Parent involvement in school (e.g. volunteering, attending conferences and open houses) was found not only to have direct impacts on children's outcomes, but it also mediated the association between parents' levels of education and children's reading and math outcomes. This partial mediating effect indicates the need to consider parent involvement at school, as a mechanism for helping those students succeed in school while also providing parents with educational resources to help children to achieve academically. The association between home-based involvement activities and lower academic outcomes needs additional research to untangle the cause and effect or identify factors that impact both. It is unclear whether earlier parent home involvement predicted children's poorer achievement, or, more likely, that children's poor achievement elicits increased parent involvement in home-based educational activities either by parents anticipating that their children will struggle academically or by children requesting assistance from their parents. It may well be that children who were performing poorly in reading and math would have had worse outcomes had their parents not been helping them with their homework.

The current study suggests that parent characteristics such as education and income and parent involvement activities have direct effects on children's academic outcomes and need to be further explored in future parent involvement research. Parents' beliefs about their children's academic abilities (e.g. how the child is doing in reading

and math, how far in school the child will go) were also found to be strongly associated with children's success in school. Therefore, parents who do not hold positive beliefs about their children's academic performance may be giving their children the subtle message that their expectations of their children's academic success are low.

Nevertheless, the direction of causality cannot be determined from the current study.

The results of the current study do not support the view that parent involvement in school can dramatically increase children's reading and math outcomes as suggested by recent legislation such as the NCLB act. This perspective has been based on studies that did not control for parents' demographic and psychological characteristics that as shown in this study are strongly predictive of children's reading and math outcomes. By controlling for other factors (i.e. parents' characteristics) that are associated with parent involvement, the current study provides more accurate findings about the effect of parents on children's academic outcomes. Findings from the current study do not suggest that increasing school involvement as proposed by NCLB is not an appropriate goal; rather these findings imply that parents' characteristics (e.g., education and beliefs) have a stronger impact on children's academic outcomes than parent involvement. Schools and policymakers should consider strategies to change parents' perceptions or offset and reduce the effect of the parents' poor perceptions of their child's academic abilities, but also consider parent perceptions of the school and how best to improve those perceptions as a means of improving the likelihood of the child's academic success. Parent workshops, early parent exposure to the school, teachers and classrooms, adult literacy and numeracy programs are among the potential strategies to improve parents' educational experiences, beliefs about school and increase children's academic outcomes.

Future Directions

The aim of the current study was to better understand the associations between parents' characteristics, parent involvement and children's academic outcomes. Parents' education, income and beliefs about their children's academic abilities were found to be associated with parent involvement and child outcomes during the early elementary school years. Future research should explore whether these trends continue as children move beyond third grade. Some studies suggest that as children make the transition between elementary and middle school, school-based parent involvement decreases (Epstein & Dauber, 1991; Griffith, 1996; NCES, 1998). If that is true, how do these associations found in the current study change as children move throughout elementary school and into middle school? For example, do parents' beliefs about their kindergarteners and first graders influence how much they are involved in future years, and does that future involvement continue to affect student achievement?

Although the current study found that parent involvement, in school and at home, is an important predictor of children's reading and math outcomes, the mechanism by which parent involvement leads to increased student achievement is less well understood. Some studies suggest that parents who are involved in their children's education convey the belief that education is important and by being involved, parents monitor their child's school performance more closely (Hoover-Dempsey & Sandler, 1995; 2005). More research is needed, however, to begin to better understand parent involvement, both at school and at home, as a mechanism for increasing student achievement.

Lastly, the current study suggests that parent involvement in school mediates the association between parents' education and children's academic outcomes. Additional

research is needed to examine other potential mediators and moderators between parents' characteristics and children's outcomes. For example, preliminary research suggests that parents' beliefs about their children's reading and math abilities moderate the association between parents' demographic characteristics and children's reading and math outcomes.

The current study offers the field of parent involvement a better understanding of how parents affect their children academically, not only through their demographic and psychological characteristics but also through their involvement behaviors. Findings from this study underscore past results that parents' education, income and beliefs about their children's academic abilities are strongly related to how children fare in school. It offers evidence that parent involvement at school is beneficial to children, having both a direct impact on child outcomes as well as mediating the association between parents' education and children's reading and math outcomes. Furthermore, the current study points out the need for future research to examine the bidirectionality of the association between parent involvement at home and children's outcomes. Using a nationally representative sample and controlling for parent and child characteristics provided more accurate and generalizable findings regarding the predictors and outcomes of parent involvement for children's reading and math outcomes during the early elementary school years.

APPENDIX A

Parent Demographics Questionnaire

Subset Sample

SPQ150

When {CHILD} was born, were (his/her) biological mother and biological father married? 1

- YES
- 2 NO

DK Allowed

Refusal Allowed

SPQ155

OISPLA Y 'HELP AVAILABLE' IN BRIGHT WHITE.

HELP AVAILABLE

HELP TEXT:

Regularly: A language, other than English, that is spoken on regular basis (that is, occurring at least weekly) by at least one household member.

- 1 YES
- 2 NO

OK Allowed (SPQ160)

Refusal Allowed (SPQ160)

SPQ157

OISPLA Y 'PRIMARY' IN BOLD.

OISPLA Y 'HELP AVAILABLE' IN BRIGHT WHITE.

HELP AVAILABLE

CODE '15' IF RESPONDENT CAN'T CHOOSE A PRIMARY LANGUAGE.

HELP TEXT:

Primary language: The language spoken the most of the time by most of the household members.

- 0 ENGLISH
- 1 ARABIC 2
- CHINESE
- 3 FILIPINO LANGUAGE 4
- FRENCH
- 5 GERMAN
- 6 GREEK
- 7 ITALIAN
- 8 JAPANESE
- 9 KOREAN
- 10 POLISH
- 11 PORTUGUESE
- 12 SPANISH
- 13 VIETNAMESE
- 14 SOME OTHER LANGUAGE (SPECIFY)
- 15 RESPONDENT CANNOT CHOOSE A PRIMARY LANGUAGE

Other Specify Allowed

O
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(SPQ157)

(SPQ160)

SPQ160

DISPLAY 'HELP AVAILABLE' IN BRIGHT WHITE.

HELP AVAILABLE

Now I have a few questions about education and job training. What is the highest grade or year of school that you have completed?

HELP TEXT:

Highest Grade or Year of School Completed: For grades 1 -11, enter the exact grade level. If the person you are asking about completed elementary school, find out the last grade completed. If the respondent says the person finished 12th grade, ask whether the person received a diploma or got the equivalent of a high school diploma.

Completing a given grade in school should be counted as the number of years it normally takes to complete that grade level of education, regardless of how many years it actually took the person to finish. This means that for persons who skipped or repeated grades in elementary school, you will enter the highest grade completed regardless of the number of years they were in school. This rule is true for elementary school through high school and is especially relevant to college.

High school diploma/equivalent: A certificate that verifies that a person has successfully completed the required courses of a high school curriculum. Includes both actually graduating from high school or having a GED. The GED is an exam certified equivalent to a high school diploma received when the person has not actually received a degree from attending high school, but has acquired his/her GED (high school equivalency based on passing the GED exam).

Vocational/technical program after high school but no vocational diploma: The person attended this type of program, but did not earn a degree/diploma/certificate of successful completion of the program. Vocational/trade school after high school refers to work or trade-related education received after completing high school, but does not include college. Examples include secretarial school, mechanical or computer training school, etc. Some community colleges offer vocational training, but this would be considered "1-2 years of college" or "associate's degree" and not vocational or trade school.

Vocational/technical program after high school: The person attended this type of program, but DID earn a degree/diploma/certificate of successful completion of the program. Vocational/trade school after high school refers to work or trade-related education received after completing high school, but does not include college. Examples include secretarial school, mechanical or computer training school, etc. Some community colleges offer vocational training, but this would be considered "1-2 years of college" or "associate's degree" and not vocational or trade school.

Some college but no degree: The person does not have a 4-year college (bachelor's) degree but has completed a class for credit at a college, university, or vocational/technical school.

Associate's degree: A 2-year college degree typically earned at a community college (rather than a trade school).

Bachelor's degree: A 4-year college degree earned at a university or 4-year college. It is sometimes called an "undergraduate degree."

Graduate or professional school but no degree: The person attended a graduate or professional school that advanced him/her toward a degree beyond a Bachelor's degree (for example, a Master's, Doctorate, or other professional degree). However, the person did not complete the program or earn the degree.

Master's (MA, MS): Studies beyond a bachelor's degree, but not a Ph.D. or EDD.

Doctorate Degree (Ph.D., EDD): Studies beyond a Master's degree that result in a doctorate degree.

Professional degree after bachelor's degree (Medicine/MD; Dentistry/DDS, Law/JD/LLB): Any other graduate degrees earned with academic studies beyond the bachelor's.

1 1ST GRADE 2	(SPQ180)
2ND GRADE 3	(SPQ180)
3RD GRADE	(SPQ180)
44TH GRADE	(SPQ180)
55TH GRADE	(SPQ180)
66TH GRADE	(SPQ180)

7 7TH GRADE
 88TH GRADE
 99TH GRADE
 10 10TH GRADE
 11 11TH GRADE
 12 12TH GRADE BUT NO DIPLOMA
 13 HIGH SCHOOL DIPLOMA/EQUIVALENT
 14 VOCITECH PROGRAM AFTER HIGH SCHOOL BUT NO VOCITECH
 DIPLOMA
 15 VOCITECH PROGRAM AFTER HIGH SCHOOL 16
 SOME COLLEGE BUT NO DEGREE
 17 ASSOCIATE'S DEGREE
 18 BACHELOR'S DEGREE
 19 GRADUATE OR PROFESSIONAL SCHOOL BUT NO DEGREE 20
 MASTER'S DEGREE (MA, MS)
 21 DOCTORATE DEGREE (PHD, EDD)
 22 PROFESSIONAL DEGREE AFTER BACHELOR'S DEGREE *DK*

Allowed

Refusal Allowed

HELP TEXT:

High school diploma/equivalent: A high school equivalency means a diploma or certificate completed after leaving high school, usually a GED.

1 YES 2 NO

DKAllowed

Refusal Allowed

SPQ180

DISPLAY 'HELP AVAILABLE' IN BRIGHT WHITE.

HELP AVAILABLE

IF NO PARTNER, CODE '23'.

HELP TEXT:

Highest Grade or Year of School Completed: For grades 1 -11, enter the exact grade level. If the person you are asking about completed elementary school, find out the last grade completed. If the respondent says the person finished 12th grade, ask whether the person received a diploma or got the equivalent of a high school diploma.

Completing a given grade in school should be counted as the number of years it normally takes to complete that grade level of education, regardless of how many years it actually took the person to finish. This means that for persons who skipped or repeated grades in elementary school, you will enter the highest grade completed regardless of the number of years they were in school. This rule is true for elementary school through high school and is especially relevant to college.

High school diploma/equivalent: A certificate that verifies that a person has successfully completed the required courses of a high school curriculum. Includes both actually graduating from high school or having a GED. The GED is an exam certified equivalent to a high school diploma received when the person has not actually received a degree from attending high school, but has acquired his/her GED (high school equivalency based on passing the GED exam).

Vocational/technical program after high school but no vocational diploma: The person attended this type of program, but did not earn a degree/diploma/certificate of successful completion of the program. Vocational/trade school after high school refers to work or trade-related education received after completing high school, but does not include college. Examples include secretarial school, mechanical or computer training school, etc. Some community colleges offer vocational training, but this would be considered "1-2 years of college" or "associate's degree" and not vocational or trade school.

Vocational/technical program after high school: The person attended this type of program, but DID earn a degree/diploma/certificate of successful completion of the program. Vocational/trade school after high school refers to work or trade-related education received after completing high school, but does not include college. Examples include secretarial school, mechanical or computer training school, etc. Some community colleges offer vocational training, but this would be considered "1-2 years of college" or "associate's degree" and not vocational or trade school.

Some college but no degree: The person does not have a 4-year college (bachelor's) degree but has completed a class for credit at a college, university, or vocational/technical school.

Bachelor's degree: A 4-year college degree earned at a university or 4-year college. It is sometimes called an "undergraduate degree."

