The Kindergarten Home Visit Project: A Kindergarten Transition Intervention Study

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor
of Philosophy in the Department of
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ABSTRACT

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Abstract

This study examined the effect of the Kindergarten Home Visit Project, a novel universal intervention program designed to enhance the transition to kindergarten for children and families by providing teachers with the training and support they need to conduct a home visit for each of their students at the beginning of the school year. Forty-four kindergarten teachers from 19 schools and 928 children and their families participated in the project. Teachers were blocked within schools and randomly assigned to intervention or control conditions. Intervention teachers successfully completed home visits for 98% of their students. After controlling for child and teacher demographic factors, multilevel modeling with children nested within classrooms and schools revealed that random assignment to receive a home visit had a significant positive impact on classroom work habits by students and teacher-child relationship warmth at the end of kindergarten. Assignment to home visiting was also associated with positive child outcomes for girls, specifically including: higher academic achievement, academic motivation, work habits, social skills, and better conduct. Impact on boys was non-significant. The effect of home visiting on child outcomes was mediated by an intervening effect on academic motivation for girls during the fall. Positive effects of assignment to intervention were also demonstrated for children from non-English speaking homes. These children demonstrated higher academic motivation

and better work habits. In addition, both non-English speaking parents and their teachers reported reduced adverse effects of language barriers on home-school collaboration. The intervention was also found to have a positive effect on teacher attitudes and beliefs. Teachers who conducted home visits reported an increased understanding of the diverse needs and cultural differences of families, a greater willingness to reach out to parents, and a more positive connection to students and their families. These findings suggest that home visiting is beneficial to teachers, students and families and should be continued and expanded as a kindergarten transition practice in the schools.

Dedication

I want to dedicate this manuscript to my husband, Marty Schulting, my two sons, Milo and Burke, and to my third son, who will soon be joining our family.

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This research was a collaborative effort that would not have been possible without the help and support of many individuals. First, I would like to thank my husband, Marty, for his endless encouragement and support throughout this project. I would also like to thank my two young sons, Milo and Burke, for understanding as best they could when I had to take a break from playing trucks and reading books with them in order to "work on the computer." I also thank my soon-to-arrive third son for arriving *after* the completion of this project!

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1. Introduction

Kindergarten entry at age 5 marks the beginning of formal schooling in the United States. Children's experiences during this time disproportionately influence their academic trajectories (Entwisle & Alexander, 1999; Pianta, 1999; Ramey & Ramey, 1999). The beginning of formal schooling has been referred to as a "critical period" (Entwisle, 1995) or "sensitive period" (Pianta & Walsh, 1996) because children's early academic performance and experiences set them on an academic trajectory that is not easily altered in later years (Pianta, 1999). Early school failure is associated with continued academic failure throughout school, behavior problems, delinquency, dropping out, unemployment, and lower adult wages (Jimerson, 1999). Given the significant negative outcomes associated with early school failure, it is essential that policies and practices designed to promote children's academic achievement start at the beginning of formal schooling, during the transition to kindergarten.

Recognizing the importance of early school success, the vast majority of American schools implement practices and policies to support children's transition to kindergarten (Pianta, Cox, Taylor & Early, 1999; Schulting, Malone & Dodge, 2005). Most kindergarten transition practices are based on ecological models of kindergarten achievement, which focus on the importance of contextual factors and the links between contexts to support children during the transition to kindergarten. Given the important role that parents play in supporting children's academic success (Hill & Craft, 2003; Hill

et al., 2004; Izzo, Weissberg, Kasprow, & Fendrich, 1999; Marcon, 1999, Sheldon & Epstein, 2002, Sheldon & Epstein, 2005), transition practices are implicitly designed to nurture home-school relations and to increase parent involvement.

Unfortunately, however, transition practices are not typically designed to address the unique needs of low-income children, who have a particularly difficult time with the transition to kindergarten and who are at heightened risk of early school failure (Brooks-Gunn & Duncan, 1997). These practices fail to mitigate the numerous barriers to school involvement faced by low-income parents (Pianta, Cox, Taylor & Early, 1999; Schulting, Malone & Dodge, 2005). Therefore, the transition practices commonly implemented by schools have a limited impact on the very children and families who face the greatest risk of difficulty during the transition to kindergarten (Schulting, Malone & Dodge, 2005).

The Integrated Model of Kindergarten Achievement (Schulting, 2006), posits that low-income children are at heightened risk of school failure during the transition to kindergarten because of a "mismatch" between the family and the school. Low-income children's increased risk of school failure is hypothesized to result, in part, because of mismatch between the culture, language, and beliefs of these families and the school. There also is a mismatch between the resources and skills of low-income families and children and the expectations and practices of the schools. It is because of this mismatch that traditional transition practices do not meet the needs of high-risk children and

families. Traditional transition practices presume and require that families know how to take advantage of resources that schools offer. However, low-income families may not have the requisite skills and knowledge or access to the necessary resources (e.g. transportation, internet) in order to benefit from transition practices offered by schools.

The kindergarten home visit intervention described in this study is designed to address these areas of mismatch in order to improve the transition to kindergarten for all children, especially high-risk children and families. The purpose of the study is to evaluate the impact of teacher home visiting, a relatively intense, individualized transition practice, on child outcomes, parent involvement, parent-teacher relationships, teacher-child relationships, and teacher attitudes during the kindergarten year.

1.1 High-Risk Children and the Transition to Kindergarten

Practices to ease the transition to kindergarten are essential because not all children experience success at school entry. In a national survey conducted by Rimm-Kaufman, Pianta, and Cox (2000), kindergarten teachers reported that 48% of children had difficulty adjusting to school during the transition to kindergarten. Teachers reported that approximately one third (32%) of children demonstrated "some problems" during the transition to kindergarten, and 16% of children had a "difficult or very difficult" entry into kindergarten characterized by "serious concerns or many problems" (Rimm-Kauffman et al., 2000, p. 154). In addition, over one third of teachers reported that problems such as difficulty working independently, difficulty following directions,

disorganized home environment, and a lack of academic skills characterized about half or more of the students in their class. Although teachers in this study reported an alarmingly high rate of transition difficulties in the general population of kindergartners, teachers in school districts serving a high percentage (30% or more) of low-income children were more likely to report that half their class or more had significant difficulty on seven of the nine problem areas: difficulty following directions, lack of academic skills, disorganized home environment, difficulty working independently, lack of preschool experience, problems with social skills, and immaturity.

Unfortunately, the heightened risk of failure among low-income children during the transition to kindergarten is a harbinger of continued difficulties throughout early schooling. Low-income children are disproportionately represented among early school failures of all kinds. During kindergarten, low-income children are more likely to be deemed "unready" for school, recommended for transitional or "junior" kindergarten classes, retained, referred for special education and other specialized services, suspended, expelled, placed into lower academic tracks, and have lower achievement scores (Brooks-Gunn & Duncan, 1997; Ellwein, Walsh, Eads & Miller, 1991; Entwisle & Alexander, 1999; Jimerson, 1999; Korenman, Miller & Sjaastad, 1995; Lee & Burkham, 2002; Meisels, 1999; Smith, Brooks-Gunn & Klebanov, 1997; Vernon-Feagans, 1996). Low-income children are also more apt to experience relationship problems with peers

and teachers, which can escalate across development and increase the risk of dropping out of school (Jimerson et al., 2000; Pianta, La Paro, Payne, Cox & Bradley, 2002). Therefore, the importance of kindergarten success for this high-risk population cannot be overstated.

The education of low-income children is a critical issue in the United States because the number of children living at or near the poverty line is unacceptably high, and continues to climb. In 2008, the National Center for Children in Poverty reported that an astounding 43% of American children under the age of six lived in a low-income family (National Center for Children in Poverty, 2008). Unfortunately, family income is not evenly distributed and therefore, certain populations of children are even more likely to be from low-income families. In 2008, 29% of white children were living at or near the poverty line, but an alarming 64% of Latino children, 64% of African American children, and 61% of children with immigrant parents were from low-income families. Overall, approximately 63% of low-income children under six years of age are racial minorities (National Center for Children in Poverty, 2008).

There is also evidence that a significant proportion of minority children are struggling academically beginning at school entry (Duncan & Magnuson, 2005; Lee & Burkham, 2002). Because race and income are often confounded in studies examining the relation between low-income status and academic achievement, it is difficult to disentangle the effects of race as separate from income on children's school outcomes

(Duncan & Magnuson, 2005; Hill & Craft, 2003). Minority status is a source of risk for academic failure, in part, because of this link between race and income, however, there is also evidence that race, apart from income, places children at risk of poor achievement in school (Duncan & Magnuson, 2005; Lee & Burkham, 2002). For example, some studies have found that the racial achievement gap between minority and white children is completely explained by SES and related demographic factors; however, other studies have demonstrated that SES accounts for only about half of the racial achievement gap (Duncan & Magnuson, 2005; Lee & Burkham, 2002). Therefore, it is clear that both race and SES play a role in early academic achievement, and that there is some overlap between race and SES effects. Furthermore, given that the majority of low-income children are minorities, it is clear that interventions designed to address the needs of low-income children must also take into account the racial, ethnic, cultural and linguistic diversity of this high-risk population (National Center for Children in Poverty, 2008).

1.2 Risk Factors for Early School Failure

Low-income and minority children are more likely to experience a number of factors that place them at increased risk of failure during the transition to kindergarten. These risk factors include, but are not limited to, below-average IQ (Smith et al., 1997), externalizing behavior problems (Jimerson et al., 2000; Kusche, Cook & Greenberg, 1993), internalizing behavior problems (Normandeau, 1998; Rappaport, 2001), low birth weight (Avchen, Scott and Mason, 2000), malnutrition (Grantham-McGregor, Powell,

Walker, Chang & Fletcher, 1994), lead exposure (Bellinger, Stiles & Needleman, 1992; Lanphear, Auinger & Cox, 2000), immigrant status (Lee & Burkham, 2002), high residential mobility (Temple & Reynolds, 2000), poor academic skills upon school entry (Stipek & Ryan, 1997), prior maltreatment (Shonk & Cicchetti, 2001), health problems (Brooks-Gunn & Duncan, 1997), and poor relationships with peers and teachers (Hamre & Pianta, 2001; Jimerson et al., 2000).