Graduate or professional school but no degree: The person attended a graduate or professional school that advanced him/her toward a degree beyond a Bachelor's degree (for example, a Master's, Doctorate, or other professional degree). However, the person did not complete the program or earn the degree.

Master's (MA, MS): Completion of studies beyond a bachelor's degree, but not a Ph.D. or EDD.

Doctorate Degree (Ph.D., EDD): Completion of studies beyond a Master's degree that result in a doctorate degree.

Professional degree after bachelor's degree (Medicine/JMD; Dentistry/DDS, Law/JD/LLB): Any other graduate degrees earned with academic studies beyond the bachelor's.

1 1ST GRADE 2	(SPQ200)
2ND GRADE 3	(SPQ200)
3RD GRADE	(SPQ200)
44TH GRADE	(SPQ200)
55TH GRADE	(SPQ200)
66TH GRADE	(SPQ200)
	(SPQ200)
	(SPQ200)
77TH GRADE	
88TH GRADE	
99TH GRADE	
10 10TH GRADE	
11 11TH GRADE	
12 12TH GRADE BUT NO DIPLOMA	
13 HIGH SCHOOL DIPLOMA/EQUIVALENT	
14 VOCITECH PROGRAM AFTER HIGH SCHOOL BUT NO VOCITECH DIPLOMA	
15 VOCITECH PROGRAM AFTER HIGH SCHOOL 16	
SOME COLLEGE BUT NO DEGREE	
17 ASSOCIATE'S DEGREE	
18 BACHELOR'S DEGREE	
19 GRADUATE OR PROFESSIONAL SCHOOL BUT NO DEGREE 20	
MASTER'S DEGREE (MA, MS)	
21 DOCTORATE DEGREE (PHD, EDD)	
22 PROFESSIONAL DEGREE AFTER BACHELOR'S DEGREE 23	
NO SPOUSE OR PARTNER IN HOUSEHOLD	

DKAllowed

Refusal Allowed

SPQ190

DISPLA Y 'HELP AVAILABLE'IN BRIGHT WHITE.

HELP AVAILABLE

HELP TEXT:

High school diploma/equivalent: A high school equivalency means a diploma or certificate completed after leaving high school, usually a GED.

1 YES 2 NO

DKAllowed

Refusal Allowed

SPQ200

DISPLA Y 'HELP A VAILABLE' IN BRIGHT WHITE HELP
AVAILABLE

Between {CHILD}'s birth and when (he/she) entered kindergarten, did {CHILD}'s mother work outside the home for pay?

IF R VOLUNTEERED THAT SHE IS CHILD'S MOTHER, SAY 'YOU' INSTEAD OF '{CHILD}'S MOTHER.' HELP TEXT:

Work for pay: Paid work for wages, salary, commission, or pay 'in kind.' Examples of 'pay in kind' include meals, living quarters, or supplies provided in place of wages. This definition of employment includes work in the person's own business, professional practice, or farm, paid leaves of absence (including vacations and illnesses), and work without pay in a family business or farm run by a relative. This definition excludes unpaid volunteer work (such as for a church or charity), unpaid leaves of absence, temporary layoffs (such as a strike), and work around the house.

1 YES 2 NO

3 NO MOTHER IN HOUSEHOLD

DKAllowed

Refusal Allowed

SPQ210

DISPLA Y 'HELP A VAILABLE' IN BRIGHT WHITE HELP
AVAILABLE

IF R VOLUNTEERED THAT SHE IS CHILD'S MOTHER, SAY 'YOU' INSTEAD OF {CHILD}'S MOTHER. HELP TEXT:

WIC: This program provides food assistance and nutritional screening to low-income pregnancy and postpartum women and their infants, as well as to low-income children up to age 5. WIC is short for the Special Supplemental Food Program for Women, Infants, and Children. WIC benefits can include food, checks, and/or vouchers.

1 YES 2 NO

DKAllowed Refusal

Allowed

SPQ220

Did {CHILD} receive any WIC benefits as an infant or child? 1 YES

2 NO

DKAllowed

Refusal Allowed

SPQ230BX

GO TO PIQ (PARENTS INVOLVEMENT WITH CHILD'S SCHOOL).

APPENDIX B

Parent Interview Questionnaire-Subset

Spring of Kindergarten

PIQOSOBX

IF (NumberOfChildren >1 and ChildNum=1), GO TO PIQ100.

IF (ChildNum=1), GO TO PIQ11 O.

IF (NumberOfChildren >1 and ChiidNum=2 and PIQ100=2), GO TO PIQ110.

IF (NumberOfChiidren >1 and ChildNum=2) AND PIQ100=1, DK or RF, GO TO PIQ490BX.

PIQ100

Are {CHILD} and {TWIN} in the same class?

1 YES

2 NO

OK Allowed

Refusal Allowed

PIQ110

During this school year, have you or another adult in your household taken it upon yourself to contact {CHILD}'s teacher or school for any reason having to do with {CHILD}?

1 YES 2 NO

OK Allowed (PIQ125BX) Refusal Allowed (PIQ125BX)

PIQ120

Why did you contact (CHILD)'s teacher or school?

PROBE: Any other reason?

1 TO REPORT AN ABSENCE OR TARDINESS

2 TO DISCUSS PROBLEMS THE CHILD IS HAVING AT SCHOOL 3

TO REQUEST SPECIAL PLACEMENT OR SERVICES

4 TO REQUEST EVALUATION BY A SPECIALIST

5 TO REQUEST A SPECIFIC TEACHER

Code All That Apply

Other Specify Allowed

OK Allowed

Refusal Allowed

PIQ125BX

IF (NumberOfChildren=1)

OR IF (NumberOfChiidren >1 and ChiidNum=1), GO TO PIQ130.

IF (NumberOfChildren >1 and ChildNum=2), GO TO PIQ290.

PIQ130

Since the beginning of this school year, have you or the other adults in your household ...

Attended an open house or a back-to-school night? 1

YES

(PIQ132)

2 NO

(PIQ140)

OK Allowed (PIQ140)

Refusal Allowed (PIQ140)

PIQ132

Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? 1
MOTHER

- 2 FATHER
- 3 BOTH
- 4 NEITHER

DKAllowed

Refusal Allowed

PIQ136

DISPLA Y 'has {CHILD}'s mother' IF PIQ132=1 (MOTHER).

DISPLA Y 'has {CHILD}'s father' IF PIQ132=2 (FATHER).

DISPLA Y 'have both of them' IF PIQ132=3 (BOTH).

DISPLA Y 'have other adults in your household' IF PIQ132=4 (NEITHER).

How many times (have/has) ({CHILD}'s (mother/father/both of them/{you or} other adults in your household) attended an open house or a back-to-school night [since the beginning of this school year]?

Range: 1 to 99

DKAllowed

Refusal Allowed

PIQ140

[Since the beginning of this school year, have you or the other adults in your household ...]

Attended a meeting of a PTA, PTO, or Parent-Teacher Student Organization? 1

- YES
- 2 NO

DK Allowed (PIQ145)

Refusal Allowed (PIQ145)

PIQ142

Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? 1

- MOTHER
- 2 FATHER
- 3 BOTH
- 4 NEITHER

DKAllowed

Refusal Allowed

PIQ144

DISPLA Y 'has {CHILD}'s mother' IF PIQ 142= 1 (MOTHER).

DISPLA Y 'has {CHILD}'s father' IF PIQ142=2 (FATHER).

DISPLA Y 'have both of them' IF PIQ142=3 (BOTH).

DISPLA Y 'have other adults in your household' IF PIQ142=4 (NEITHER). DISPLA Y

'have

you or

other

adults

in your

househ

old' IF

PIQ142

=DK

OR RF.

(PIQ142)

(PIQ145)

How many times (have/has) ({CHILD}'s (mother/father/both of them/{you or} other adults in your household) attended a meeting of PTA, PTO, or Parent-Teacher Student Organization [since the beginning of this school year]?

Range: 1 to 99

DKAllowed

Refusal Allowed

PIQ145
[Since the beginning of this school year, have you or the other adults in your household ...]

(PIQ147)
(PIQ150)

Gone to a meeting of a parent advisory group or policy council? 1

YES

2 NO

OK Allowed (PIQ150)

Refusal Allowed (PIQ150)

PIQ147

Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? 1

MOTHER

2 FATHER

3 BOTH

4 NEITHER

OK Allowed

Refusal Allowed

PIQ149

OISPLA Y 'has {CHILD}'s mother' IF PIQ147=1 (MOTHER).

OISPLA Y 'has {CHILD}'s father' IF PIQ147=2 (FATHER).

OISPLA Y 'have both of them' IF PIQ147=3 (BOTH).

OISPLA Y 'have other adults in your household' IF PIQ147=4 (NEITHER).

How many times (have/has) ({CHILD}'s (mother/father/both of them/{you or} other adults in your household) gone to a meeting of a parent advisory group or policy council [since the beginning of this school year]?

Range: 1 to 99

OK Allowed

Refusal Allowed

PIQ150

[Since the beginning of this school year, have you or the other adults in your household ...]

1 YES

2 NO

OK Allowed (PIQ160)

Refusal Allowed (PIQ160)

*Refusal
Allowed
(PIQ152)
(PIQ160)*

PIQ152

Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? 1

MOTHER

2 FATHER

3 BOTH

4 NEITHER

OK Allowed

PIQ156

DISPLA Y 'has {CHILD}'s mother' IF PIQ152=1 (MOTHER).

DISPLA Y 'has {CHILD}'s father' IF PIQ152=2 (FATHER).

DISPLA Y 'have both of them' IF PIQ152=3 (BOTH).

DISPLA Y 'have other adults in your household' IF PIQ152=4 (NEITHER).

How many times (have/has) ({CHILD}'s (mother/father/both of them/(you or) other adults in your household) gone to a regularly-scheduled parent-teacher conference with {CHILD}'s teacher or meeting with {CHILD}'s teacher [since the beginning of this school year]?

Range: 1 to 99

DK Allowed

Refusal Allowed

PIQ160

[Since the beginning of this school year, have you or the other adults in your household ...]

Attended a school or class event, such as a play, sports event, or science fair? 1 YES

2 NO

DK Allowed (PIQ170)

Refusal Allowed (PIQ170)

'have

you or

other

PIQ162

Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? 1

MOTHER

2 FATHER

3 BOTH

4 NEITHER

DK Allowed

Refusal Allowed

adults

in your

househ

old' IF

PIQ166

DISPLA Y 'has {CHILD}'s mother' IF PIQ162=1 (MOTHER).

DISPLA Y 'has {CHILD}'s father' IF PIQ162=2 (FATHER).

DISPLA Y 'have both of them' IF PIQ162=3 (BOTH).

PIQ162

=DK

OR RF.

(PIQ162)

(PIQ170)

DISPLA Y 'have other adults in your household' IF PIQ162=4 (NEITHER). DISPLA Y

How many times (have/has) ({CHILD}'s (mother/father/both of them/(you or) other adults in your household) attended a school or class event [since the beginning of this school year]?

Range: 1 to 99 OK

Allowed Refusal

Allowed

PIQ170

[Since the beginning of this school year, have you or the other adults in your household ...]

(PIQ172)

(PIQ175)

- 1 YES
- 2 NO

DK Allowed (PIQ175)

Refusal Allowed (PIQ175)

PIQ172

Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? 1

- MOTHER
- 2 FATHER
- 3 BOTH
- 4 NEITHER

DKAllowed

Refusal Allowed

PIQ174

DISPLAY 'has {CHILD}'s mother' IF PIQ172=1 (MOTHER).

DISPLA Y 'has {CHILD}'s father'IF PIQ172=2 (FATHER).

DISPLA Y 'have both of them' IF PIQ172=3 (BOTH).

DISPLA Y 'have other adults in your household'IF PIQ172=4 (NEITHER).

How many times (have)has ({{CHILD}'s (mother/father/both of them/{you or} other adults in your household) acted as a volunteer at the school or served on a committee [since the beginning of this school year]?

Range: 1 to 99

DKAllowed

Refusal Allowed

PIQ175

[Since the beginning of this school year, have you or the other adults in your household ...]

Participated in fundraising for (CHILD)'s school? 1

- YES
- 2 NO

(PIQ177)

(PIQ190)

DK Allowed (PIQ190)

Refusal Allowed (PIQ190)

PIQ177

Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? 1

- MOTHER
- 2 FATHER
- 3 BOTH
- 4 NEITHER

DKAllowed

Refusal Allowed

PIQ179

DISPLA Y 'has {CHILD}'s mother' IF P/0177= 1 (MOTHER).

DISPLAY 'has {CHILD}'s father' IF P/0177=2 (FATHER).

DISPLA Y 'have both of them' IF P/0177=3 (BOTH).

DISPLA Y 'have other adults in your household' IF P/0177=4 (NEITHER).

How many times (have/has) ({CHILD}'s (mother/father/both of them/{you or} other adults in your household) participated in fundraising for {CHILD}'s school [since the beginning of this school year]?

Range:1 to 99

DKAllowed

Refusal Allowed

PIQ190

For each of the following statements, please tell me how well {CHILD}'s school has done with each activity during this school year.

- 1 Does this very well,
- 2 Just O.K., or
- 3 Doesn't do this at all?

DKAllowed

Refusal Allowed

PIQ200

[For each of the following statements, please tell me how well {CHILD}'s school has done with each activity during this school year.]

The school helps you understand what children at {CHILD}'s age are like.

- 1 Does this very well,
- 2 Just OK, or
- 3 Doesn't do this at all?

DKAllowed

Refusal Allowed

PIQ210

[For each of the following statements, please tell me how well {CHILD}'s school has done with each activity during this school year.]

- 1 Does this very well,
- 2 Just O.K., or
- 3 Doesn't do this at all?

DKAllowed

Refusal Allowed

PIQ220

[For each of the following statements, please tell me how well {CHILD}'s school has done with each activity during this school year.]

The school provides workshops, materials, or advice about how to help {CHILD} learn at home.

- 1 Does this very well,
- 2 Just O.K., or
- 3 Doesn't do this at all?

DKAllowed

Refusal Allowed

PIQ230

[For each of the following statements, please tell me how well {CHILD}'s school has done with each activity during this school year.]

- 1 Does this very well,
- 2 Just O.K., or
- 3 Doesn't do this at all?

DKAllowed

Refusal Allowed

PIQ280

About how far would you say it is from your home to the school {CHILD} attends?

Would you say ...

- 1 Less than 1/8th mile (Less than 3 blocks), 2
- 1/8th mile to 1/4 miles (3-5 blocks),
- 3 More than 1/4 mile, but less than 1/2 mile (6-9 blocks), 4
- 1/2 mile to less than 1 mile (10-19 blocks),
- 5 One mile to 2.5 miles (less than 5 minute drive), 6
- 2.6 miles to 5 miles (between 5-10 minute drive),
- 7 5.1 miles to 7.5 miles (between 11 and 15 minute drive),
- 8 7.6 miles to 10 miles (between 16 and 20 minute drive), or 9
- 11 miles or more (more than 20 minute drive)?

Other Specify Allowed

DKAllowed

Refusal Allowed

PI0290

How often in the past month, has {CHILD}'s teacher sent home ideas for things to do with {CHILD} at home? Would you say ...

- 1 Never,
- 2 One or two times, or 3
- Three or more times?

DKAllowed

Refusal Allowed

PIQ295BX

IF (NumberOfChildren=1) OR

IF (NumberOfChildren >1 and ChildNum=1), GO TO PI0300.

PIQ300

DISPLA Y {CHILD}'S IF ONL Y ONE SAMPLED CHILD.

DISPLA Y {CHILD}'s {or {TWIN}'s} IF MORE THAN ONE SAMPLED CHILD.

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?

Range:0 to 40

DKAllowed

Refusal Allowed

PIQ305

Does {CHILD} have any older brothers or sisters who attend or attended the same school? 1

YES

2 NO

DKAllowed

Refusal Allowed

PIQ310

How does {CHILD} usually get to school?

Does (he/she) ...

1 Walk or ride a bike,

2 ride a bus,

3 is {he/she} dropped off by a parent, relative, or adult friend, relative, or adult friend

4 is {he/she} dropped off by {his/her} day care provider?
day care provider

Other Specify Allowed

DKAllowed

Refusal Allowed

PIQ400

FOR FALL K CONTINUING HOUSEHOLDS:

IF PL0020=2 FROM FALL K (NO OTHER LANGUAGE REGULARLY SPOKEN AT HOME BESIDES ENGLISH) OR IF PL0060=0 FROM FALL K (ENGLISH SPOKEN AS PRIMARY LANGUAGE), DISPLAY 'ENGLISH.'

OTHERWISE, DISPLAY THE LANGUAGE SPECIFIED IN PL0060 FROM FALL K.

IF FALL K PLO060=14, DISPLAY THE OTHER SPECIFY TEXT.

IF FALL K PL0060=15, DK, RF, DISPLAY "A LANGUAGE OTHER THAN ENGLISH."

FOR FALL K NON-RESPONDENTS:

IF SP0155=2 (NO OTHER LANGUAGE REGULARLY SPOKEN AT HOME BESIDES ENGLISH), DK, RF, OR SP0157=0 (ENGLISH SPOKEN AS PRIMARY LANGUAGE), DISPLAY 'ENGLISH.'

OTHERWISE, DISPLAY THE LANGUAGE SPECIFIED IN SP0157.

IF SPO 157= 14, DISPLAY TEXT FROM OTHER SPECIFY.

IF SPO.157=15, DK, RF, DISPLAY "A LANGUAGE OTHER THAN ENGLISH."

Last time we spoke to you, you said that (ENGLISH/NON-ENGLISH LANGUAGE) is spoken in your home. When (CHILD)'s teacher sends home notes or newsletters, are these in (ENGLISH/NON-ENGLISH LANGUAGE)?

1 YES

2 NO

DK Allowed

Refusal Allowed

PIQ410

This year, have the following reasons made it harder for you to participate in activities at (CHILD)'s school?

Inconvenient meeting times?

1 YES

2 NO

DK Allowed

Refusal Allowed

PIQ420

[This year, have the following reasons made it harder for you to participate in activities at (CHILD)'s school?]

No child care keeps your family from going to school meetings or events? 1

YES

2 NO

DK Allowed

Refusal Allowed

PIQ430

[This year, have the following reasons made it harder for you to participate in activities at (CHILD)'s school?]

Family members can't get time off from work? 1

YES

2 NO

DK Allowed

Refusal Allowed

PIQ440

[This year, have the following reasons made it harder for you to participate in activities at (CHILD)'s school?]

Problems with safety going to the school?

1 YES

2 NO

OK Allowed

Refusal

Allowed

PIQ450

[This year, have the following reasons made it harder for you to participate in activities at (CHILD)'s school?]

The school does not make your family feel welcome? 1

YES

2 NO

DKAllowed

Refusal Allowed

PI0460

[This year, have the following reasons made it harder for you to participate in activities at (CHILD)'s school?]

Problems with transportation to the school?

1 YES 2 NO

DKAllowed

Refusal Allowed

PIQ470

[This year, have the following reasons made it harder for you to participate in activities at (CHILD)'s school?]

Problems because you or members of your family speak a language other than English and meetings are conducted only in English?

1 YES

2 NO

DKAllowed

Refusal Allowed

PI04SO

[This year, have the following reasons made it harder for you to participate in activities at {CHILD}'s school?]

You don't hear about things going on at school that you might want to be involved in? 1

YES

2 NO

DKAllowed

Refusal Allowed

PI0490BX

GO TO SECTION FSQ (FAMILY STRUCTURE).

HEQ050BX

IF (NumberOfChildren=1)

OR

IF (NumberOfChildren >1 and ChildNum=1), GO
TO HEQ100.

HEQ100

DISPLA Y PREVIOUS MONTH FOR "MONTH" AND DATE OF INTERVIEW FOR "DA Y".

In the past month, that is, since (MONTH) (DAY), has anyone in your family done the following things with (CHILD)?

Visited a library?

1 YES 2 NO

DKAllowed

Refusal Allowed

HEQ130

DISPLA Y PREVIOUS MONTH FOR "MONTH" AND DATE OF INTERVIEW FOR "DA Y".

[In the past month, that is, since (MONTH) (DAY), has anyone in your family done the following things with (CHILD)?]

Gone to a play, concert, or other live show? 1

YES

2 NO

DKAllowed

Refusal Allowed

HEQ140

DISPLA Y PREVIOUS MONTH FOR "MONTH" AND DATE OF INTERVIEW FOR "DA Y".

[In the past month, that is, since (MONTH) (DAY), has anyone in your family done the following things with (CHILD)?]

Visited an art gallery, museum, or historical site? 1

YES

2 NO

DKAllowed

Refusal Allowed

HEQ150

DISPLA Y PREVIOUS MONTH FOR "MONTH" AND DATE OF INTERVIEW FOR "DA Y".

[In the past month, that is, since (MONTH) (DAY), has anyone in your family done the following things with (CHILD)?]

Visited a zoo, aquarium, or petting farm? 1

YES

2 NO

DKAllowed

Refusal Allowed

HEQ180

DISPLA Y PREVIOUS MONTH FOR "MONTH" AND DATE OF INTERVIEW FOR "DA Y. "

"[In the past month, that is, since {MONTH} {DAY}, has anyone in your family done the following things with {CHiID}?"

Attended an athletic or sporting event in which {CHiID} is not a player? 1

- YES
2 NO

*DKAllowed**Refusal Allowed*

HEQ200

DISPLA Y "PAST WEEK" IN BRIGHT WHITE.

In the past week, how often did {CHiID} look at picture books outside of school?

Would you say ... 1

- Never,
2 Once or twice a week, 3
3 to 6 times a week, or 4
Every day?

*DKAllowed**Refusal Allowed*

HEQ210

In the past week, how often did {CHiID} read to (himself/herself) or to others outside of school?

Would you say ... 1

- Never,
2 Once or twice a week, 3
3 to 6 times a week, or 4
Every day?

*DKAllowed**Refusal Allowed*

HEQ220

Do you have a home computer that {CHiID} uses? 1

- YES
2 NO

*DK Allowed (HEQ300)**Refusal Allowed (HEQ300)**Refusal
Allowed*

(HEQ230)

(HEQ300)

HEQ230

In a typical week, how often does {CHiID} use the computer?

Would you say ...

- 1 Never,
2 Once or twice a week, 3
3 to 6 times a week, or 4
Every day?

*DKAllowed**Refusal Allowed*

HEQ240

Does {CHiID} use the computer ...

To play with programs that teach (him/her) something, like math or reading skills? 1

- YES
2 NO

DKAllowed

HEQ250

[Does {CHILD} use the computer ...]

To play with drawing or art programs? 1

YES
2 NO

*OK Allowed**Refusal Allowed***HEQ260**

[Does {CHILD} use the computer ...]

To get on the Internet? 1

YES
2 NO

*OK Allowed**Refusal Allowed***HEQ300**

Outside of school hours, has {CHILD} ever participated in:

1 YES 2 NO *OK*
Allowed Refusal
Allowed

HEQ310

[Outside of school hours, has {CHILD} ever participated in:]

Organized athletic activities, like basketball, soccer, baseball, or gymnastics? 1 YES

2 NO

*OK Allowed**Refusal Allowed***HEQ320**

[Outside of school hours, has {CHILD} ever participated in:]

Organized clubs or recreational programs, like scouts? 1

YES
2 NO

*OK Allowed**Refusal Allowed***HEQ330**

[Outside of school hours, has {CHILD} ever participated in:]

Music lessons, for example, piano, instrumental music or singing lessons? 1 YES

2 NO

*OK Allowed**Refusal Allowed***HEQ340**

[Outside of school hours, has {CHILD} ever participated in:]

1 YES 2 NO *OK*
Allowed Refusal
Allowed

HEQ350

[Outside of school hours, has {CHiID} ever participated in:]

Art classes or lessons, for example, painting, drawing, sculpturing? 1

YES

2 NO

OK Allowed

Refusal Allowed

HEQ370

[Outside of school hours, has{CHiID} ever participated in:]

Organized performing arts programs, such as children's choirs, dance programs, or theater performances? 1

YES

2 NO

OK Allowed

Refusal Allowed

HEQ380

[Outside of school hours, has {CHiID} ever participated in:]

1 YES 2 NO OK

Allowed Refusal

Allowed

HEQ390

[Outside of school hours, has {CHiID} ever participated in:]

Non-English language instruction?