Although the vast majority of identified academic risk factors are child-level variables, a number of familial and environmental factors have also been found to place low-income children at increased risk for school failure. The family-level risk factors include: parenting and mother-child relationship quality (Hill, 2001; Pianta and Harbers, 1996), inadequate cognitive stimulation at home (Jimerson, Egeland & Teo, 1999), parental mental illness, low maternal education level, single parent status (Dubow & Ippolito, 1994; Duncan, Brooks-Gunn & Klebanov, 1994; Luster & McAdoo, 1996; Scott-Jones, 1987), and a lack of parent involvement at school (Izzo, Weissberg, Kasprow, & Fendrich, 1999). The identified environmental risk factors include: lack of preschool attendance (Lee, Brooks-Gunn, Schnur & Liaw, 1990), poor quality daycare or preschool (Magnuson, Meyers, Ruhm & Waldfogel, 2004), negative teacher-child relationships (Hamre & Pianta, 2001; Hamre & Pianta, 2005), poor instructional quality (Pianta et al., 2002), teacher bias (Casteel, 2001; Cooper, 2003; Entwisle & Alexander, 1988), and overall poor public school quality (Heyneman & Loxley, 1983; Lee & Burkham, 2002).

Furthermore, not only are low-income children more likely to experience any one of these risk factors, they are also more likely to endure a high number of these risk factors simultaneously (Brooks-Gunn, Klebanov & Liaw, 1995; Sameroff & Fiese, 2000).

A number of risk factors for early school failure are particularly relevant to this study and warrant additional attention. Therefore, parental involvement, parent-teacher relationships, teacher-child relationships and teacher bias and their relation to child outcomes during the transition to kindergarten will be discussed in more detail below.

1.2.1 Parental Involvement

During the past three decades, there has been increased interest among researchers and educators alike regarding the importance of parents' involvement in their children's education. A growing body of research indicates that parental involvement is linked to a number of positive outcomes for children, including higher standardized test scores, higher GPAs, reduced absenteeism, increased motivation, higher aspirations and fewer behavior problems (Hill & Craft, 2003; Hill et al., 2004; Izzo, Weissberg, Kasprow & Fendrich, 1999; Marcon, 1999; Sheldon & Epstein, 2002; Sheldon & Epstein, 2005). Research documenting the importance of parental involvement for positive child outcomes has led to the creation of numerous programs, policies and even legislation to increase parental involvement in schools. In 1990, parental involvement became a national education goal. The eighth goal included in the Goals 2000: Educate America Act stated that "by the year 2000, every school will

promote partnerships that will increase parental involvement and participation in promoting the social, emotional and academic growth of children" (National Educational Goals Panel, 1999). A decade later, the No Child Behind (NCLB) Act of 2001 also emphasizes the importance of parental involvement. Part A, section 1118 of NCLB describes the parent involvement requirements that must be met if schools are to receive NCLB funding (U.S. Department of Education, 2002). For example, NCLB requires schools to create a written parental involvement policy and to host an annual parent meeting to explain the policy. Furthermore, recognizing the diverse needs of families, NCLB encourages schools to offer flexible meeting times, translate documents into the parents' native language and also allows for the funding of "transportation, child-care or home visits as such services relate to parental involvement" (U.S. Department of Education, 2002). The national emphasis on parental involvement over the past two decades reflects a growing consensus regarding the importance of parental participation in education.

But what exactly *is* parental involvement? Parental involvement is defined in many ways in the literature (Epstein, 1996; Grolnick & Slowiasczek, 1994; Kohl et al., 2000). For purposes of this study, the definition of parental involvement proposed by Kohl et al. (2000) will be used. This definition encompasses three dimensions of parental involvement: parent – teacher contact (to promote parent monitoring of child's homework completion and progress in school), parent involvement in school activities,

and parent involvement at home (to support intellectual growth and academic achievement). Kohl et al. (2000) also proposed a multidimensional definition of the quality of parent involvement including: the quality of the parent-teacher relationship, the teacher's perception of the parent's value of education, and the parent's level of endorsement of the school. The first two of these components of the quality of parent involvement will also be used in this study.

The relation between family income and parental involvement is complex and studies have produced mixed findings. Lareau (1987) found that low-income parents are less likely to initiate contact with the teacher or school, and if they did they were more apt to raise nonacademic issues, and that interactions between low-income parents and teachers were more likely to be stiff and uncomfortable. Hoover-Dempsey, Bassler, and Brissie (1992) concluded that only school-based parental involvement was related to SES and that involvement at home was not affected. Similarly, in her study of inner-city preschoolers, Marcon (1999) found that low-income African American parents were just as involved in their children's education as their more affluent counterparts. Thus, it is not clear whether SES is directly related to parental involvement, or perhaps it is mediated through other related factors such as single-parent status, parental education, or minority status. Therefore, to understand better the factors influencing the involvement of low-income parents, the relation between parent involvement and co-

factors of low-income, including marital status, parent education, and minority status, will be reviewed.

Parents living in intact two-parent homes have been found to be the most involved in their children's schooling (Grolnick & Slowiaszek, 1994). Kohl et al. (2000) found that single parent status was negatively related to three aspects of parent involvement: parent involvement at school, the quality of parent-teacher relationship, and the teacher's perceptions of the parent. Thus, single parents were less likely to be involved at school and had relationships with teachers that were characterized by less comfort and enjoyment, which may explain, in part, why single-parents are less apt to initiate contact with the teacher. These findings seem to support the notion that single parents are less involved in their children's education. However, after controlling for other demographic factors, Grolnick and Slowiaszek (1994) found that although single parents may be less involved in school activities, they were equally involved in helping their children at home and communicating with their child about school-related topics. It appears from these findings that single parents may have a harder time coming to school and being involved in events at the school building, perhaps due to conflicts with work and child-care responsibilities. Yet, they are no less involved than married parents on school-related activities with their children at home.

The impact of parent education on parental involvement has also been investigated. A number of studies have found that parents with less education,

particularly individuals who did not graduate from high school, have lower levels of contact with teachers and the school and less participation at school (Grolnick & Slowiaszek, 1994; Kohl et al., 2000; Moles, 1993). However, Kohl et al. also found that parent education was not related to the quality of the parent-teacher relationship. This lack of association is significant given that the quality of the parent-teacher relationship was found to be more strongly correlated with child outcomes than the amount of parent-teacher contact (Kohl et al., 2000).

Grolnick et al. (1997) discovered that parental resources play a significant role in whether or not parents are responsive to teachers' requests for involvement. For example, parents in difficult contexts, as measured by lack of financial and material resources or social support, and the presence of stressful life events, were less responsive to teachers' efforts to involve them. Similarly, Lareau (1987) concluded that low-income parents' difficulty in becoming involved stemmed from the disconnect between the schools' requirements for parents and the parents' resources. Lareau suggests that the concept of cultural capital can explain the different levels of parental involvement across social classes and posits that schools' definitions of parental involvement require cultural capital not equally available to all families. Therefore, class-related resources such as education, job flexibility and disposable income influence parents' involvement in their children's schooling. For example, parent-teacher conferences and other school-based events were found to favor middle-class parents because coming to the school

may require transportation, childcare, and job flexibility, resources often unavailable to low-income parents. In addition, parents with lower levels of education were less apt to comply with teachers' requests that they read to their children at home because they felt they lacked the necessary skills. In contrast, the middle-class parents were able to comply with teachers' requests for involvement because they had the resources or skills required for successful participation (Lareau, 1987).

Hill et al. (2004) also found that parent education level was an important predictor of successful parent involvement. Hill and colleagues discovered that the involvement of parents with lower education levels had a positive impact on children's academic aspirations, but did not influence children's behavior in school or academic achievement. In contrast, the involvement of more highly educated parents was linked to positive changes in children's behavior and achievement in school. Like Lareau (1987), Hill and colleagues concluded that parents with lower levels of education may lack the skills necessary to help their children with schoolwork, and additionally, parents with low levels of education may not model the importance of educational achievement (Hill et al., 2004).

Another resource that is necessary for parents to support their child's academic achievement effectively is information or knowledge about school. Hill and Taylor (2004) suggest that parent-involvement and contact with the school is a critical avenue through which parents gain the knowledge they need to effectively support their child's

academic achievement. For example, through contact with the teacher and school, parents learn about the school's academic and behavioral expectations and the ways in which they can support their child's success. Unfortunately, because low-income, minority or less-educated parents are typically less involved with the teacher and the school (Reynolds et al., 1992) they often lack this knowledge and therefore are less able to be effectively involved (Hill et al., 2004). For example, Lynch and Stein (1987) noted that Hispanic and African American parents knew significantly less about the special education services their children should receive at school, and offered fewer suggestions regarding their children's education at special education meetings compared to European American parents. These findings indicate that greater levels of involvement with the school and teacher, designed to increase parents' knowledge and understanding of school expectations and ways to support their children's success, could increase the effectiveness of parent involvement among less-educated parents (Hill & Taylor, 2004; Hill et al., 2004).

Another correlate of low-income status that has an important influence on parent involvement is minority status as defined by race, ethnicity and native language. Minority status has been found to be related to lower levels of parental involvement in school and home (Kohl et al., 2000; Moles, 1993). Fuller, Eggers-Pierola, Holloway, Liang, and Rambaud (1996) found that Latino and African American parents were less likely than white parents to participate in educational activities with their children at

home. For example, 52% of white parents, 29% of Latino parents and 27% of African American parents report reading to their child at least once a day. This difference could be linked to parents' education level; however, the impact of parent education and other variables must be understood within the context of minority status. For example, Kohl et al. (2000) found that although parent education predicted the level of parental involvement for Caucasian parents, there was no significant relation between education and involvement for African American parents. One explanation of this finding is that perhaps some African Americans parents had negative school experiences themselves and therefore are less involved with schools regardless of education level. The lower levels of involvement among African American parents is especially troubling given the finding by Hill et al. (2004) that parent involvement was positively related to children's academic achievement for African Americans but not for European Americans. Hill and colleagues suggest that perhaps European American parents have numerous avenues through which they can support their child's achievement in school, but this may be less true for African American parents. Thus, the involvement of African American parents at school is a particularly powerful and important means of supporting their children's success in school.

Both African American and immigrant parents may be less involved at school as a result of the discontinuity between their cultural beliefs and practices and those of the schools, which tend to be based on white, middle-class norms (Garcia-Coll & Pachter,

2002). For example, Latinos and other immigrant families such as Asian-Americans, face a number of obstacles to parental involvement due to their cultural and linguistic heritage. For many, language barriers are a significant factor in their decision not to become involved. Not surprisingly, immigrant parents often feel uncomfortable in American schools, particularly when they cannot effectively communicate in English (Moles, 1993). In addition, parents who have been educated in other countries are often unfamiliar with the American education system and therefore have a limited understanding of how to become involved and the ways they are expected to support their child's learning.

These sociocultural differences between school personnel and minority families can lead to misunderstandings, stereotyping and distrust on both sides (Mapp, 1997). For example, one commonly held belief among educators is that minority parents just don't care about their children, which is why they are not as involved in their education. However, this belief seems to reflect biases on the part of the teacher rather than indifference on the part of the parents as a number of studies have found that minority parents are very committed and concerned about their children's education. Ritter et al. (1993) found that minority parents expressed high levels of interest and concern regarding their children's education and often rated their children's schoolwork as "important" or "very important." In fact, in ratings of concern and awareness of homework, courses and schedules, African American parents were found to be more

concerned than their Asian Americans, Latinos and white counterparts (Ritter et al., 1993). This finding clearly refutes the idea that minority parents do not care about their children's success in school.