1 YES

2 NO

OK Allowed

Refusal Allowed

HEQ395BX

IF (NumberOfChildren=1) OR

IF (NumberOfChildren >1 and ChildNum=1), CONTINUE WITH HEQ400.

IF (NumberOfChildren >1 and ChildNum=2), GO TO HEQ510.

HEQ400

Now, I have some questions about your neighborhood. How safe is it for children to play outside during the day in your neighborhood?

Would you say it's ...

1 Not at all safe,

2 Somewhat safe, or

3 Very safe?

OK Allowed

Refusal Allowed

HEQ410

How much of a problem are the following in the block or area around your house or apartment? What about ...

- 1 Big problem,
- 2 Somewhat of a problem, or
- 3 No problem?

OK Allowed

Refusal Allowed

HEQ420

[How much of a problem are the following in the block or area around your house or apartment? What about ...]

Selling or using drugs or excessive drinking in public?

- 1 Big problem,
- 2 Somewhat of a problem, or
- 3 No problem?

OK Allowed

Refusal Allowed

HEQ430

[How much of a problem are the following in the block or area around your house or apartment? What about ...]

- 1 Big problem,
- 2 Somewhat of a problem, or
- 3 No problem?

OK Allowed

Refusal Allowed

HEQ440

[How much of a problem are the following in the block or area around your house or apartment? What about ...]

- 1 Big problem,
- 2 Somewhat of a problem, or
- 3 No problem?

OK Allowed

Refusal Allowed

HEQ450

[How much of a problem are the following in the block or area around your house or apartment? What about ...]

- 1 Big problem,
- 2 Somewhat of a problem, or
- 3 No problem?

OK Allowed

Refusal Allowed

HEQ500

I'm going to read some statements about things that may occur in your family. In a typical week, please tell me the number of days ...

Range:0 to 7 OK

Allowed Refusal

Allowed

HEQ510

[I'm going to read some statements about things that may occur in your family. In a typical week, please tell me the number of days ...]

Range:0 to 7 OK

Allowed Refusal

Allowed

HEQ515BX

IF (NumberOfChildren=1) OR

IF (NumberOfChildren >1 and ChildNum=1), CONTINUE WITH HEQ520.

IF (NumberOfChildren >1 and ChildNum=2), GO TO HEQ550.

HEQ520

[I'm going to read some statements about things that may occur in your family. In a typical week, please tell me the number of days ...]

Range:0 to 7 OK

Allowed Refusal

Allowed

HEQ530

[I'm going to read some statements about things that may occur in your family. In a typical week, please tell me the number of days ...]

Range: 0 to 7

OK Allowed

Refusal Allowed

HEQ550

On weeknights during the school year, does {CHILD} usually go to bed at about the same time each night, or does (his/her) bedtime vary a lot from night to night?

1 HAS USUAL BEDTIME 2
BEDTIME VARIES

OK Allowed (HEQ570)

Refusal Allowed (HEQ570)

HEQ560 RANGE

CHECK:

LOWER RANGE: 1:00.

UPPER RANGE: 12:59.

About what time does {CHILD} usually go to bed?

Range: to

OK Allowed (HEQ570)

Refusal Allowed (HEQ570)

HEQ565

[About what time does {CHILD} usually go to bed?]

SELECT A.M. OR P.M. 1

A.M.

2 P.M.

OK Allowed

Refusal Allowed

HEQ570

RANGE CHECK:

LOWER RANGE: 1 :00.

UPPER RANGE: 12:59.

What is the latest time that {CHILD} goes to bed on weekdays?

Range: 1 to 12

OK Allowed (HEQ580)

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)

(HEQ560)
(HEQ570)

HEQ575

[What is the latest time that {CHiID} goes to bed on weekdays?]

SELECT A.M. OR P.M.

1 A.M.

2 P.M.

*DKAllowed**Refusal Allowed*

HEQ578BX

IF (NumberOfChidren=1) OR

IF (NumberOfChildren >1 and ChiidNum=1), CONTINUE WITH HEQ580.

IF (NumberOfChildren >1 and ChildNum=2), GO TO HEQ700BX.

HEQ580

How often does someone in your family talk with {CHiID} about (his/her) ethnic or racial heritage?

Would you say ... 1

Never,

2 Almost never,

3 Several times a year,

4 Several times a month, or

5 Several times a week or more?

*DKAllowed**Refusal Allowed*

HEQ590

How often does someone in your family talk with {CHiID} about your family's religious beliefs or traditions?

Would you say ... 1

Never,

2 Almost never,

3 Several times a year,

4 Several times a month, or

5 Several times a week or more?

*DKAllowed**Refusal Allowed*

HEQ600

How often does someone in your family participate in special cultural events or traditions connected with your racial or ethnic background?

Would you say ...

1 Never,

2 Almost never,

3 Several times a year,

4 Several times a month, or

5 Several times a week or more?

*DKAllowed**Refusal Allowed*

HEQ700BX

GO TO SECTION SSQ (SOCIAL SKILLS, PROBLEM BEHAVIORS, AND APPROACHES TO LEARNING)

APPENDIX C

Parent Interview Questionnaire-Subset

Spring of First Grade

- IF (NumberOfChildren = 2 AND ChildNum = 2), GO TO PIQ.005.
- OTHERWISE, GO TO BOX 2.

~S 1
 NO 2
 REFUSED 7
 DON'T KNOW 9

- IF (NumberOfChildren = 2 AND ChildNum = 2), AND PIQ.005=1, DK, OR RF, GO TO BOX 10.
- OTHERWISE, CONTINUE WITH PIQ.010.

During this school year, have you or another adult in your household taken it upon yourself to contact {CHILD}'s teacher or school for any reason having to do with {CHILD}?

YES 1 (PIQ.015)
 NO 2 (BOX 4)
 REFUSED 7 (BOX 4)
 DON'T KNOW 9 (BOX 4)

TO REPORT AN ABSENCE OR TARDINESS..... 1 TO
 DISCUSS PROBLEMS THE CHILD IS HAVING AT SCHOOL... 2 TO
 REQUEST SPECIAL PLACEMENT OR SERVICES..... 3 TO
 REQUEST EVALUATION BY A SPECIALIST..... 4 TO
 REQUEST A SPECIFIC TEACHER..... 5
 OTHER (SPECIFY) _____ 91
 REFUSED..... 77
 DON'T KNOW 99

- IF (NumberOfChildren = 1) OR IF (NumberOfChildren = 2 AND ChildNum = 1), CONTINUE WITH PIQ.020.
- IF (NumberOfChildren = 2 AND ChildNum = 2), GO TO PIQ.060.

- a 1. Attended an open house or back-to-school night?
 a2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? b1. Attended a meeting of a PTA, PTO, or Parent-Teacher Organization?
 b2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? c1. Gone to a regularly-scheduled parent-teacher conference with {CHILD}'s teacher or meeting with {CHILD}'s teacher?
 c2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? d1. Attended a school or class event, such as a play, sports event, or science fair? d2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? e1. Volunteered at the school or served on a committee?
 e2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them?
 f1. Participated in fundraising for {CHILD}'s school?
 f2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them?

CAPI INSTRUCTION:

1. DISPLAY A 7 X 3 MATRIX IN THE RESPONSE AREA. DISPLAY RESPONSE CODES AT a1, b1, c1, d1, e1, f1, IN THE 'ATTENDED' COLUMN. DISPLAY RESPONSE CODES AT a2, b2, c2, d2, e2, f2 IN THE 'WHO DID THIS COLUMN'

	ATTENDED?	WHO DID THIS?
OPEN HOUSE		
PTA		
PARENT-TEACHER CONFERENCE		
SCHOOL OR CLASS EVENT		
VOLUNTEERING		
FUNDRAISING		

2. WHEN ON b1. c1, d1, e1, f1, DISPLAY THE MAJOR STEM: "SINCE HOUSEHOLD " IN SQUARE BRACKETS.

OTHERWISE, GO TO

A1 = 1
 B1 = 1
 C1 = 1
 D1 = 1
 E1 = 1
 F1 = 1

B1
 C1
 D1
 E1
 F1
PIQ.030

FOR A1, B1, C1, D1, E1, F1, 1=YES, 2=NO, 7=REFUSED,9=DON'T KNOW
 FOR A2, B2, C2, D2, E2, F2, 1=MOTHER, 2=FATHER, 3=BOTH, 4=NEITHER, 7=REFUSED,
 9=DON'T KNOW

For each of the following statements, please tell me how well {CHILD}'s school has done with each activity during this school year.

[PROBE: Would you say {CHILD}'s school does this very well just OK, or doesn't do this at all?]

CAPINSTRUCTION: WHEN ON B-D, DISPLAY "PROBE: at all?" IN SQUARE BRACKETS.

	<u>DOES THIS VERY WELL</u>	<u>JUST OK</u>	<u>DOESN'T DO THIS AT ALL</u>	<u>RF</u>	<u>DK</u>
The school lets you know between report cards how {CHILD} is doing in school.					
Would you say {CHILD}'s school does this very well, just OK, or doesn't do this at all?		2	3	7	9
The school helps you understand what children at {CHILD}'s age are like.		2	3	7	9
The school makes you aware of chances to volunteer at the school.		2	3	7	9
The school provides workshops, materials, or advice about how to help {CHILD} learn at home.		2	3	7	9

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?

CAPINSTRUCTIONS: DISPLAY {CHILD}'S IF ONLY ONE SAMPLED CHILD, OTHERWISE, DISPLAY {CHILD}'S {OR {TWIN}'S}.

CAPINSTRUCTIONS: HARD RANGE CHECK: 0-40 PARENTS.

1_1_1
NUMBER OF PARENTS OR
REFUSED77
DON'T KNOW..... 99

This year, have the following reasons made it harder for you to participate in activities at {CHILD}'s school? How about ...

CAPINSTRUCTIONS: WHEN ON B-H, PUT THE MAJOR STEM: "This year, have the following reasons made it harder for you to participate in activities at {CHILD}'s school?" How about ... " IN SQUARE BRACKETS.

	<u>YES</u>	<u>NO</u>	<u>REF</u>	<u>DK</u>
Inconvenient meeting times? Has that made it harder for you to participate in activities at {CHILD}'s school?		2	7	9
No child care keeps your family from going to school meetings or events? Has that made it harder for you to participate in activities at {CHILD}'s school?		2	7	9
Family members can't get time off from work? Has that made it harder for you to participate in activities at {CHILD}'s school?		2	7	9
Problems with safety going to the school? Has that made it harder for you to participate in activities at {CHILD}'s school?		2	7	9
The school does not make your family feel welcome? Has that made it harder for you to participate in activities at {CHILD}'s school?		2	7	9
Problems with transportation to the school? Has that made it harder for you to participate in activities at {CHILD}'s school?		2	7	9
Problems because you or members of your family speak a language other than English and meetings are conducted only in English? Has that made it harder for you to participate in activities at {CHILD}'s school?		2	7	9
You don't hear about things going on at school that you might want to be involved in? Has that made it harder for you to participate in activities at {CHILD}'s school?		2	7	9

YES	1
NO	2
REFUSED	7
DON'T KNOW.....	9

HELP AVAILABLE

How far in school do you expect {CHILD} to go? Would you say you expect {him/her} ...

CAPINSTRUCTION: DISPLAY "expect" IN BRIGHT WHITE.

HELP SCREEN

How far the respondent expects the child to go in school:
 This question is about how far in school the respondent realistically expects the child to go in school, not how far the respondent hopes the child will go. If it is difficult to answer the question because the answer depends on many factors, ask for the best guess.

To receive less than a high school diploma,.	1
To graduate from high school,	2
To attend two or more years of college,	3
To finish a four- or five-year college degree, 4 To	
earn a master's degree or equivalent, or. 5 To	
finish a Ph.D., MD, or other advanced	
degree?	6
REFUSED	7
DON'T KNOW.....	9

NUMBER OF TIMES or	1_1_1	
	REFUSED.....	77
	DON'T KNOW.....	99

Compared to other children in {CHILD}'s class, how well do you think {he/she} is doing in school this spring in reading/language arts?