Hoover-Dempsey and Sandler (1995) suggested that parents become involved because they construe the parental role as including involvement in their child's school and educational activities. Sheldon (2002) found that parents' role construction predicted both home and school involvement. Presumably, the relation between role construction and behavior is due to the fact that it is necessary for parents to construe their role as including involvement in their child's education before they become involved in either arena. Discontinuity between school expectations for parent involvement, and parents' role construction, may also explain why low-income or minority parents may be less involved than schools expect. For example, within the Latino culture and many Asian cultures, it is common to respect teachers' professional expertise and to defer to them even in questions of their child's best interest (Espinosa, 1995). In a study of minority parental involvement, Ritter, Mont-Reynaud, and Dornbusch (1993) found that compared with African American and white parents, Asian-Americans and Latino parents tended to trust the school more, were more likely to defer to teachers and the school, and were less likely to criticize teachers. These cultural differences often lead to lower levels of parental involvement as parents trust the schools and teachers to educate their children and believe that their role as parents is

to take care of the child at home, rather than to collaborate with the teacher to support academic achievement.

The research reviewed here on parent involvement illustrates that low-income status, and related factors such as marital status, parental education and minority status, are related to parents' involvement at school and home. Overall, there is compelling evidence to suggest that low-income, minority, and non-English speaking parents face a larger number of potential barriers to involvement at home and school and to developing a positive relationship with teachers and school personnel as a result of limited financial resources, cultural capital, education levels, previous schooling experiences, role construction, and cultural and linguistic differences. It can also be concluded that in order to increase the involvement of low-income and minority parents, kindergarten transition practices or other efforts to involve parents must effectively address these numerous and often substantial barriers to involvement. If identical teacher practices are used to encourage the involvement of families from very different circumstances, those practices may be less successful with low-income and minority parents, and thus serve to exacerbate the different levels of parental involvement among these diverse populations of parents.

Unfortunately, it appears that teachers do not typically work to address parents' barriers to involvement or implement specific strategies to encourage the involvement of low-income or minority parents. In fact, the way teachers typically interpret and

respond to parents' low levels of involvement may actually serve to reduce parental involvement at school even further. For example, it is common for teachers to interpret low levels of involvement erroneously as an indication that parents do not value education or care about their children's academic success (Eccles & Harold, 1993). Although Ritter et al. (1993) demonstrated that even uninvolved parents do in fact value education, teachers may limit their efforts at reaching out to uninvolved parents to the extent that they believe such parents are not interested in their child's education. Epstein and Dauber (1991) also concluded that teachers who did not make efforts to involve parents "made more stereotypic judgments about the involvement and abilities of less educated parents, socioeconomically disadvantaged parents and single parents," (p. 290), exacerbating further the distance and disconnect between low-income and minority families and schools. This teacher practice is particularly concerning, given that it will likely take extra effort on the part of teachers to build relationships and increase the involvement of low-income and minority parents.

1.2.2 Teacher-Child Relationships

The quality of the teacher-child relationship in kindergarten has also been found to predict children's academic and behavioral outcomes in kindergarten and the early grades (Birch & Ladd, 1997; Hamre & Pianta, 2001; Pianta et al., 1995) and behavioral outcomes through eighth grade (Hamre & Pianta, 2001). Hamre and Pianta (2001) found that teacher-child relationships in kindergarten that were characterized by negativity,

conflict and dependency, were related to poor child outcomes in the early elementary school including lower standardized test scores, lower grades, and poorer work habits. The predictive value of kindergarten teacher-child relationships is particularly concerning, given the evidence that the positivity of teacher-child relationships is lower for children from low-income backgrounds, children whose mothers have low levels of education, and in schools serving a high concentration of low-income students (Pianta et al., 2002).

More recently, Hamre and Pianta (2005) examined the relation between both instructional and relational quality and child outcomes in first grade. They found that children at high risk of school failure (as measured by problems with attention, behavior, social competence and academic achievement in kindergarten) had higher levels of conflict with teachers. Interestingly, it was demonstrated that strong emotional or relational support provided by the teacher, but not instructional support, was related to improved academic outcomes in first grade among this high-risk group. These results further highlight the importance of positive and supportive teacher-child relationships to support early school success, particularly among high-risk children. However, it appears that high-risk children are less likely to develop the kind of positive relationships with teachers necessary to support their early achievement (Pianta et al., 2002).

Research described previously has indicated that teachers may develop biased judgments about low-income or minority parents, and unfortunately, teachers may also develop biased perceptions of low-income or minority students. A substantial literature identifies the importance of teacher expectations for student achievement and the possibility that negative teacher attitudes toward low-income and minority children may further reduce children's academic achievement in school (Casteel, 2001; Cooper, 2003; Delpit, 1995; Entwisle & Alexander, 1999). Teacher bias can have a detrimental impact on child outcomes through lowered expectations, exposure to less challenging academic work, and the development of more negative teacher-child interactions and relationships (Casteel, 2001; Cooper, 2003; Pianta, 2002; Vernon-Feagans, 1996). In addition, teachers also have a great deal of power to make subjective assessments of student performance when assigning grades and reporting on child behavior (Entwisle & Alexander, 1988; Zimmerman, Khoury, Vega, Gil & Warheti, 1995). For example, African American students are more apt to receive negative behavior ratings from teachers of a different race (Zimmerman et al., 1995). In addition, evidence indicates that teachers' early assessments of children's ability, as reflected through the grades they are assigned, were lower for African American first graders compared to their European American counterparts, despite equivalent standardized test scores between the two groups when they began first grade (Entwisle & Alexander, 1988). Furthermore, the grades given to African American first graders persisted throughout early schooling

demonstrating the power of initial teacher evaluations to set children on a negative academic trajectory (Entwisle & Alexander, 1988).

1.3 Models of Kindergarten Achievement and Related Interventions

Although researchers, policy-makers, and educators alike can agree that low-income and minority children are at increased risk for early school failure and that improving the early school performance of these at-risk children is an important goal, there continues to be significant controversy regarding *how* to ensure the academic success of all children as they enter kindergarten. One reason for the controversy is the lack of a shared, coherent theoretical framework to guide intervention efforts. Currently, early school success or failure is conceptualized in a number of different ways in the literature, with diverse theoretical orientations leading to a variety of different, often conflicting, intervention strategies.

1.3.1 School Readiness

The school readiness construct gained national attention in 1990 when the first of the National Education Goals asserted that "all children will start school ready to learn" (National Education Goals Panel, 1998, p. 1). Among researchers, policy-makers, educators, and the community the term readiness is typically used to refer to a child's cognitive or academic skills prior to school entry (Mashburn & Pianta, 2006; National Goals Panel, 1995; Rimm-Kaufman & Pianta, 2000; Tarkan, 2005), reflecting an emphasis

on child-level factors to explain school performance. As a result, school readiness interventions focus on identifying and remediating deficits inherent in the child.

Lack of readiness can result in any of a number of school-based intervention responses including: age-cutoffs, delayed entry into kindergarten, and transitional classes. Given the academic delays demonstrated by low-income children prior to school entry (Lee & Burkham, 2002), it is more likely that they will be deemed "unready" for kindergarten and experience interventions designed to address their lack of readiness for school (Ellwein, Walsh, Eads & Miller, 1991). Like the readiness construct itself, all of these interventions conceptualize school failure as a result of child-level factors; therefore, these interventions strive to remediate skills deficits or other deficiencies within the child.

Unfortunately, there is no empirical evidence to support the use of age-cutoffs, delayed entry and transition classes as methods of improving child outcomes during kindergarten. In fact, many of these readiness interventions have demonstrated a negative impact on child outcomes (Grau & DiPerna, 2000; Gredler, 1984; May & Kundert, 1993; May & Welch, 1984; Matthews, May & Kundert, 1999; Stipek & Byler, 2001). In addition, not only are low-income children more likely to experience these interventions, but it has been demonstrated that many of these interventions have a disproportionately negative impact on the outcomes of low-income children. Therefore, rather than improving the academic outcomes of low-income children, the readiness

practices in schools may actually heighten the risk of school failure among this already high-risk group of children. Furthermore, although the National Association of Early Childhood Specialists (2000) with the support of the National Association for the Education of Young Children, argues specifically against these practices, the use of some of these interventions appear to be growing in response to the increased pressure of school accountability and standardized testing in the early grades (Stipek, 2002).

1.3.2 Ecological Approaches to the Kindergarten Transition

The construct of readiness and related kindergarten interventions reflect schools' persistent and disproportionate emphasis on child-level factors when explaining children's academic success or failure. Children's academic and cognitive abilities measured in preschool have been found to account for less than 25% of the variance in academic outcomes in kindergarten (LaParo & Pianta, 2000), therefore, it should not be surprising that an exclusive emphasis on child-level factors has not been successful in improving academic achievement. The primary limitation of the readiness construct and related interventions is the lack of attention to the contextual factors that play a critical role in children's transition to and success in kindergarten (Pianta, Rimm-Kaufman, & Cox, 1999). Therefore, the emphasis on child-level factors as the primary determinant of kindergarten success has been replaced over time by more dynamic, social-ecological models emphasizing the importance of contextual factors, as well as the links between

contexts, to support children during the kindergarten transition (National Education Goals Panel, 1998; Pianta & Walsh, 1996; Ramey & Ramey, 1999).

The Integrated Model of Kindergarten Achievement (Schulting, 2006) builds upon earlier ecological models of the kindergarten transition such as the Developmental Model of Transition (Pianta & Kraft-Sayre, 2003) as well as Bronfenbrenner and Morris' (1998) bioecological model, and the transactional model described by Sameroff (2000). The Integrated Model of Kindergarten Achievement represents kindergarten performance as a function of child, family, and ecological factors from birth until kindergarten entry, as well as the interactions between the child, parents, school, and teacher during the transition to kindergarten.

This model recognizes the importance of the early childhood experiences of low-income children that result in significant deficits in academic and behavioral skills evident at school entry. However, in contrast to the child-centered orientation undergirding the school readiness construct, the Integrated Model of Kindergarten Achievement does not propose that these early childhood risk factors and initial academic deficits necessarily lead to early school failure. Rather, within this framework early school failure is understood to result from the mismatch between the capacities and needs of low-income children and parents, and the expectations, resources and policies of the schools and teachers beginning at school entry.

The mismatch or lack of 'fit' between children and schools is often referred to in the literature as a source of academic risk (Case, Speece & Molloy, 2003) particularly for low-income or minority children (Bowman, 1999; Entwisle & Alexnder, 1999; Garcia-Coll & Magnuson, 2000) and during the transition to formal schooling (Entwisle & Hayduk, 1988; Rimm-Kauffman et al., 2000). However, the role of this mismatch has not been included explicitly in previous models of kindergarten achievement, nor do current kindergarten transition interventions attempt to address this mismatch.

What are the components of this mismatch? There are numerous areas of mismatch between low-income families and schools that serve to heighten the risk of school failure among low-income children during the transition to kindergarten. Of particular importance are the practices and expectations of schools with regard to the involvement of low-income parents. The importance of parent involvement and positive home-school relationships for children's success is well documented (Hill & Craft, 2003; Hill et al., 2004; Izzo, Weissberg, Kasprow, & Fendrich, 1999; Marcon, 1999; Sheldon & Epstein, 2002; Sheldon & Epstein, 2005), and supported by other ecological models of the transition to kindergarten (Pianta & Kraft-Sayre, 2003; Ramey & Ramey, 1999). However, unlike other kindergarten models, the Integrated Model of Kindergarten Achievement proposes that the home-school relationship is affected by the mismatch between the skills and beliefs of low-income parents regarding their school involvement, and the school's expectations for parents. For example, as outlined previously, low-

income parents are more likely to experience substantial barriers to involvement related to cultural and linguistic differences, limited resources, lower education levels, and different interpretations of their role in supporting children's early school achievement. Furthermore, it will be demonstrated that the transition practices implemented by the schools to ease children's transition to kindergarten by nurturing home-school relations do not address these substantial barriers and therefore have a limited impact on the involvement of low-income parents (Lareau, 1987; Schulting, Malone & Dodge, 2005).

Within this framework, these areas of mismatch are understood to lead to lower levels of parent involvement, and poorer home-school relations, which negatively affect the outcomes of low-income children during the transition to kindergarten. It is proposed that the link between low-income status and early school failure can be disrupted with greater attention to these areas of mismatch and that the Integrated Model of Kindergarten Achievement can guide the creation of school policies, such as home visiting, that better meet the needs of low-income children and families during the transition to kindergarten.

1.3.3 Kindergarten Transition Practices

In 1998, in recognition of the influence of contextual factors on kindergarten achievement, the National Education Goals Panel began to emphasize the importance of "ready schools" with the first principle of ready schools being that they "smooth the transition between home and school" (National Education Goals Panel, 1998, p. 5). Much

like the first National Goal of school readiness, the goal of smoothing the transition to kindergarten inspired a number of school practices, often called transition activities or transition practices, that aim to help children and families adjust to kindergarten.

The use of transition practices in elementary schools is now almost universal (Pianta, Cox, Taylor & Early, 1999; Schulting, Malone & Dodge, 2005). However, as Pianta (1999) notes, these practices "are by and large cursory and not well-suited to families' needs" (p. 3). It is also clear that these practices are designed to familiarize children and families with the structure and expectations of kindergarten classrooms; however, they are not very likely to promote the kind of collaborative connection between home and school that it is believed to be a significant factor in promoting a successful transition to school.

Pianta, Cox, Taylor and Early (1999) surveyed a national sample of kindergarten teachers regarding their use of 21 transition practices to ease the transition to kindergarten. This study revealed that 95% of teachers reported talking with the child's parent after school has started. The majority of teachers also reported sending a letter to parents before (62%) or after (88%) school had started, sending parents a flyer about kindergarten before (69%) or after (77%) school had started, or holding an open house before (62%) or after (82%) the beginning of the school year. Less commonly utilized transition practices (reported by only 5%-17% of teachers) involved making personal or phone contact with the child, family, or preschool prior to the beginning of the school

year. It is important to note that teachers serving low-income children reported higher rates of impersonal, low-intensity practices such as sending home a letter or having an open house for parents and fewer intensive or individualized transition practices (Pianta, Cox, Taylor & Early, 1999). It is striking that low-income children, who are most likely to experience difficulties during the transition to kindergarten and subsequent school failure, received more generic and lower-intensity transition practices overall than their more affluent counterparts (Pianta, Cox, et al., 1999; Ramey & Ramey, 1999).

The transition practices of ready schools were described by Pianta, Cox, Taylor and Early (1999) as those that 1) reach out to establish links with families and preschools, 2) reach backward in time to establish connections prior to the first day of school, and 3) reach with appropriate intensity to establish personal connections to children and families through strategies such as home visiting. Using these criteria, however, it appears that not all schools, particularly schools serving low-income children, can be considered "ready." The most frequently endorsed transition practices indicate that schools are not consistently reaching out to families before school starts or with the appropriate intensity (Pianta, Cox, Taylor & Early, 1999). The majority of practices involved sending home letters or flyers or inviting parents to an orientation meeting, practices that convey information to parents about kindergarten, but do little to build the "network of connections" between the home, school, and community that is necessary to support children during the transition to school.

Although transition practices are virtually universal, teachers reported encountering a number of barriers to the implementation of kindergarten transition practices (Pianta, Cox, Taylor & Early, 1999). Barriers endorsed by over a third of the teachers were that class lists were generated too late (56%), it required summer work without pay (47%), lack of a school transition plan (43%), takes too much time (37%), and no available funds (35%). Interestingly, teachers in urban, high-poverty, or high-minority schools also reported that class lists were generated too late, but were more likely to endorse of number of family-related barriers such as not being able to reach parents, that it is dangerous to visit children's homes, that parents do not bring the children to school and that the parents cannot read (Pianta, Cox, Taylor & Early, 1999). Clearly, there is a significant mismatch between the practices of schools and the needs of low-income families as reflected by these barriers. For example, if teachers believe that a number of parents cannot read, then arguably, sending home letters and flyers will not be very helpful to this population of parents. Furthermore, if another common practice is to talk with parents, but teachers report not being able to reach a large number of low-income parents, then this transition practice will be significantly less effective.

Despite the widespread implementation of transition practices, and the theoretical and political support for their use, until recently, there was no empirical evidence evaluating the effectiveness of transition practices at meeting the needs of children and families. Schulting, Malone and Dodge (2005) utilized nationally

representative data from the Early Childhood Longitudinal Study – Kindergarten Cohort (ECLS-K) to examine the impact of transition practices on parent involvement and children's academic outcomes during kindergarten. This study determined that transition practices have a modest but significant positive effect on parent-initiated involvement and children's academic outcomes at the end of kindergarten. The positive effects of transition practices on academic achievement were stronger for low- and low-middle-SES children than for higher-SES children. The predicted achievement scores of low-SES children offered seven transition practices were .21 standard deviations higher than the predicted achievement scores associated with zero transition practices. This finding is particularly striking given the linear relation that was identified between SES and the number of transition practices offered with low-SES children receiving the fewest transition practices. It is also noteworthy due to the fact that commonly employed transition practices are not tailored to meet the needs of low-income families (Pianta, Cox, Taylor & Early, 1999). Transition practices were also associated with increased parent-initiated involvement, particularly among middle- or moderately low-SES parents, and this involvement partially mediated the relation between transition practices and children's academic achievement. Very low-SES parents demonstrated low levels of parent-initiated involvement overall in spite of transition practices likely because these efforts did not address the potential barriers to involvement among this high-risk group, whereas the limited impact of transition practices on high-SES parents

was attributed to the fact that this population already demonstrated high levels of parent-initiated involvement and it was unlikely that transition practices would alter this level of involvement significantly. Overall, this study provides the strongest evidence to date that transition practices are associated with improved child outcomes during kindergarten, particularly for the low-income children least likely to receive them. In light of these findings, it can be hypothesized that if schools offered greater support to low-income children during the transition to school, rather than less, and designed practices that better met their needs, the positive effects on child outcomes and parent involvement would be even greater.

1.3.4 Home Visiting

One transition practice that addresses a number of the barriers to home-school collaboration and promotes the home-school relationship is home visiting conducted by kindergarten teachers at the beginning of the school year. Pianta and Walsh (1996) emphasize the importance of positive connections between home and school that begin with personal contacts prior to the kindergarten year. However, Christensen (1999) reports that "few schools have meaningful contact with parents before children enter kindergarten" (p.146).

Although the purpose of home visiting in actual practice may vary, especially if teachers are not trained, the purposes of home visiting from the perspective of the Integrated Model are: 1) For teachers to build a positive relationship with parents and

children at the beginning of the school year; 2) To reduce teachers' negative attributions of the family and child; 3) To reduce any culturally-based misunderstandings between the teacher and the family about school; 4) To enhance the teacher-child relationship by providing teachers with a greater understanding of the child's home environment and by providing the child with a sense that the teacher understands and cares about the child; 5) To increase parental involvement at the school by making the parent feel more comfortable with the teacher and more knowledgeable of school expectations; and 6) To increase parental involvement at home by helping parents' to understand better how they can help their child with academic or school-related activities. Home visits are especially effective at reaching disadvantaged parents who may not be able to easily visit the school building. It is also a particularly effective strategy for involving parents who do not feel comfortable visiting the school either because of a language barrier or previous negative experiences at school.

Although there are very few empirical studies of the impact of home visits on the kindergarten transition, Reglin (2002) found that 91.3% of the high-risk parents surveyed perceived that "home visits would help them better support their children's education and increase their involvement in the school." When high-risk parents were asked who should conduct the home visits, "78.8% responded that home visits by their children's teachers would be "very effective." Visits by principals or the school counselor were perceived by parents to be less effective than visits by teachers. Therefore, it appears that

home visits conducted by teachers prior to the school year may be a very effective practice for easing the transition to kindergarten for both children and their parents.

Although low-income families are more likely to receive generic and impersonal transition practices, one important exception to this pattern is the finding that teachers in high-poverty districts reported conducting home visits before and after the beginning of school more often than teachers in higher-income districts (Pianta, Cox, Taylor & Early, 1999). This is a promising finding; however, only 4% of kindergarten teachers in a nationally representative sample reported that they conduct home visits (Schulting, Malone & Dodge, 2005). Therefore, even if low-income children are more likely to receive a home visit, the likelihood that their teachers conduct home visits remains very small.

There is a great deal of anecdotal evidence shared by teachers who conduct home visits regarding the positive impact of such practices. For example, in the Sacramento City School District, teachers at all grade levels conduct home visits throughout the school year. They report that home visiting has led to higher rates of parental involvement, reduced student absences from school, fewer behavior problems and increased test scores (Furger, 2002). This anecdotal evidence, combined with Reglin's (2002) finding that high-risk parents believe home visits would be helpful, indicate that home visiting is a promising transition practice and that a more rigorous evaluation of this practice, using a randomized design is needed.

1.4 Hypotheses

This purpose of this study was to examine the impact of a novel home-visiting program, conducted as a kindergarten transition practice, on child, parent and teacher outcomes. The program was based on the empirical research and theoretical model described above and was developed and piloted over several years prior to being subjected to a randomized controlled trial. Teachers were randomly assigned to receive training to complete home visits (or not).