Much worse,	1
A little worse,	2
About the same,.....	3 A
little better, or.....	4
Much better?.....	5
REFUSED	7
DON'T KNOW.....	9

Compared to other children in {CHILD}'s class, how well do you think {he/she} is doing in school this spring in **math**?

Much worse,1
 A little worse, 2
 About the same,..... 3
 little better, or..... 4
 Much better?..... 5
 REFUSED 7
 DON'T KNOW..... 9

Never1 (BOX 10)
 Less that once a week2 (PIQ.120)
 1 to 2 times a week..... 3 (PIQ.120)
 4 times a week, or..... 4 (PIQ.120)
 5 or more times a week?5 (PIQ.120)
 REFUSED7 (BOX 10)
 DON'T KNOW..... 9 (BOX 10)

CAPI INSTRUCTION: IF PIQ.110=2, PIQ.120 CANNOT EQUAL TO 3, 4, OR 5. IF PIQ.110=3, PIQ.120 CANNOT EQUAL TO 4 OR 5. IF PIQ.110=4, PIQ.120 CANNOT EQUAL TO 5. OTHERWISE, DISPLAY ERROR MESSAGE: "Child does homework at home {DISPLAY RESPONSE AT PIQ.110} but parent helped {him/her} with {his/her} homework {DISPLAY RESPONSE AT PIQ.120}."

Never 1
 Less that once a week2
 1 to 2 times a week..... 3
 to 4 times a week, or..... 4
 5 or more times a week?5
 REFUSED7
 DON'T KNOW..... 9

BOX 1

IF CHILDNUM=1 OR IF CHILDNUM=2, CONTINUE WITH HEQ.010.

HELP AVAILABLE

Now I'd like to talk with you about {CHILD}'s activities with family members. In a typical week, how often do you or any other family member do the following things with {CHILD}?

{PROBE: Would you say not at all, once or twice, 3-6 times, or every day?}

HELP TEXT:

FAMILY MEMBER: A family member refers to any person who lives in the child's household and any relative of the child living outside the child's household.

Tell stories: Story-telling is different from reading. Stories include fairy tales, family stories, or any type of story that is not read.

Sing Songs with child: Include times that a family member sings to or with the child. This may include teaching the child songs, singing along with tapes or to the radio, or singing while playing musical instruments.

Help child with arts and crafts: Arts and crafts may include making seasonal decorations, making cutouts or drawing pictures, painting or finger-painting, whittling wood, etc. It also includes helping the child with arts and crafts projects assigned by school, but done at home.

Involve child in household chores: Chores not mentioned can also satisfy this item.

Play games or do puzzles: Includes indoor "quiet" games like board games or puzzles, or more active indoor games like Ping-Pong.

Talk about nature or do science projects: Talking about nature could include answering any questions the child may have about trees, weather, etc. or watching a television program or video about nature together and then discussing it. Science projects include any type of project designed to show the child how the world works, such as understanding how plants grow, studying rocks, using flashlights to create shadows, or mixing paints to create different colors.

Build something or play with construction toys: This would include activities that the child does with family members, such as making a tent, constructing a toy car, building a doghouse, and using Lincoln logs, Brio, or other construction toys or tools.

Play a sport or exercise together: This includes calisthenics, riding bicycles, rollerblading, individual or team sports, games like hide-and-go-seek, or other outdoor activities where activity or exercise is involved. Do not include times when the child does the sport or activity by himself.

Read books: Include only times family members have read books to the child. Do not include times when the child reads or looks at books by him or herself.

1. WHEN ON B-J. DISPLAY "PROBEeveryday?" OTHERWISE, USE A NULL DISPLAY.

2. DISPLAY "NOW {CHILD}?" IN SQUARE BRACKETS WHEN ON B-J.

3. IF HEQ.010j = 2,3, OR 4, CONTINUE WITH HEQ.015. OTHERWISE, GO TO BOX 3.

	<u>NOT AT ALL</u>	<u>ONCE OR TWICE</u>	<u>3-6 TIMES</u>	<u>EVERY DAY</u>	<u>REF</u>
a. Tell stories to {CHILD}? Would you say not at all, once or twice, 3-6 times, or every day?		2	3	4	7 9
b. Sing songs with {CHILD}?		2	3	4	7 9
c. Help {CHILD} to do arts and crafts?		2	3	4	7 9
d. Involve {CHILD} in household chores, like cooking, cleaning, setting the table, or caring for pets?		2	3	4	7 9
e. Play games or do puzzles with {CHILD}? ...		2	3	4	7 9
f. Talk about nature or do science projects with {CHILD}?		2	3	4	7 9

	<u>NOT AT ALL</u>	<u>ONCE OR TWICE</u>	<u>3-6 TIMES</u>	<u>EVERY DAY</u>	<u>REF</u>	<u>...</u>
g. Build something or play with construction toys with {CHILD}?		2	3	4	7	9
h. Play a sport or exercise together?		2	3	4	7	9
i. Practice reading, writing or working with numbers?		2	3	4	7	9
j. Read books to {CHILD}?		2	3	4	7	9

ENTER MINUTES or **1_1_1**
 REFUSED 77
 DON'T KNOW 99

IF (NumberOfChildren = 1) OR IF (NumberOfChildren > 1 AND ChildNum = 1),
CONTINUE WITH HEQ.020. OTHERWISE, GO TO HEQ.030.

HELP AVAILABLE

About how many children's books does {CHILD} have in your home now, including library books? Please only include books that are for children.

HELP TEXT:

NUMBER OF CHILDREN'S BOOKS: This item asks about the books that belong to the child, not all books in the home (e.g., not parents' books). Books shared by siblings may be counted. For example, if the children share 50 books, count all 50.

ENTER # OF BOOKS OR **1_1_1_1_1**
 REFUSED 7777
 DON'T KNOW 9999

yES..... 1
 NO..... 2
 REFUSED 7
 DON'T KNOW..... 9

~S..... 1
 NO..... 2
 REFUSED 7
 DO~TKNOW 9

In the past month, that is, since {MONTH} {DAY}, has anyone in your family visited a library with {CHILD}?

CAPINSTRUCTION: DISPLAY PREVIOUS MONTH FOR {MONTH} AND DATE OF INTERVIEW FOR {DAY}.

yES 1 (HEQ.030) 2
 NO (HEQ.028) 7
 REFUSED (HEQ.028) 9
 DON'T KNOW (HEQ.028)

~S..... 1
 NO..... 2
 REFUSED7
 DON'T KNOW..... 9

Never... 1
 One or twice a week2
 Three to six times a week, or..... 3
 Every day?...4
 REFUSED.7
 DON'T KNOW..... 9

~S
 NO
 REFUSED
 DON'T KNOW
 Never 1 (HEQ.060) 2
 One or twice a week (HEQ.050) 3
 Three to six times a week, or (HEQ.050) 4
 Every day? (HEQ.050) 7
 REFUSED (HEQ.060) 9
 DON'T KNOW (HEQ.060)

1 (HEQ.045) 2 (HEQ.060) 7 (HEQ.060) 9 (HEQ.060)

In an average week, how often does {CHILD} use the computer for educational purposes, such as to improve reading or math skills? Would you say ...

- Never.....1
- One or twice a week..... 2 Three to six times a week, or..... 3
- Every day?.....4
- REFUSED 7
- DON'T KNOW..... 9

a.	Dance lessons?	2	7	9
a.	Organized athletic activities, like basketball, soccer, baseball, or gymnastics?	2	7	9
b.	Organized clubs or recreational programs, like scouts?	2	7	9
c.	Music lessons, for example, piano, instrumental music or singing lessons?	2	7	9
d.	Art classes or lessons, for example, painting, drawing, sculpturing?			
e.	Organized performing arts programs, such as children's choirs, dance programs, or theater performances?			
<u>YES</u>	<u>NO</u>	<u>REF</u>		
1	2	7	9	
	2	7	9	

Is {CHILD} tutored on a regular basis, by someone other than you or a family member, in a specific subject, such as reading, math, science, or a foreign language?

- yES 1 (HEQ.065) 2
- NO (HEQ.070a) 7
- REFUSED (HEQ.070a) 9
- DON'T KNOW (HEQ.070a)

- READING 1 (HEQ.070a)
- MATH2 (HEQ.070a)
- SCIENCE3 (HEQ.070a)
- FOREIGN LANGUAGE4 (HEQ.070a)
- OTHER (SPECIFY) 91 (HEQ.0650S)
- REFUSED7 (HEQ.070a)
- DON'T KNOW..... 9 (HEQ.070a)

[What is {CHILD} tutored in?]

SPECIFY SUBJECT.

I'm going to read some statements about things that may occur in your family. In a typical week, please tell me the number of days ...

- a. At least some of the family eats breakfast together.
- b. {CHILD} has breakfast at a regular time.
- c. Your family eats the evening meal together.
- d. The evening meal is served at a regular time.

DISPLAY "HELP AVAILABLE" WHEN ON BAND D. DISPLAY THE FOIIOWING HELP TEXT:
 "Regular means generally around the same time."

- 2. WHEN ON B-D. DISPLAY "I'm going ... days" IN SQUARE BRACKETS.
- 3. DISPLAY "WEEK" IN BRIGHT WHITE.
- 4. HARD RANGE CHECK: 0-7 DAYS.

| |

NUMBER OF DAYS OR

REFUSED	77
DON'T KNOW	99

On weeknights during the school year, does {CHILD} usually go to bed at about the same time each night, or does {his/her} bedtime vary a lot from night to night?

HAS USUAL BEDTIME	7 (BOX 4)
BEDTIME VARIES	9 (BOX 4)
REFUSED	
DON'T KNOW	

1 (HEQ.085) 2 (BOX 4)

1 1 1-1 1 1
 HOUR MINUTE
 or
 REFUSED 77 (HEQ.090)
 DON'T KNOW 99 (HEQ.090)

AM.....	1
P.M.....	2
REFUSED	7
DO NT KNOW	9

IF (NumberOfChildren = 1) OR IF (NumberOfChildren > 1 AND ChildNum = 1),
CONTINUE WITH HEQ.090. OTHERWISE, GO TO BOX 5.

Now, I have some questions about your neighborhood. How safe is it for children to play outside during the day in your neighborhood?

not at all safe, 1
somewhat safe, or2
very safe?.3
REFUSED7
DON'T KNOW..... 9

BOX 5

GO TO SSQ (SOCIAL SKILLS, PROBLEM BEHAVIORS, AND APPROACHES TOWARD LEARNING).

APPENDIX D

Parent Interview Questionnaire-Subset

Spring of Third Grade

- IF (NumberOfChildren = 2 AND ChildNum = 2), GO TO PIO.005.
- OTHERWISE, GO TO PIO.006

Y~ 1
 NO..... 2
 REFUSED 7
 DON'T KNOW..... 9

{Now I'd like to ask you about {CHILD}'s school?} Did you {or {CHILD}'s parents} choose where to live so that {CHILD} could attend {his/her} current school?

CAPIIINSTRUCTIONS: FOR THE FIRST DISPLAY, IF (NUMBEROFCHILDREN = 1) OR (NUMBEROFCHILDREN = 2 AND CHILDNUM = 1) DISPLAY "Now I'd like to ask ..." OTHERWISE, USE A NULL DISPLAY.

FOR THE SECOND DISPLAY, IF "FLAGS.SAMERESP" = 1 (SAME RESPONDENT AS PREVIOUS ROUND) AND THE RESPONDENT IS NOT A MOTHER/FATHER OR MALE/FEMALE GUARDIAN (THIS INCLUDES BIRTH, ADOPTIVE, STEP, AND FOSTER PARENTS OR GUARDIANS) ACCORDING TO THE PRELOAD THEN DISPLAY "or {CHILD}'s parents". OTHERWISE, USE A NULL DISPLAY.

yES1
 NO2
 REFUSED7
 DON'T KNOW..... 9

CAP I INSTRUCTIONS: IF "FLAGS.SAMERESP" = 1 (SAME RESPONDENT AS PREVIOUS ROUND) AND THE RESPONDENT IS NOT A MOTHER/FATHER OR MALE/FEMALE GUARDIAN (THIS INCLUDES BIRTH, ADOPTIVE, STEP, AND FOSTER PARENTS OR GUARDIANS) ACCORDING TO THE PRELOAD THEN DISPLAY {or {CHILD}'s parents}

ASSIGNED1
 CHOSEN2
 ASSIGNED SCHOOL IS SCHOOL OF
 CHOICE.3
 REFUSED7
 DON'T KNOW..... 9

During this school year, have you or another adult in your household taken it upon yourself to contact {CHILD}'s teacher or school for any reason having to do with {CHILD}?

YES 1 (PIO.015)
 NO 2 (BOX 3)
 REFUSED 7 (BOX 3)
 DON'T KNOW..... 9 (BOX 3)

CODE ALL THAT APPLY.

PROBE: Anything else?

TO REPORT AN ABSENCE OR TARDINESS.....	1 TO
DISCUSS PROBLEMS THE CHILD IS HAVING AT SCHOOL...	2 TO
REQUEST SPECIAL PLACEMENT OR SERVICES.....	3 TO
REQUEST EVALUATION BY A SPECIALIST.....	4 TO
REQUEST A SPECIFIC TEACHER.....	5 TO
CHECK ON {CHILD}'s PROGRESS.....	6
TO ASK ABOUT HOMEWORK PROBLEMS	7
OTHER.....	91
REFUSED....	77
DON'T KNOW.....	99

- If PIQ.015 = 91 then GO TO PIQ.018
- ELSE GO TO BOX 3

- IF (NumberOfChildren = 1) OR IF (NumberOfChildren = 2 AND ChildNum = 1), CONTINUE WITH PIQ.020.
- IF (NumberOfChildren = 2 AND ChildNum = 2) AND PIQ.005 = 1, DK, OR RF, GO TO PIQ.070. ELSE, IF (NumberOfChildren = 2 AND ChildNum = 2) AND PIQ.005 = 2, GO TO PIQ.060

- a1. Attended an open house or back-to-school night?
- a2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? b1. Attended a meeting of a PTA, PTO, or Parent-Teacher Organization?
- b2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? c1. Gone to a regularly scheduled parent-teacher conference with {CHILD}'s teacher or meeting with {CHILD}'s teacher?
- c2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? d1. Attended a school or class event, such as a play, sports event, or science fair? d2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them? e1. Volunteered at the school or served on a committee?
- e2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them?
- f1. Participated in fundraising for {CHILD}'s school?
- f2. Who did this, was it {CHILD}'s mother, father, both of them, or neither of them?

1. DISPLAY A 7 X 3 MATRIX IN THE RESPONSE AREA. DISPLAY RESPONSE CODES AT a1, b1, c1, d1, e1, f1, IN THE 'ATTENDED" COLUMN. DISPLAY RESPONSE CODES AT a2, b2, c2, d2, e2, f2 IN THE 'WHO DID THIS COLUMN'

	ATTENDED?	WHO DID THIS?
OPEN HOUSE		
PTA		
PAREN~TEACHERCONFERENCE		
SCHOOL OR CLASS EVENT		
VOLUNTEERING		
FUNDRAISING		

2. WHEN ON b1. c1, d1, e1, f1, DISPLAY THE MAJOR STEM: "Since household " IN SQUARE BRACKETS.

OTHERWISE, GO TO

- A1 = 1
- B1 = 1
- C1 = 1
- D1 = 1
- E1 = 1
- F1 = 1

- B1
- C1
- D1
- E1
- F1
- PIQ.030

FOR A1, B1, C1, D1, E1, F1, 1=YES, 2=NO, 7=REFUSED,9=DON'T KNOW
 FOR A2, B2, C2, D2, E2, F2, 1=MOTHER, 2=FATHER, 3=BOTH, 4=NEITHER, 7=REFUSED,
 9=DON'T KNOW

For each of the following statements, please tell me how well {CHILD}'s school has done with each activity during this school year.

PROBE: Would you say {CHILD}'s school does this very well, just O.K., or doesn't do this at all?

CAPINSTRUCTION: WHEN ON B-E, DISPLAY QUESTION STEM "For. .. year" AND "PROBE: at all?" IN SQUARE BRACKETS.

	<u>DOES THIS VERY WELL</u>	<u>JUST O.K.</u>	<u>DOESN'T DO THIS AT ALL</u>	<u>RF</u>	<u>DK</u>
The school lets you know between report cards how {CHILD} is doing in school. Would you say {CHILD}'s school does this very well, just O.K., or doesn't do this at all?		2	3	7	9
The school helps you understand what children at {CHILD}'s age are like.		2	3	7	9
The school makes you aware of chances to volunteer at the school.		2	3	7	9
The school provides workshops, materials, or advice about how to help {CHILD} learn at home.		2	3	7	9
The school sends home information on {CHILD}' s standardized test scores		2	3	7	9

In our last interview, it was reported that {ENGLISH/NON-ENGLISH LANGUAGE/a language other than English} is spoken in your home. When (CHILD)'s teacher sends home notes or newsletters, are these in {ENGLISH/NON-ENGLISH LANGUAGE/a language that you speak}?

CAPINSTRUCTION: IF NO OTHER LANGUAGE REGULARLY SPOKEN AT HOME BESIDES ENGLISH) OR IF (ENGLISH SPOKEN AS PRIMARY LANGUAGE) ACCORDING TO THE PRELOAD FILE DISPLAY 'ENGLISH.' OTHERWISE, DISPLAY THE LANGUAGE SPECIFIED IN THE PRELOAD IF A LANGUAGE CATEGORY WAS CHOSEN. OTHERWISE, IF THE PRELOAD HAS AN OTHER SPECIFY CATEGORY TEXT STRING FOR LANGUAGE, OR IF THE RESPONDENT DID NOT CHOOSE A PRIMARY LANGUAGE, OR IF ANSWER WAS DK OR RF, DISPLAY "a language other than English" IN THE DISPLAY IN THE FIRST SENTENCE AND "a language that you speak" IN THE DISPLAY IN THE SECOND SENTENCE.

- yES 1
- NO 2
- REFUSED 7
- DON'T KNOW..... 9

This year, have the following reasons made it harder for you to participate in activities at {CHILD}'s school? How about. ..

CAPI INSTRUCTIONS: WHEN ON B-H, PUT THE MAJOR STEM: "This year, have the following reasons made it harder for you to participate in activities at {CHILD}'s school?" IN SQUARE BRACKETS. DISPLAY "How about ... " BELOW THE STEM IN BRACKETS ON A SEPARATE LINE.

- | | YES | NO | REF | DK |
|---|-----|----|-----|----|
| a. Inconvenient meeting times? Has that made it harder for you to participate in activities at {CHILD}'s school? | | | | |
| b. No child care keeps your family from going to school meetings or events? Has that made it harder for you to participate in activities at {CHILD}'s school? | | | | |
| c. Family members can't get time off from work? Has that made it harder for you to participate in activities at {CHILD}'s school? | | | | |
| d. Problems with safety going to the school? Has that made it harder for you to participate in activities at {CHILD}'s school? | | | | |
| e. The school does not make your family feel welcome? Has that made it harder for you to participate in activities at {CHILD}'s school? | | | | |
| f. Problems with transportation to the school? Has that made it harder for you to participate in activities at {CHILD}'s school? | | | | |

BOX3a

IF ACCORDING TO THE PRELOAD A LANGUAGE OTHER THAN ENGLISH IS SPOKEN IN THE HOME, THEN GO TO PIQ.050G. ELSE, GO TO PIQ.050H.

- | | |
|---|--|
| g. Problems because you or members of your family speak a language other than English and meetings are conducted only in English? Has that made it harder for you to participate in activities at {CHILD}'s school? | |
| h. You don't hear about things going on at school that you might want to be involved in? Has that made it harder for you to participate in activities at {CHILD}'s school? | |

Y~	1
NO	2
REFUSED	7
DON'T KNOW.....	9

About how many parents of children in {CHILD}'s class do you talk with regularly, either in person or on the phone?

CAPI INSTRUCTIONS: HARD RANGE CHECK: 0-40 PARENTS.

	1_1_1	
NUMBER OF PARENTS OR		
REFUSED		77
DON'T KNOW.....		99

HELP AVAILABLE

How far in school do you expect {CHILD} to go? Would you say you expect {him/her} ...

CAPINSTRUCTION: DISPLAY "expect" IN UNDERLINED TEXT.

HELP SCREEN

How far the respondent expects the child to go in school:

This question is about how far in school the respondent realistically expects the child to go, not how far the respondent hopes the child will go. If it is difficult to answer the question because the answer depends on many factors, ask for the best guess.

- To receive less than a high school diploma, 1
- To graduate from high school, 2
- To attend two or more years of college, 3
- To finish a four- or five-year college degree, 4
- To earn a master's degree or equivalent, or. 5
- To finish a Ph.D., MD or other advanced degree? 6
- REFUSED 7
- DON'T KNOW..... 9

Compared to other children in {CHILD}'s class, how well do you think {he/she} is doing in school this spring in reading/language arts?

- Much worse, 1
- A little worse, 2
- About the same,..... 3
- A little better, or..... 4
- Much better? 5
- REFUSED..... 7
- DON'T KNOW..... 9

Compared to other children in {CHILD}'s class, how well do you think {he/she} is doing in school this spring in math?

- Much worse, 1
- A little worse, 2
- About the same..... 3
- A little better, or..... 4
- Much better? 5
- REFUSED 7
- DON'T KNOW..... 9

- IF (NumberOfChildren = 2 AND ChildNum = 2), AND PIQ.005=1, DK. OR RF, GO TO BOX 4.
- ELSE, CONTINUE WITH PIQ.120.

Now I'd like to ask you some questions about what the school is like. For each of the following, please tell me how much you agree or disagree with the statements about {CHILD}'s school.

PROBE: Would you say you strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree?

CAPI INSTRUCTION: WHEN ON B-H, DISPLAY MAIN QUESTION TEXT "Now ... school" IN SQUARE BRACKETS. DISPLAY "PROBE: agree?" IN SQUARE BRACKETS FOR B-H UNDER EACH ITEM.

	<u>SO</u>	<u>Q</u>	<u>NAD</u>	<u>~</u>	<u>SA</u>	<u>RF</u>	<u>OK</u>
a. Parents are actively involved in this school's programs. Would you say you strongly disagree, disagree, neither agree nor disagree, agree or strongly agree?		2	3	4	5	7	9
b. Teacher absenteeism is a problem at this school		2	3	4	5	7	9
c. Child absenteeism is a problem at this school.		2	3	4	5	7	9
d. The community seNed by this school is supportive of its goals and activities		2	3	4	5	7	9
e. There is a consensus among administrators and teachers on goals and expectations		2	3	4	5	7	9
f. Order and discipline are maintained satisfactorily in the building(s)		2	3	4	5	7	9
g. Overcrowding is a problem at this school		2	3	4	5	7	9
h. Parents of children in this school are welcome to obseNe classes any time they are in session		2	3	4	5	7	9

BOX 4

GOTO FSQ.

HELP AVAILABLE

Now I'd like to talk with you about {CHILD}'s activities with family members. In a typical week, how often do you or any other family members do the following things with {CHILD}?

HELP TEXT:

FAMILY MEMBER: A family member refers to any person who lives in the child's household and any relative of the child living outside the child's household.

Tell stories: Story-telling is different from reading. Stories include fairy tales, family stories, or any type of story that is not read.

Sing Songs with child: Include times that a family member sings to or with the child. This may include teaching the child songs, singing along with tapes or to the radio, or singing while playing musical instruments.

Help child with arts and crafts: Arts and crafts may include making seasonal decorations, making cutouts or drawing pictures, painting or finger-painting, whittling wood, etc. It also includes helping the child with arts and crafts projects assigned by school, but done at home.

Involve child in household chores: Chores not mentioned can also satisfy this item.

Play games or do puzzles: Includes indoor "quiet" games like board games or puzzles, or more active indoor games like Ping-Pong.

Talk about nature or do science projects: Talking about nature could include answering any questions the child may have about trees, weather, etc. or watching a television program or video about nature together and then discussing it. Science projects include any type of project designed to show the child how the world works, such as understanding how plants grow, studying rocks, using flashlights to create shadows, or mixing paints to create different colors.