1.4.1 Child Outcomes

It was hypothesized that students whose teachers are assigned to receive intervention (called "intervention children") would demonstrate better academic and behavioral outcomes and develop a more positive relationship with the teacher than students whose teachers are assigned to the control condition (called "control children"). In order to preserve the exogenous quality of an experiment that allows one to make causal conclusions, outcomes were evaluated by an "intent-to-treat" analysis that incorporates both the completion of the home visit and the delivery of its content as the experimental intervention. The following specific hypotheses were tested:

1. Intervention children will receive higher academic ratings from teachers and parents, specifically regarding their academic achievement, academic motivation, work habits, academic potential and expected academic attainment.

2. Intervention children will receive higher ratings from teachers and parents regarding their social skills and conduct.
3. Intervention children will have a more positive relationship with the teacher characterized by lower levels of conflict and higher levels of warmth.
4. Intervention children will receive higher ratings from teachers and parents regarding their initial adjustment to kindergarten.

1.4.2 Parent Involvement Outcomes

It was hypothesized that parents whose children's teachers were randomly assigned to receive intervention (called "intervention parents"), as compared to parents whose children's teachers were randomly assigned not to receive intervention (called "control parents"), would have a more positive relationship with the kindergarten teacher, characterized by higher levels of warmth and comfort, and they will demonstrate higher levels of parent involvement at home and school. The following specific hypotheses were tested:

1. Intervention parents will feel more welcome at school and in the kindergarten classroom.
2. Intervention parents will have higher levels of involvement at school and at home, and they will place education higher on their list of priorities.
3. Intervention parents will have higher levels of parent-initiated contact.

4. Intervention parents will develop a more positive relationship with the teacher.
5. Intervention parents will report higher expectations for their child.
6. Intervention parents will be more likely to understand and share the school's academic expectations, and know how to support their child's success in school.
7. Intervention parents who speak a language other than English will report that it is less of a barrier to their ability to collaborate with the teacher than control parents.

1.4.3 Teacher Outcomes

It was hypothesized that teachers who were randomly assigned to receive intervention (called "intervention teachers") would have a more positive relationship with parents and students, make more positive attributions about parents, and have higher expectations for students than would teachers who were randomly assigned to serve as controls (called "control teachers"). The following specific hypotheses were tested:

1. Intervention teachers will feel more comfortable interacting with parents.
2. Intervention teachers will have a more positive relationship with parents and children.

3. Intervention teachers will perceive parents as placing a higher level of value on education.
4. Intervention teachers will make more positive attributions about why parents are less involved; specifically, they will mention barriers to parent involvement rather than attributing it to a lack of interest or priority on the part of the parents.
5. With regard to parents who speak a language other than English, teachers will report that the language barrier is less detrimental to their ability to collaborate with the parents than control teachers.
6. Intervention teachers will report higher expectations for their students' academic attainment.

1.4.4 Mediators

Next, it was hypothesized that the impact of home visiting on child outcomes will be mediated by parent-involvement and the teacher-child relationship. A significant predictor of academic success is parental involvement in the child's education, through communication and collaboration with the teacher, expression of interest in learning, and involvement at home to reinforce school achievement (Hill, 2001). Another important predictor of achievement is a positive relationship with the teacher (Hamre & Pianta, 2001; Pianta et al., 1995). Therefore, it was hypothesized that students who received a home visit will have better academic and behavioral outcomes during

kindergarten as a result of increased parent involvement and teacher-child relationship. Baron and Kenny's (1986) principals of mediation, as well as the more stringent Sobel test, were used to determine whether parent-involvement or teacher-child relationship quality mediates the relation between home visiting in the fall and children's academic and behavioral outcomes measured in the spring of the kindergarten year.

1.4.5 Moderators

Finally, because low-income children demonstrate the greatest difficulty during the kindergarten transition, have parents who are least involved in school, and have the poorest academic outcomes (Brooks-Gunn & Duncan, 1997; Pianta et al., 2002; Rimm-Kaufman et al., 2000), and because home visiting addresses the parental barriers to involvement and to establishing a positive home-school relationship faced primarily by low-income families (Pianta et al., 1999), it was hypothesized that home visiting would have a greater positive impact on the parent-teacher relationship, parent-involvement, and child outcomes of low-income children and parents.

2. Method

2.1 Pilot Study

The Home Visit Pilot Project was implemented from 2003-2006 at E. K. Powe Elementary School in Durham, NC. Each year, all five kindergarten teachers at E. K. Powe participated in the project conducting home visits for each of their incoming kindergarten students. The purpose of the pilot study was to: 1) Evaluate the feasibility of teachers conducting 15-20 home visits during the first six weeks of school; 2) Identify the type of training and support that teachers feel they need to conduct effective home visits; (3) Determine which measures are most useful in identifying the impact of the home visits on the parent-teacher relationship, teacher-child relationship; and (4) Obtain feedback from participating parents regarding their experience in the study and any suggestions they may have for improving the design or implementation of the program.

Although completing 15-20 home visits in the first six weeks of school is time-consuming and challenging, the teachers at E. K. Powe demonstrated that it is feasible. During the first year of the program, 53% of children received a home visit. In years two and three, improvements were made in training to help teachers complete more home visits. These improvements included paying translators $10 more per home visit ($25 instead of $15) to encourage bilingual individuals to assist with the home visits, and providing funding for a "scheduler" so teachers no longer had the time-consuming task of contacting all families to schedule the home visits. In years 2 and 3, respectively, 92%

and 96% of children received a home visit from their teacher. It was also demonstrated that new teachers are able to complete these home visits. In the third year of the project, three of the five kindergarten teachers were new to the school, but they were able to complete all visits in the designated time period.

Overall, the teachers, parents and principals involved with the Home Visit Pilot Project at E. K. Powe responded with positive feedback about their experiences. Child outcome data was not analyzed because the pilot study did not include a control group. At the conclusion of the pilot study, the larger, randomized, controlled trial of home visiting was initiated.

2.2 Randomized Trial Participants

2.2.1 Teachers

Kindergarten teachers were recruited in the spring and summer of 2006 with the goal of recruiting at least 40 teachers. A letter describing the study was mailed to each kindergarten teacher in the school district to solicit their involvement, contingent upon the approval of the principal. District approval had already been granted, and a letter was sent by a district administrator to all principals encouraging their involvement in the project. Teachers elected to participate in the study either individually or in school-based teams. Forty-four teachers from 18 schools signed up to participate in the study. All teachers were randomly assigned within schools to one of two groups: 1) the experimental or "home visit" group; or 2) the control group. If only one teacher from a

school elected to participate, that school was matched to another school with similar student demographics that also had only one participating teacher. Four schools had a single teacher participating, so two matched pairs were created and teachers were randomized within these matched pairs. Three additional teachers volunteered to participate; however, they submitted their registration forms after the deadline and after randomization had occurred, therefore, these three teachers were placed on the waiting list.

In mid-August, 2006, prior to the summer training meetings, three teachers from three different schools withdrew from the study. One teacher found out she was no longer teaching kindergarten, another teacher left Durham to become an assistant principal in another district, and the third teacher felt overwhelmed with the requirements of National Board Certification and decided she did not have the time to do home visiting. Three teachers from two different schools on the waiting list were randomly selected to fill these spots. Two of the teachers who withdrew left only one participating teacher at their respective schools and one of the waitlisted teachers was the only teacher participating in her school. Therefore, two of these schools were matched to one another and the third school joined a previously matched pair of schools based on demographic similarities in their student populations. Ultimately, 44 kindergarten teachers from 19 DPS elementary schools participated in this study.

Of the 44 teachers involved in the study, only one teacher was a first-year teacher, the remaining 43 teachers had been teaching from 2-35 years with an average of 14 years of teaching experience. Teachers implemented between 3-9 transition practices with an average of 5.84 transition practices across the 44 teachers; this included home visiting as a transition practice for teachers in the intervention group. Nineteen teachers (43%) were African American and the remaining 57% were European American (see Table 1).

Table 1: Demographic Statistics of All Participants

Variables	Fall (*N* = 928) Mean (SD)	Spring (*N* = 839) Mean (SD)
Students		
Free/Reduced Lunch	0.57 (0.50)	0.56 (0.50)
Home Language	0.28 (0.45)	0.27 (0.45)
Student Gender	0.49 (0.50)	0.49 (0.50)
Diagnostic Status	…	0.12 (0.32)
Minority Status	0.81 (0.39)	0.80 (0.40)
Teachers		
Teacher Race	0.43 (0.49)	0.44 (0.48)
Teacher Experience	14.31 (10.31)	14.79 (10.18)
Transition Practices	5.84 (1.22)	5.80 (1.18)

… indicates data that was not collected

2.2.2 Students

It was not necessary to recruit students or parents for participation in the home visit itself as this was done by the teachers when they scheduled each visit and was considered part of the intervention itself. Thus, the intervention was targeted toward teachers directly and toward parents and students indirectly. All students in classrooms

of participating teachers were included in data analyses based on teacher report. A sub-sample of parents were selected for interview and were included in analyses based on parent report (see Table 2).

Table 2: Randomized Trial Participants by Group

	Teachers (*N*) Fall / Spring	**Students (*N*) Fall / Spring**	**Sub-sample of Interviewed Parents (*n*)**
Home Visit Group	22 / 22	478 / 432	185
Control Group	22 / 21	450 / 407	163
Total Sample	44 / 43	928 / 839	348

In the fall of the kindergarten year, 44 teachers reported on all 928 students enrolled in their classes; 478 students were in home visit classrooms and 450 students were in control classrooms. As illustrated in Table 1, 57% of students qualified for free or reduced lunch, 81% were from minority backgrounds (47% African-American, 27% Latino, 19% White, and 7% Asian/Other), 28% were from non-English speaking families, and 49% were boys.

In the spring of the kindergarten year, teachers reported on 90.4% of students. One control teacher refused to complete the data collection interview, so the 20 students from this class are not included in the spring data. In addition, 69 other students were no longer eligible to participate in the study as they had left their original classroom; 46 students left home visit classrooms and 23 left control group classrooms. The students who left either moved to a different school or school district or were reassigned to a new

teacher to reduce unexpectedly large class sizes. Overall, 9.6% of students in the home visit group and 9.6% of students in the control group were not included in the spring data collection. Therefore, in the spring of the kindergarten year, 43 teachers reported on all 839 students in their classrooms who had been enrolled since the beginning of the school year. As depicted in Table 1, the demographics of participating students in the spring were practically identical to the demographic data of students participating in the fall. In the spring, 56% percent of students qualified for free or reduced lunch, 80% were from minority backgrounds (47% African-American, 25% Latino, 20% White, and 8% Asian/Other), 27% are from non-English speaking families, and 49% were boys.