Build something or play with construction toys: This would include activities that the child does with family members, such as making a tent, constructing a toy car, building a doghouse, and using Lincoln logs, Brio, or other construction toys or tools.

Play a sport or exercise together: This includes calisthenics, riding bicycles, rollerblading, individual or team sports, games like hide-and-go-seek, or other outdoor activities where activity or exercise is involved. Do not include times when the child does the sport or activity by him or herself.

Practice reading, writing, or working with numbers: This includes time family members spend on homework, reading a calendar, practicing in an exercise or workbook.

Read books: Include only times family members have read books to the child. Do not include times when the child reads or looks at books by him or herself.

1. WHEN ON B-J. DISPLAY "PROBE. every day?" IN SQUARE BRACKETS.
2. DISPLAY "Now, {CHILD}?" IN SQUARE BRACKETS WHEN ON B-J.
3. DISPLAY "WEEK" in UNDERLINED TEXT.

	<u>NOT</u> <u>AT ALL</u>	<u>ONCE</u> <u>OR TWICE</u>	<u>3-6</u> <u>TIMES</u>	<u>EVERY</u> <u>DAY</u>	<u>REF</u>
a. Tell stories to {CHILD}? Would you say not at all, once or twice, 3-6 times, or every day?		2	3	4	7 9
b. Sing songs with {CHILD}?		2	3	4	7 9
c. Help {CHILD} to do arts and crafts?		2	3	4	7 9
d. Involve {CHILD} in household chores, like cooking, cleaning, setting the table, or caring for pets?		2	3	4	7 9
e. Play games or do puzzles with {CHILD}? ...		2	3	4	7 9
f. Talk about nature or do science projects with {CHILD}?		2	3	4	7 9

IF (NumberOfChildren = 1) OR IF (NumberOfChildren > 1 AND ChildNum = 1),
CONTINUE WITH HEQ.021. OTHERWISE, GO TO HEQ.040.

- a.A newspaper received on a regular basis? 1
- b.A magazine received on a regular basis? 1
- c.A dictionary or an encyclopedia? 1
- d.A pocket calculator? 1

HELP AVAILABLE

About how many children's books does {CHILD} have in your home now, including library books? Please only include books that are for children.

HELP TEXT:

NUMBER OF CHILDREN'S BOOKS: This item asks about the books that belong to the child, not all books in the home (e.g., not parents' books). Books shared by siblings may be counted. For example, if the children share 50 books, count all 50.

ENTER # OF BOOKS OR 1_1_1_1_1
 REFUSED7777
 DON'T KNOW9999

yES..... 1
 NO..... 2
 REFUSED 7
 DON'T KNOW..... 9

yES..... 1
 NO..... 2
 REFUSED 7
 DON'T KNOW..... 9

IF (NumberOfChildren = 1) OR IF (NumberOfChildren > 1 AND ChildNum = 1), CONTINUE WITH HEQ.045. OTHERWISE, IF (NumberOfChildren > 1 AND ChildNum = 2) AND (HEQ.045 = 1 IN ChildNum = 1's INTERVIEW), GO TO HEQ.046. ELSE, GO TO HEQ.050.

yES	1 (HEQ.046)	2
NO	(HEQ.050)	7
REFUSED	(HEQ.050)	9
DON'T KNOW	(HEQ.050)	

yES.....	1
NO.....	2
REFUSED	7
DON'T KNOW.....	9

In an average week how often does {CHILD} use the computer for educational purposes and homework such as to improve reading or math skills? Would you say ...

Never.	1
Once or twice a week	2
Three to six times a week, or.....	3 Every
day?.....	4
REFUSED	7
DON'T KNOW.....	9

IF (NumberOfChildren=1) OR (NumberOfChildren>1 AND ChildNum=1), CONTINUE WITH HEQ.060. ELSE, IF (Number of Children>1 and CHILDNUM=2) AND HEQ.060=1 IN ChildNum=1 's INTERVIEW, GO TO HEQ.065. ELSE, IF (NumberOf Children>1 and ChildNum=2) AND HEQ.060=2, 7, OF 9 IN ChildNum=1 's INTERVIEW, GO TO HEQ.090.

Now I'd like to ask some questions about {CHILD}'s television viewing. We are interested in {his/her} television viewing only **in your** home. We want you to include television shows, videotapes, and DVDs, but not games like NINTENDO.

~S	1 (HEQ.065)	2
NO	(HEQ.090)	7
REFUSED	(HEQ.090)	9
DON'T KNOW	(HEQ.090)	

On any given weekday, how many hours of television, videotapes, or DVDs on average does {CHILD} watch at home? How about. ..

- Before 8:00am?
- Between 8:00am and 3:00pm?
- Between 3:00pm and dinner time?
- After dinner time?

	HOURS	MINUTES
Before 8:00 am		
Between 8:00 a.m. and 3:00 p.m.		
Between 3:00 p.m. and dinner time		
After dinner time		

3. WHEN CURSOR IS ON THE HOUR FIELDS, DISPLAY 'INTERVIEWER INSTRUCTION: ENTER NUMBER OF HOURS. IF LESS THAN AN HOUR, ENTER '0.'
4. WHEN CURSOR IS ON THE MINUTE FIELDS, DISPLAY 'INTERVIEWER INSTRUCTION: ENTER NUMBER OF MINUTES.'
5. WHEN CURSOR IS ON THE HOUR FIELDS OF HEQ.065B-D OR, OR ANY OF THE MINUTE FIELDS, DISPLAY 'on any given How about... ' IN SQUARE BRACKETS.
6. DK AND RF ALLOWED AT ALL FIELDS. EMPTY IS ALLOWED FOR MINUTES, BUT NOT FOR HOURS.
7. USE THE FOLLOWING SKIP INSTRUCTIONS FOR DK OR RF AT HOUR FIELDS:

IF DK OR RF AT:	SKIP TO	ELSE
HEQ.065A HOUR FIELD	HEQ.065B	CONTINUE WITH MINUTE
HEQ.065B HOUR FIELD	HEQ.065C	CONTINUE WITH MINUTE
HEQ.065C HOUR FIELD	HEQ.065D	CONTINUE WITH MINUTE
HEQ.065D HOUR FIELD	HEQ.070	CONTINUE WITH MINUTE

8. HARD RANGE: 0 - 6 FOR HOURS; 0 - 59 FOR MINUTES. THE TOTAL OF THE FOUR TIME FRAMES SHOULD NOT EXCEED 24 HOURS. OTHERWISE, DISPLAY ERROR MESSAGE: "The total number of hours exceeds 24! Please correct the entries."

How about on Saturday and Sunday? How many hours does {CHILD} watch television, videotapes, or DVDs at home on ...

- a. Saturdays?
- b. Sundays?

Sundays

Sa" days	HOURS	MINUTES
----------	-------	---------

3. WHEN CURSOR IS ON THE HOUR FIELDS, DISPLAY 'INTERVIEWER INSTRUCTION: ENTER NUMBER OF HOURS. IF LESS THAN AN HOUR, ENTER '0.'
4. WHEN CURSOR IS ON THE MINUTE FIELDS, DISPLAY 'INTERVIEWER INSTRUCTION: ENTER NUMBER OF MINUTES.'
5. WHEN CURSOR IS ON THE HOUR FIELD OF HEQ.070B OR ANY OF THE MINUTE FIELDS, DISPLAY 'How about... at home on ... ' IN SQUARE BRACKETS.
6. DK AND RF ALLOWED AT ALL FIELDS. EMPTY IS ALLOWED FOR MINUTES, BUT NOT FOR HOURS.

IF DK OR RF AT:	SKIP TO	ELSE
HEQ.070A HOUR FIELD	HEQ.070B	CONTINUE WITH MINUTE
HEQ.070B HOUR FIELD	HEQ.075	CONTINUE WITH MINUTE

HARD RANGE: 0 - 24 HOUR FOR FIELDS; 0 - 59 FOR MINUTE FIELDS. IF HOURS = 24, THEN MINUTES CANNOT EXCEED 0. OTHERWISE, DISPLAY ERROR MESSAGE: "The total number of hours exceeds 24! Please correct the entries."

a.What programs {CHILD} can watch? 7
 b.How early or late {he/she} may watch television? 9
 c.How many hours {he/she} may watch television on weekdays? 7
 d.How many hours {he/she} may watch television each week? 9
 YES1 7
 1 9
 1 7
 1 9
NO 2 2 2
REF DK

Now I have some questions about {CHILD's} homework. How often does {CHILD} do homework either at home or somewhere else outside of school? Would you say ...

Never, 1 (HEQ.100) 2
 Less than once a week, (HEQ.091) 3
 1 to 2 times a week, (HEQ.091) 4
 3 to 4 times a week, or (HEQ.091) 5
 5 or more times a week? (HEQ.091) 7
 REFUSED (HEQ.100) 9
 DON'T KNOW (HEQ.100)

YES 1
 NO 2
 REFUSED 7
 DON'T KNOW 9

1 1 1 1
 ENTER
 MINUTES or
 REFUSED 777
 DON'T KNOW 999

Does {CHILD} have someone who can help {him/her} with homework in reading, language arts, or spelling?

Y~ 1 (HEQ.094) 2
 NO (HEQ.096) 7
 REFUSED (HEQ.096) 9
 DON'T KNOW (HEQ.096)

Which of the following people has helped {CHILD} with (his/her) reading, language arts, or spelling homework either at home or somewhere else during this school year?

CAPI INSTRUCTIONS: AFTER FIRST TIME QUESTION APPEARS, DISPLAY "Which ... year?" IN SQUARE BRACKETS. FOR A, DISPLAY "mother" IF THE MOTHER IS A BIRTH OR ADOPTIVE MOTHER, DISPLAY "stepmother" IF THE MOTHER IS A STEPMOTHER, OR DISPLAY "foster mother" IF THE MOTHER IS A FOSTER MOTHER.

FOR B, DISPLAY "father" IF THE FATHER IS A BIRTH OR ADOPTIVE FATHER, DISPLAY "stepfather" IF THE FATHER IS A STEPFATHER, OR DISPLAY "foster father" IF THE FATHER IS A FOSTER FATHER.

FOR D, DISPLAY "brother" IF THE CHILD HAS A BROTHER WHOSE AGE IS GREATER THAN OR EQUAL TO THE SAMPLED CHILD'S AGE - 1. DISPLAY "sister" IF THE CHILD HAS A SISTER WHOSE AGE IS GREATER THAN OR EQUAL TO THE SAMPLED CHILD'S AGE - 1. DISPLAY "brother or sister" IF THE CHILD HAS BOTH A BROTHER AND SISTER WHOSE AGES ARE GREATER THAN OR EQUAL TO THE SAMPLED CHILD'S AGE - 1.

IF THE CURRENT ROSTER SHOWS THAT CHILD'S MOTHER (OF ANY TYPE, BIRTH, ADOPTIVE, ETC.) IS IN THE HOUSEHOLD THEN ASK A. IF THERE ARE TWO MOTHERS, USE HEQ.094A FOR THE MOTHER WITH THE LOWER NUMBER RELATIONSHIP IN THE FOLLOWING SYSTEM: BIRTH MOTHER = 1, ADOPTIVE MOTHER = 2, STEPMOTHER = 3, AND FOSTER MOTHER OR FEMALE GUARDIAN = 4. IF TWO MOTHERS HAVE SAME NUMBER RELATIONSHIP, DISPLAY THAT RELATIONSHIP. ELSE, GO TO BOX 6.

a. {CHILD}'s {mother/stepmother/foster mother}? 2 7 9

BOX 6

IF THE CURRENT ROSTER SHOWS THAT CHILD'S FATHER (OF ANY TYPE, BIRTH, ADOPTIVE, ETC.) IS IN THE HOUSEHOLD THEN ASK B. IF THERE ARE TWO FATHERS, USE HEQ.094B FOR THE FATHER WITH THE LOWER NUMBER RELATIONSHIP IN THE FOLLOWING SYSTEM: BIRTH FATHER = 1, ADOPTIVE FATHER = 2, STEPFATHER = 3, AND FOSTER FATHER OR MALE GUARDIAN = 4. IF TWO FATHERS HAVE SAME NUMBER RELATIONSHIP, DISPLAY THAT RELATIONSHIP. ELSE, GO TO BOX 7.

b. {CHILD}'s {father/stepfather/foster father}? 2 7 9

BOX 7

IF THE CURRENT ROSTER SHOWS THAT THE CHILD'S GRANDPARENT IS IN THE HOUSEHOLD, ASK C. ELSE, GO TO BOX 8.