The demographics of participating students by group are presented in Table 3. In both the fall and spring, students in home visiting classrooms were slightly more likely to be racial minorities, qualify for free and reduced lunch, and come from a non-English speaking home compared to students in the control group. Similar to the overall sample, there is very little difference between fall and spring demographics.

Table 3: Demographic Statistics of Students by Group

	Fall		**Spring**	
Variables	**Home Visit (*n* = 478) Mean (SD)**	**Control (*n* = 450) Mean (SD)**	**Home Visit (*n* = 450) Mean (SD)**	**Control (*n* = 407) Mean (SD)**
Free/Reduced Lunch	0.60 (0.49)	0.53 (0.50)	0.58 (0.49)	0.53 (0.50)
Home Language	0.31 (0.46)	0.26 (0.44)	0.30 (0.46)	0.25 (0.43)
Student Gender	0.48 (0.50)	0.50 (0.50)	0.48 (0.50)	0.50 (0.50)
Diagnostic Status	…	…	0.12 (0.33)	0.12 (0.32)
Minority Status	0.82 (0.38)	0.79 (0.41)	0.81 (0.39)	0.78 (0.41)

… indicates data that was not collected

2.2.3 Parents

Parents were recruited for participation in the parent-report data collection interviews conducted in the spring, 2007. Both intervention and control teachers asked the parents of all their students whether or not they would be willing to receive a call from a researcher regarding possible participation in a descriptive study. Approximately one third of parents from each classroom were then randomly selected for participation from among the parents who agreed to be contacted, with a minimum of six parents selected from each classroom, for a total of 316 selected parents. Of the selected parents, 215 or 68% of parents completed the phone interview; 106 parents were in the control group and 109 parents were in the home visit group. Among parents who did not complete the interview, 4% declined to be interviewed, 18% had an unknown number or no phone line, and the remaining parents were not successfully contacted. Despite the challenges encountered when contacting parents by phone, there were at least four completed parent interviews for all but two of the 44 classrooms.

During the final weeks of the school year, parent surveys were mailed to all parents in the kindergarten classrooms to increase the number of completed parent surveys. Eighteen more of the originally randomly selected parents completed surveys, 6 control parents and 12 home visit parents, for a total of 233 (73% of randomly selected parents). In addition, 115 parents who were not randomly selected also completed surveys, 51 control parents and 64 home visit parents. Therefore, a grand total of 348

parents completed the survey; 46.8% were from the control group and 53.2% from the home visit group (see Table 1). Fifty percent of the participating parents were of children qualifying for free or reduced lunch, 69% were from minority backgrounds, 22% were from non-English speaking homes, and 55% were parents of girls. As illustrated in Table 4, demographic statistics were virtually identical between home visit and control groups.

Table 4: Parent Participants in Spring Data Collection

	Total Parent Sample	**Home Visit Parents**	**Control Parents**
Randomly Selected (*n*)	233	121	112
Other Parents (*n*)	115	64	51
Total (*n*)	348	185	163
Percent of Total	100%	53.2%	46.8%
Student Demographics in Parent Reported Data			
Variable	**Total Sample Mean (SD)**	**Home Visit Mean (SD)**	**Control Mean (SD)**
Free/Reduced Lunch	0.50 (0.50)	0.51 (.50)	0.50 (.50)
Home Language	0.22 (0.42)	0.22 (.42)	0.23 (.42)
Student Gender	0.45 (0.50)	0.45 (.50)	0.45 (.50)
Diagnostic Status	0.13 (0.33)	0.12 (.33)	0.13 (.34)
Minority Status	0.69 (0.46)	0.69 (.46)	0.69 (.47)

2.3 Procedures

2.3.1 Teacher Training

Teachers who were randomly assigned to the intervention condition attended a four-hour training session in the summer of 2006, prior to beginning the home visits. During this training session, teachers learned about and discussed the following:

1. The purpose of conducting home visits;
2. Potential barriers to parental involvement and to the parent-teacher relationship, and ways that home visits may address these barriers; specific attention was paid to issues of teacher bias or stereotyping of families from different cultural backgrounds or socioeconomic levels;
3. How home visits may facilitate a smooth transition to kindergarten for students and parents;
4. How to schedule, prepare for and conduct a successful home visit;
5. How to handle potentially challenging situations that they may encounter when scheduling or conducting home visits;
6. Safety strategies to use during home visits;
7. How to schedule a translator or driver to accompany them on a visit should they feel these services are necessary;
8. How to maintain their relationship with families after the home visit;
9. The paperwork and surveys they would be asked to complete in the course of their participation with the Home Visit Project; and
10. Teachers were also reminded of the fact that they are required to report suspected child abuse or neglect.

2.3.2 Conducting Home Visits

Teachers in the intervention condition were asked to complete a 30-minute home visit for each student in their class prior to October 1, 2006. Parents were contacted by their child's kindergarten teacher or the home visit scheduler to set up a time for the home visit. The teacher then visited the parents and child in their home at the agreed upon time. If parents wanted to meet with the teacher, but they did not want to meet in their home, an alternative location was identified, such as a local community center, library, or restaurant. If parents chose not to meet with the teacher at all, teachers were encouraged to develop a relationship with these parents through written communication, phone contact, and by inviting the parent to participate in school events. However, teachers were instructed not to continue to request a home visit if the parents expressed that they did not want one.

The structure of the home visits was flexible to allow for the diverse needs of each family. However, the overarching goals of the home visit were as follows:

1. To develop a trusting and collaborative relationship with the parents and child;
2. To learn about the child and the family by listening to the parent as the expert;

3. To identify family strengths to draw upon later to support their individual child, or to support a class event (i.e. a parent from another country may volunteer to tell the class about their native country and language);
4. To learn about the parents' expectation for their child and for the teacher to briefly share his/her expectations for students with the parents;
5. To answer parents' questions and put them more at ease with the transition to a new school and to kindergarten;
6. To spend one-on-one time with the child (which is hard to accomplish during the regular school day) in order to get to know the child better, to make him/her more comfortable with the teacher and excited about school;
7. To gain a better understanding of the child's home environment and his/her access to academic materials and other resources;
8. To change parents' and teachers' assumptions about each other;
9. To increase parents' and teachers' level of comfort when working with each other;
10. To increase parents' understanding of the role(s) they can play in their child's education, and to encourage their involvement at home and/or school.

2.3.2.1 Compensation

Teachers were paid $40 for each home visit completed by October 15, 2006. Teachers also received an additional $200 bonus if they completed home visits for all

families by October 1, 2006. Parents were not paid for participating in the home visit, but they received $15 for completing the parent-report data-collection interview in the spring.

Support staff members include translators and drivers that accompanied teachers on home visits if they determined that such services were necessary. Drivers or other accompanying individuals were paid $15 per completed home visit. In response to teacher feedback from the pilot study, translators were paid $25 per completed home visit. Translators were paid slightly more due to: a) the difficulty in finding bilingual individuals to help with translation; b) they were responsible for calling to schedule the home visit, and c) because, unlike an accompanying person, translators were actively involved in conducting the entire home visit.

2.3.2.2 Home Visit Completion

During the fall, among the 478 students in the home visiting group, 467 students (98%) received a home visit by their kindergarten teacher as part of this study. Of the 11 students who did not receive a home visit, 10 (91%) qualified for free or reduced lunch, 7 students (64%) were African-American, and 4 students (36%) were Latino students from non-English speaking homes. Home visits were not completed for the following reasons: parent refusal/no response, parent cancellation, scheduling difficulties, or because the student enrolled in the classroom right before the home visit completion deadline. In addition, five of the 11 students who did not receive a visit were assigned to one teacher

who initially had 28 students and who exhibited declining interest in participating in the study throughout the school year. Therefore, given the challenge of conducting 28 home visits, it is unclear whether these five students were not visited due to parent or teacher preference.

Seventeen of the 22 teachers assigned to complete home visits (77%) received the $200 bonus for completing visits by October 1, 2006. All other visits were completed by October 15, 2006.

2.3.3 Data Collection

Data collection occurred four times during the school year: August, October, November, and April. In August, during the teacher training session, home visit teachers completed the consent form and teacher information form. Control teachers completed these documents during data collection meetings with a researcher. From August until October, home visit teachers completed a Home Visit Record Form to document the completion of each home visit. In October, home visit teachers participated in a group feedback session in which they discussed the questions contained in the Teacher Feedback Interview in addition to completing the Home Visit Feedback form individually at the end of the session.

In November, and again in April, all teachers completed a Parent Involvement Survey- Teacher Version and a Teacher Ratings of School Adjustment measure for each student. To reduce the data collection burden on teachers, a researcher met with each

teacher to collect his/her data individually using a grid format in which the teacher could verbally answer the same question for each child before moving on to the next question. Using this method, with only a few exceptions, teachers were able to complete the measures for all of their students in less than 90 minutes.

Given that parents were not contacted until the spring, and therefore parent permission was not yet granted at the time of the teacher interviews, the data collected from teachers in November and April did not include child names or information (such as birth date) that could be used to identify the child. Teachers were provided with a list of identification numbers and instructed to assign one to each of their students paired with the student's initials. During data collection, both teachers and researchers referred to all children by I.D. number or initials, but did not, at any time, refer to any child by name.

In April, randomly selected parents (as described above) were asked to complete the consent form, Family Information Form and Parent Involvement Survey – Parent Version, which take about 15-25 minutes to complete. All parent materials, including instruments, consent forms and letters were translated into Spanish and a bilingual researcher conducted data collection with Spanish-speaking families. All instruments are described in more detail below.

2.3.3.1 Informed Consent

A waiver of documentation of consent was granted by the Institutional Review Board (IRB) so researchers were allowed to contact parents and obtain their informed consent over the phone. This waiver allows parents the option of giving their verbal consent and completing the first questionnaire and research interview during the same phone call.

2.3.3.2 Measures

Demographic Data. Teachers completed the Teacher Information Form in which they were asked to report their gender, age, ethnicity, number of years teaching, number of years teaching kindergarten, number of years teaching at their current school, level of education, and number of transition practices they implement in their classrooms. Teachers also completed a demographic questionnaire about all students in which they anonymously reported each child's race, gender, free lunch status, home language and preschool experience. Parents completed the Family Information Form in which they were asked to report the following: child's age, gender, ethnicity, free/reduced lunch status, birth order, ages of siblings, parents' age, gender, ethnicity, education, and marital status.

The Home Visit Record Form. The Home Visit Record form was used by teachers to document each completed home visit and record date and time of the visit, participants, topics of discussion or activities engaged in during the visit, teacher

feelings about the visit, family strengths, what the teacher learned that may assist in their instruction of the child, and any identified barriers to parent involvement.