IF THE CURRENT ROSTER SHOWS A BROTHER OR SISTER TO THE CHILD IN THE HOUSEHOLD AND THE AGE OF THIS SIBLING IS GREATER THAN OR EQUAL TO THE SAMPLED CHILD'S AGE - 1, ASK D. ELSE, GO TO BOX 9.

IF THE CURRENT ROSTER SHOWS THAT ANY HH MEMBER IS 18 OR OLDER, ASK E. ELSE, GO TO F.

- e. Another adult in your household whom we haven't
already mentioned?
- f. Someone at an after-school program?
- g. Other adults who do not live in your household?

During this school year, how often have you {or any of the people we just mentioned} helped {CHILD} with {his/her} reading, language arts or spelling homework? Would you say ...

- Never, 1
- Less than once a week, 2
- 1 to 2 times a week, 3
- 3 to 4 times a week, or 4
- 5 or more times a week? 5
- REFUSED 7
- DON'T KNOW..... 9

- Y~ 1 (HEQ.097) 2
- NO (HEQ.100) 7
- REFUSED (HEQ.100) 9
- DON'T KNOW (HEQ.100)

Which of the following people has helped {CHILD} with (his/her) math homework either at home or somewhere else during this school year?

CAPI INSTRUCTIONS: AFTER FIRST TIME QUESTION APPEARS, DISPLAY "Which ... year?" IN SQUARE BRACKETS. FOR A, DISPLAY "mother" IF THE MOTHER IS A BIRTH OR ADOPTIVE MOTHER, DISPLAY "stepmother" IF THE MOTHER IS A STEPMOTHER, OR DISPLAY "foster mother" IF THE MOTHER IS A FOSTER MOTHER.

FOR B, DISPLAY "father" IF THE FATHER IS A BIRTH OR ADOPTIVE FATHER, DISPLAY "stepfather" IF THE FATHER IS A STEPFATHER, OR DISPLAY "foster father" IF THE FATHER IS A FOSTER FATHER.

FOR D, DISPLAY "brother" IF THE CHILD HAS A BROTHER WHOSE AGE IS GREATER THAN OR EQUAL TO THE SAMPLED CHILD'S AGE - 1. DISPLAY "sister" IF THE CHILD HAS A SISTER WHOSE AGE IS GREATER THAN OR EQUAL TO THE SAMPLED CHILD'S AGE - 1. DISPLAY "brother or sister" IF THE CHILD HAS BOTH A BROTHER AND SISTER WHOSE AGES ARE GREATER THAN OR EQUAL TO THE SAMPLED CHILD'S AGE -1.

IF THE CURRENT ROSTER SHOWS THAT CHILD'S MOTHER (OF ANY TYPE, BIRTH, ADOPTIVE, ETC.) IS IN THE HOUSEHOLD THEN ASK A. IF THERE ARE TWO MOTHERS, USE HEQ.097A FOR THE MOTHER WITH THE LOWER NUMBER RELATIONSHIP IN THE FOLLOWING SYSTEM: BIRTH MOTHER = 1, ADOPTIVE MOTHER = 2, STEPMOTHER = 3, AND FOSTER MOTHER OR FEMALE GUARDIAN = 4. IF TWO MOTHERS HAVE SAME NUMBER RELATIONSHIP, DISPLAY THAT RELATIONSHIP. ELSE, GO TO BOX 11.

a. {CHILD}'s {mother/stepmother/foster mother}? 2 7 9

BOX 11

IF THE CURRENT ROSTER SHOWS THAT CHILD'S FATHER (OF ANY TYPE, BIRTH, ADOPTIVE, ETC.) IS IN THE HOUSEHOLD THEN ASK B. IF THERE ARE TWO FATHERS, USE HEQ.097B FOR THE FATHER WITH THE LOWER NUMBER RELATIONSHIP IN THE FOLLOWING SYSTEM: BIRTH FATHER = 1, ADOPTIVE FATHER = 2, STEPFATHER = 3, AND FOSTER FATHER OR MALE GUARDIAN = 4. IF TWO FATHERS HAVE SAME NUMBER RELATIONSHIP, DISPLAY THAT RELATIONSHIP. ELSE, GO TO BOX 12.

b. {CHILD}'s {father/stepfather/foster father}? 2 7 9

BOX 12

IF THE CURRENT ROSTER SHOWS THAT THE CHILD'S GRANDPARENT IS IN THE HOUSEHOLD, ASK C. ELSE, GO TO BOX 13.

c. A grandparent who lives with {CHILD}? 2 7 9

BOX 13

IF THE CURRENT ROSTER SHOWS A BROTHER OR SISTER TO THE CHILD IN THE HOUSEHOLD AND THE AGE OF THIS SIBLING IS GREATER THAN OR EQUAL TO THE SAMPLED CHILD'S AGE - 1, ASK D. ELSE, GO TO BOX 14.

d. {CHILD}'s {{brother} {or} {sister}}? 2 7 9

BOX 14

IF THE CURRENT ROSTER SHOWS THAT ANY HH MEMBER IS 18 OR OLDER, ASK E. ELSE, GO TO F.

e. Another adult in your household whom we haven't already mentioned? 2 7 9

f. Someone at an after-school program? 2 7 9

g. Other adults who do not live in your household? 2 7 9

During this school year, how often have you or another adult helped {CHILD} with {his/her} math homework?
Would you say ...

- Never,1
- Less that once a week,2
- 1 to 2 times a week,3
- 3 to 4 times a week, or4
- 5 or more times a week?5
- REFUSED7
- DON'T KNOW..... 9

Is {CHILD} tutored on a regular basis, by someone other than you or a family member, in a specific subject, such as reading, math, science, or a foreign language?

- ~S 1 (HEQ.106) 2
- NO (BOX 14B) 7
- REFUSED (BOX 14B) 9
- DON'T KNOW (BOX 14B)

READING	(BOX 14B)
MATH	91 (HEQ.1070S) 7
SCIENCE	(BOX 14B)
FOREIGN LANGUAGE	9 (BOX 14B)
SPEECH	
WRITING AND SPELLING	
OTHER (SPECIFY)	
REFUSED	
DON'T KNOW	
1 (BOX 14B) 2 (BOX 14B) 3 (BOX 14B) 4 (BOX 14B) 5 (BOX 14B) 6	

IF (NumberofChildren=1) OR (Number of Children>1 AND ChildNum=1),
 ASK ALL OF HEQ.11 0. OTHERWISE, IF (NumberofChildren>1 and
 ChildNum=2), ASK ONLY HEQ.110b.

HELP AVAILABLE

{I'm going to read some statements about things that may occur in your family.} {Now I have some
 questions about meals and other routines.} In a typical week, please tell me the number of days ...

CAPIIINSTRUCTION: DISPLAY "I'm ... family" IF (Number of Children=1) OR IF (Number of Children>1 and
 ChildNum=1.) OTHERWISE, IF (Number of Children >1 and ChildNum=2) DISPLAY "Now ... routines."

- a. At least some of the family eats breakfast together.
- b. {CHILD} has breakfast at a regular time.
- c. Your family eats the evening meal together.
- d. The evening meal is served at a regular time.

CAP I INSTRUCTIONS:

- 1. DISPLAY "HELP AVAILABLE" WHEN ON B, C, AND D. DISPLAY THE FOIIOWING HELP TEXT
 FOR BAND D: "Regular means generally around the same time." DISPLAY THE FOIIOWING
 HELP TEXT FOR C: "By family, we mean at least one adult and one child."
- 2. WHEN ON B-D. DISPLAY "I'm going ... days" IN SQUARE BRACKETS.
- 3. DISPLAY "WEEK" IN UNDERLINED TEXT.

NUMBER OF DAYS OR	<u> </u>
REFUSED	77
DON'T KNOW	99

During the last **five days** {CHILD} was in school, how many breakfasts did (he/she) eat that were **NOT** school breakfasts. By breakfast we mean breakfasts eaten at home, at childcare, or at school, but not part of a school breakfast program. Please count only one breakfast per day.

| |

NUMBER OF BREAKFASTS OR
 REFUSED ., 77
 DON'T KNOW 99

IF NUMBER OF BREAKFASTS IS ZERO REFUSED OR DON'T KNOW, GO TO HEQ.118.
ELSE, GO TO HEQ.116.

	2	7	9
a. At home?1	2	7	9
b. At a relative's or friend's home?1	2	7	9
c. At a child care location?1	2	7	9
d. At school, but not part of school breakfast?1			
e. At a restaurant, including food taken out from fast food restaurants?1			
f. Somewhere else? (SPECIFY)1			

• IF HEQ.116f= 1, CONTINUE WITH HEQ.1170S. OTHERWISE, GOTO HEQ.118.

<u>NO</u>	<u>REF</u>	0
2	7	9
2	7	9

During the last **five days** {CHILD} was in school, how many breakfasts did you eat? Please count only one breakfast per day.

|_|

NUMBER OF BREAKFASTS OR
 REFUSED 77
 DON'T KNOW 99

SCHOOL BUS 1 (HEQ.126)
 PARENT DRIVES (HIM/HER) 2 (HEQ.126)
 CARPOOL..... 3 (HEQ.126)
 WALK4 (HEQ.126)
 OTHER (SPECIFY)91 (HEQ.125)
 REFUSED 7 (HEQ.126)
 DON'T KNOW..... 9 (HEQ.126)

Less than 15 minutes, 1
 15-30 minutes, or..... 2
 More then 30 minutes? 3
 REFUSED 7
 DON'T KNOW..... 9

On school days, how much time does {CHILD} have between arriving at school and classes starting?
 Would you say ...

Less than 10 minutes, 1
 10-20 minutes, or 2
 More then 20 minutes?..... 3
 REFUSED7
 DON'T KNOW..... 9

On weeknights during the school year, does {CHILD} usually go to bed at about the same time each night,
 or does {his/her} bedtime vary a lot from night to night?

HAS USUAL BEDTIME
 BEDTIME VARIES
 REFUSED
 DON'T KNOW

1 (HEQ.145) 2 (BOX 17) 7 (BOX 17) 9 (BOX 17)

1 1 1-1 1 1
 HOUR MINUTE or
 REFUSED 77 (BOX 7)
 DON'T KNOW 99 (BOX 7)

AM..... 1
 P.M..... 2
 REFUSED 7
 DON'T KNOW..... 9

IF (NumberOfChildren = 1) OR IF (NumberOfChildren > 1 AND ChildNum = 1),
CONTINUE WITH HEQAOO. OTHERWISE, GO TO BOX 18.

Now, I have some questions about your neighborhood. How safe is it for children to play outside during the day in your neighborhood?

Not at all safe, 1
 Somewhat safe, or..... 2
 Very safe? 3
 REFUSED..... 7
 DON'T KNOW..... 9

- | | | | | |
|----|---|------|----|----|
| | BIG | SOME | NO | |
| | <u>PROBLEM PROBLEM PROBLEM..BL</u> | | | DK |
| a. | Garbage, litter or broken glass in the street or road, on the sidewalks, or in yards? | | | |
| b. | Selling or using drugs or excessive drinking in public? | | | |
| c. | Burglary or robbery? | | | |
| d. | Violent crimes like drive-by shootings? | | | |
| e. | Vacant houses and buildings? | | | |

APPENDIX E

Factor Analysis Component Matrix

Appendix E

Factor Analysis of Parent Involvement at Home items- Component Matrix

Home involvement activity	Component		
	1	2	3
Do art	.57		
Play games	.56		
Build things	.52		
Teach about nature	.54		
Do sports activities	.51		
Help with homework		.65	
Help with reading homework		.82	
Help with math homework		.83	
Read to child			.55
Tell stories			.57
Sing songs			.48
Practice numbers			.54

Extraction Method: Principal Component Analysis

Rotation Method: Direct Oblimin

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