The Parent Involvement Survey: Teacher Version. This 20-item instrument was used to assess the amount of and type of contact between the teacher and parent, the teacher's comfort communicating with the parent, and the teacher's perception of the parent's involvement. This instrument included six subscales: parent-initiated contact, teacher-initiated parent contact, parent involvement in school activities, parent involvement at home, teacher perceptions of the extent to which parents value education, and the quality of the parent-teacher relationship. In the fall teachers rated parent involvement on a 1-5 scale, in the spring this scale was changed to a nine point scale from -4 to +4.

Ratings of School Performance: Teacher Version. This measure includes 13 items designed to assess the child's overall academic progress, behavior in school, relationships with peers, relationship with the kindergarten teacher, and initial adjustment to school. This measure also includes two items that ask about teacher expectations regarding the child's long-term academic potential and academic attainment. In the fall, teachers rated parent involvement on a 1-5 scale, in the spring, this scale was changed to a nine point scale from -4 to +4.

Home Visit Feedback Form. The Home Visit Feedback Form is a 12-item instrument to assess teachers' subjective experience conducting home visits and the

impact they feel these visits have had on their relationship with parents and students, comfort interacting with families, and ability to successfully meet the needs of the child in the classroom. This measure includes a 1-4 Likert rating scale.

Teacher Feedback Interview. This interview consists of 11 items that were asked of teachers during the group feedback session.

Teacher Attitude Survey. The Teacher Attitude Survey is a 36-item instrument to assess teachers' attitudes toward diverse student populations and parents using a nine point scale from -4 to +4. There are six subscales: relationships with children and families, comfort with parents, valuing parental contributions, high expectations, beliefs about home visiting, and responding to diverse families.

Parent Involvement Survey: Parent version. This is a 24- item measure that asks parents to report the amount and type of contact they have with the teacher, their interest and comfort talking with the teacher, and their involvement with the school and with their child's education during the past year. This instrument contains six subscales: parent-initiated contact, teacher-initiated parent contact, parent involvement in school activities, parent involvement at home, the value parents place on education and the quality of the parent-teacher relationship.

Ratings of School Performance: Parent Version. Like the teacher version of this measure, the parent version includes seven items designed to assess the child's overall academic progress, behavior, relationships with peers, and initial adjustment to school.

This measure also includes two items that ask about parent expectations regarding their child's long-term academic potential and academic attainment. This measure includes a 1-7 Likert rating scale.

3. Results

3.1 Analytical Strategy

Teacher- and parent-reported outcomes were examined separately. Intervention effects were tested with multilevel modeling. Due to the fact that children are nested within classrooms and classrooms within schools, children in the same classroom are more alike than children across different classrooms. Therefore, to determine the true relation between the home visit intervention and all measured outcomes, it was necessary to utilize hierarchical linear modeling, a method that takes nesting into account (Bijleveld & van der Kamp, 1998). Three-level models, estimated in PROC MIXED in SAS v.9.1, were used to account for the nesting of children within classrooms (i.e. teachers) and within schools (Raudenbush & Bryk, 2002). Children and parents were at level one. Teachers were at level two with the intervention condition randomized at this level. Schools were at level three. Teacher attitude and belief outcomes were analyzed using a two-level model because there were no parent or child-level outcomes in these data. For these two-level models, teachers were at level one and schools at level two.

Each set of models used to examine teacher-reported outcomes included covariates of child demographic factors (gender, minority status, home language, and free lunch status) and teacher demographic factors (teacher race and years of teaching experience), and also controlled for the total number of kindergarten transition practices

implemented by the teacher during the study year. Two-way interactions between home visiting and the demographic variables of gender, home language, minority status and free lunch status were included to determine if the effects of home visiting on child outcomes are moderated by these factors. Analysis of spring teacher-reported outcomes also included an additional covariate, a binary variable indicating whether or not students had any known cognitive, developmental, or behavioral diagnoses. Two-way interactions between home visiting and diagnosis were also included in the spring. The models used to examine parent-reported outcomes included the same covariates of child gender, minority status, home language, diagnosis, and free-lunch status as well as the interactions between home visiting and these demographic variables. However, teacher-level covariates of teacher race, experience and total transition practices were not included when analyzing parent-reported outcomes.

The inclusion of this full-range of child covariates (gender, free lunch, minority status, diagnosis, and free-lunch status) and their corresponding two-way interaction terms with home visiting status were necessary to examine potential moderating factors as well as to control for a possible third-variable effect. However, because this study was implemented to examine the effects of the home visiting intervention, main effects of these demographic covariates will not be discussed.

Table 5: Descriptive Statistics for All Teacher-Reported Spring Outcomes by Group

Variables	Home Visit Group (*n* = 432) Mean (SD)	Range	Control Group (*n* = 407) Mean (SD)	Range
Child Outcomes				
Academic Achievement	1.01 (2.04)	-4.00 – 4.00	0.97 (2.00)	-4.00 – 4.00
Academic Motivation	1.23 (1.99)	-4.00 – 4.00	1.15 (1.82)	-4.00 – 4.00
Social Skills	1.52 (1.87)	-4.00 – 4.00	1.30 (1.84)	-4.00 – 4.00
Work Habits	1.07 (2.13)	-4.00 – 4.00	0.77 (2.15)	-4.00 – 4.00
Conduct	1.30 (2.25)	-4.00 – 4.00	1.31 (2.08)	-4.00 – 4.00
Kindergarten Adjustment	3.63 (1.14)	1.00 – 5.00	3.55 (1.14)	1.00 – 5.00
Academic Potential	3.63 (1.12)	1.00 – 5.00	3.92 (1.10)	1.00 – 5.00
Academic Attainment	3.28 (1.12)	1.00 – 5.00	3.48 (1.17)	1.00 – 5.00
Relationship/Communication Outcomes				
Teacher-Child Rel. Warmth	3.05 (1.25)	-4.00 – 4.00	2.90 (1.27)	-4.00 – 4.00
Teacher-Child Rel. Conflict	-2.41 (2.50)	-4.00 – 4.00	-2.23 (2.57)	-4.00 – 4.00
Parent-Teacher Rel. Quality	3.48 (1.08)	-3.20 – 4.00	3.42 (1.12)	-2.40 – 4.00
Parent-Initiated Contact	9.37 (8.57)	0 – 40.00	10.36 (9.89)	0 – 40.00
Teacher-Initiated Contact	9.38 (9.69)	1.00 – 50.00	10.77 (12.26)	1.00 -50.00
Language Barrier	-1.67 (2.83)	-4.00 – 4.00	0.17 (2.84)	-4.00 – 4.00
Parent Involvement Outcomes				
Home Involvement	2.51 (1.78)	-4.00 – 4.00	2.48 (1.63)	-4.00 – 4.00
School Involvement	7.47 (5.57)	0 – 27.00	9.81 (7.94)	0 – 27.00
Invitations to School	14.76 (5.42)	7.00 – 35.00	21.95 (9.52)	8.00 –36.00
Accepted Invitations	0.58 (0.71)	0 – 8.33	0.50 (0.49)	0 – 4.88
Barriers to Involvement	1.68 (1.83)	0 – 9.00	1.16 (1.41)	0 – 7.00
Parent Value Education	3.31 (1.40)	-4.00 – 4.00	3.19 (1.46)	-4.00 – 4.00

Table 6: Descriptive Statistics for All Teacher- and Parent-Reported Spring Outcomes

	Fall: Teacher (*N* = 928)		Spring: Teacher (*N* = 839)		Spring: Parent (*n* = 348)	
Variables	**Mean (SD)**	**Range**	**Mean (SD)**	**Range**	**Mean (SD)**	**Range**
Child Outcomes						
Academic Achievement	2.74 (1.10)	1.00-5.00	0.99 (2.01)	-4.00 – 4.00	5.78 (1.18)	1.00 – 7.00
Academic Motivation	3.00 (0.99)	1.00-5.00	1.19 (1.91)	-4.00 – 4.00	5.94 (1.11)	2.00 – 7.00
Social Skills	3.18 (0.97)	1.00-5.00	1.42 (1.86)	-4.00 – 4.00	6.15 (1.13)	1.00 – 7.00
Work Habits	3.07 (1.19)	1.00-5.00	0.92 (2.14)	-4.00 – 4.00	…	…
Conduct	3.30 (1.15)	1.00-5.00	1.31 (2.17)	-4.00 – 4.00	5.70 (1.37)	1.00 – 7.00
Kindergarten Adjustment	3.57 (1.15)	1.00-5.00	3.59 (1.14)	1.00-5.00	4.23 (0.83)	1.00 – 5.00
Academic Potential	3.63 (1.16)	1.00-5.00	3.77 (1.12)	1.00-5.00	4.57 (0.80)	1.00 – 5.00
Academic Attainment	3.23 (1.17)	1.00-5.00	3.38 (1.15)	1.00-5.00	4.22 (0.86)	1.00 – 5.00
Relationship/Communication Outcomes						
Teacher-Child Rel. Warmth	4.37 (0.79)	1.00-5.00	2.98 (1.26)	-4.00 – 4.00	…	…
Teacher-Child Rel. Conflict	1.78 (1.30)	1.00-5.00	-2.32 (2.53)	-4.00 – 4.00	…	…
Parent-Teacher Rel. Quality	4.68 (0.60)	1.00-5.00	3.45 (1.10)	-3.20 – 4.00	6.50 (0.89)	1.60 – 7.00
Parent-Initiated Contact	2.37 (1.49)	0-5.00	9.86 (9.25)	0 – 40.00	11.07 (15.94)	0 – 65.00
Teacher-Initiated Contact	2.94 (1.40)	0-5.00	10.07 (11.05)	1.00 – 50.00	10.74 (14.88)	0 – 56.00
Language Barrier	2.49 (1.46)	1.00-5.00	-0.78 (2.98)	-4.00 – 4.00	2.84 (2.25)	1.00 – 7.00
Parent Involvement Outcomes						
Home Involvement	4.10 (0.99)	1.00-5.00	2.50 (1.71)	-4.00 – 4.00	5.88 (1.81)	0 – 11.00
School Involvement	3.62 (2.81)	0-11.00	8.62 (6.94)	0 – 27.00	16.69 (17.88)	0 – 70.00
Invitations to School	8.21 (4.29)	2.00-20.00	18.31 (8.52)	7.00 – 36.00	12.80 (9.06)	0 – 35.00
Accepted Invitations	0.49 (0.36)	0-2.20	0.54 (0.62)	0 – 8.33	1.16 (2.45)	0 – 23.33
Barriers to Involvement	0.92 (1.42)	0-8.00	1.43 (1.66)	0 – 9.00	2.16 (1.82)	0 – 10.00
Parental Discomfort	…	…	…	…	0.07 (0.31)	0 – 2.00
Parent Value Education	4.53 (0.85)	1.00-5.00	3.26 (1.43)	-4.00 – 4.00	6.71 (0.62)	4.00 – 7.00

… indicates data was not collected, Abbreviation: Rel = Relationship

Table 7: Intercorrelations Between Demographic Variables and All Spring Teacher-Reported Spring Outcomes

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Free/Reduced Lunch														
2. Home Language	.21***													
3. Student Gender	.02	.02												
4. Diagnostic Status	.11***	-.10**	.14***											
5. Minority Status	.46	.30***	.02	-.04										
6. Teacher Race	.19***	.05	.01	-.03	.26***									
7. Teacher Experience	.06***	-.01	-.04	.00	.09**	.20***								
8. Transition Practices	.00	.05	.00	-.03	.02	-.02	-.17							
9. Academic Achievement	-.36***	-.15***	-.16***	-.25***	-.21***	.00	.02	-.04						
10. Academic Motivation	-.24***	-.02	-.19***	-.19***	-.10**	.02	.12***	.01	.75***					
11. Social Skills	-.12***	.03	-.14***	-.19***	-.03	.09**	.18***	.02	.49***	.60***				
12. Work Habits	-.26***	.05	-.23***	-.26***	-.12***	.09**	.08*	-.03	.69***	.76***	.61***			
13. Conduct	-.21***	.16***	-.21***	-.19***	-.08*	.01	.07*	.03	.47***	.61***	.62***	.69***		
14 Kindergarten Adjustment	-.23***	-.08*	-.16***	-.18***	-.10**	.09**	-.04	-.10**	.44***	.41***	.44***	.50***	.46***	---

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

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
15. Academic Potential	-.37***	-.05	-.14***	-.26***	-.21***	-.05	.02	.01	.67***	.54***	.36***	.58***	.43***	.39***
16. Academic Attainment	-.50***	-.12***	-.13***	-.22***	-.27***	-.03	.03	-.05	.71***	.59***	.36***	.60***	.40***	.38***
17. Teacher-Child Warmth	-.08*	.08*	-.15***	-.06	-.03	.13***	.22***	-.07*	.28***	.33***	.43***	.38***	.48***	.32***
18. Teacher-Child Conflict	.17***	-.08*	.12***	.14***	.12***	.09**	.06	-.04	-.27***	-.34***	-.41***	-.44***	-.63***	-.41***
19. Parent-Tchr Rel. Quality	-.17***	.02	-.09**	-.03	-.08**	.11***	.11***	-.06	.25***	.25***	.29***	.28***	.30***	.27***
20. Parent-Initiated Contact	-.23***	-.16***	-.02	.05	-.30***	-.12***	.03	-.03	.15***	.07	.03	.04	-.03	-.01
21. Teacher-Initiated Contact	.02	-.17***	.05	.12***	-.09**	.13***	.05	-.22	-.02	-.09**	-.08*	-.13***	-.17***	-.15***
22. Language Barrier	.14*	.17**	.06	.00	-.04	-.19**	.11	.25***	-.40***	-.27***	-.22***	-.34***	-.31***	-.29***
23. Home Involvement	-.44***	-.07*	-.11**	-.15***	-.27***	-.06	.04	-.07*	.54***	.44***	.33***	.47***	.36***	.39***
24. School Involvement	-.44***	-.14***	.02	.00	-.46***	-.23***	.01	-.03	.20***	.07*	.04	.11***	.09**	.10**
25. Invitations to School	-.05	.00	.04	.08*	-.17***	-.18***	.18	-.08	-.09**	-.10**	-.08*	-.09**	-.01	-.14***
26. Accepted Invitations	-.33***	-.13***	-.02	-.05	-.32***	-.13***	-.03	-.03	.16***	.06	.04	.11**	.06	.14***
27. Barriers to Involvement	.31***	.17***	.17***	.03	.18***	.08*	.01	-.02	-.41***	-.32***	-.26***	-.28***	-.23***	-.29***
28. Parent Value Education	-.28***	-.09**	-.12***	-.10**	-.15***	-.03	.05	-.04	.44***	.31***	.28***	.36***	.25***	.27***

Abbreviations: Tchr = Teacher, Rel = Relationship

Variables	15	16	17	18	19	20	21	22	23	24	25	26	27
15. Academic Potential	---												
16. Academic Attainment	.78***												
17. Teacher-Child Warmth	.34***	.28***											
18. Teacher-Child Conflict	-.25***	-.23***	-.31***										
19. Parent-Tchr Rel. Quality	.22***	.24***	.32***	-.21***									
20. Parent-Initiated Contact	.13***	.17***	.07*	.07*	.07								
21. Teacher-Initiated Contact	-.03	.00	-.01	.21***	-.07	.38***							
22. Language Barrier	-.31***	-.37***	-.28***	.29***	-.31***	-.06	-.05						
23. Home Involvement	.58***	.61***	.33***	-.20***	.47***	.28***	-.02	-.32***					
24. School Involvement	.20***	.27***	.12***	-.10**	.17***	.58***	.14***	-.14*	.39***				
25. Invitations to School	.00	-.04	.04	.04	-.04	.30***	.32***	.29***	-.08*	.43***			
26. Accepted Invitations	.18***	.22***	.10***	-.11**	.13***	.34***	-.01	-.29***	.32***	.62***	-.12***		
27. Barriers to Involvement	-.33***	-.45***	-.10***	.20***	-.24***	-.14***	.04	.34***	-.49***	-.24***	.13***	-.21***	
28. Parent Value Education	.41***	.44***	.23***	-.13***	.46***	.18***	.03	-.29***	.70***	.26***	-.14***	.24***	-.46***

Abbreviations: Tchr = Teacher, Rel = Relationship

3.2 Descriptive Statistics

The means and standard deviations for all parent- and teacher-reported spring outcomes by group are presented in Table 5. The means and standard deviations for both fall and spring parent- and teacher-reported outcomes are depicted in Table 6. As illustrated in Tables 5 and 6, there were a broad range of scores on child outcome measures, parent involvement outcomes, levels of parent-teacher contact, and relationship outcomes. In addition, correlations among teacher and student demographic variables and all spring teacher-reported outcomes are included in Table 7. Child academic and behavioral outcomes were moderately correlated with parent-teacher and teacher-child relationship variables and parent involvement at home and negatively correlated with language barriers and other barriers to parent involvement.

3.3 The Effects of Home Visiting on Child Outcomes

The first set of multilevel models tested the effects of home visiting on eight child outcomes measured during the spring of the kindergarten year: academic achievement, academic motivation, academic work habits, social skills, conduct, kindergarten adjustment, academic potential, and expected academic attainment. Teachers reported on all eight of these child outcome variables. Parents also reported on these child outcomes with the exception of academic work habits, because most parents have limited direct experience with their child's work habits in the classroom. Therefore,

across both parent- and teacher-reported data, a total of 15 child outcome variables were examined.

3.3.1 Main Effects of Home Visiting on Child Outcomes

An examination of the 15 child outcome variables measured at the end of kindergarten revealed that home visiting had a marginally significant main effect on teacher-reported academic work habits, $b = 0.68$, $SE = 0.35$, $t(809) = 1.92$, $p < .055$ (see Table 8). There were no significant main effects of home visiting for the other teacher- and parent-reported child outcomes at the end of kindergarten, n.s.

Table 8: Hierarchical Linear Model of Spring Kindergarten Work Habits on Home Visit Status, Demographic Variables, and Interaction Terms

Predictor	Coefficient (SE)	t	df	*p* value
Intercept	1.97 (0.06)	3.06	14	.002
Home Visiting (HV)	0.68 (0.35)	1.92	809	.055
Free Lunch Status	-1.08 (0.22)	-5.03	809	.0001
Minority Status	-0.51 (0.27)	-1.87	809	.06
Home Language	-0.02 (0.23)	-0.09	809	.92
Child Gender	-0.45 (0.18)	-2.49	809	.01
Diagnostic Status	-1.51 (0.30)	-5.06	809	.0001
Teacher Race	0.55 (0.22)	2.47	809	.01
Teacher Experience	0.01 (0.01)	0.76	809	.45
Transition Practices	-0.03 (0.09)	-0.31	809	.76
Free Lunch x HV	-0.05 (0.30)	-0.18	809	.85
Minority x HV	-0.24 (0.39)	-0.63	809	.53
Language x HV	0.84 (0.32)	2.63	809	.01
Gender x HV	-0.73 (0.26)	-2.85	809	.005
Diagnosis x HV	0.34 (0.41)	0.84	809	.40

Abbreviation: HV = Home Visiting

3.3.1.1 Interaction Effects Between Home Visiting and Child Demographic Variables

3.3.1.1.1 Home Visiting x Gender Interaction Effects

There were significant home visiting by gender interaction effects across 7 teacher-reported child outcomes (see Table 9). In addition to the main effect of home visiting on academic work habits reported above, there was also a significant home visiting by gender interaction for this outcome, b = -0.73, SE = 0.26, $t(809)$ = -2.85, $p < .005$. After identifying this significant interaction, separate analyses for boys and girls revealed a significant positive effect of home visiting on the academic work habits of girls, b = 1.12, SE = 0.32, $t(809)$ = 3.47, $p < .0005$, but not for boys, $p < .2$. There was also a significant interaction between home visiting and gender on academic achievement, b = -0.59, SE = 0.23, $t(810)$ = -2.54, $p < .01$, and academic motivation, b = -0.57, SE = 0.21, $t(810)$ = -2.74, $p < .006$. An examination of each gender revealed significant positive effects of home visiting on the academic achievement, b = 0.67, SE = 0.30, $t(810)$ = 2.27, $p < .02$, and academic motivation, b = 0.80, SE = 0.33, $t(810)$ = 2.41, $p < .02$, of girls, but no significant differences for boys, n.s. Significant gender by home visiting interactions were also identified for conduct, b = -0.87, SE = 0.25, $t(809)$ = -3.50, $p < .0005$, and social skills, b = -0.54, SE = 0.20, $t(810)$ = -2.70, $p < .007$. Consistent with the other child outcomes, significant positive intervention effects were identified for the conduct, b = 0.79, SE =

0.37, $t(809) = 2.12$, $p < .03$, and social skills, $b = 0.78$, $SE = 0.34$, $t(810) = 2.27$, $p < .02$; of girls, but not for boys (see Figure 1).

Teacher-reported scores of children's adjustment to kindergarten also differed by gender, $b = -0.37$, $SE = 0.13$, $t(809) = -2.81$, $p < .005$. Girls in the home visiting group were rated by teachers as adjusting more successfully to kindergarten than girls in the control group. For boys, this relation went in the opposite direction; however, none of the mean differences for boys or girls were significant n.s. An examination of teacher ratings of academic potential also revealed a significant gender by home visiting interaction, $b = -0.32$, $SE = 0.12$, $t(810) = -2.62$, $p < .009$. Girls in the home visiting group were rated by teachers as having higher academic potential than girls in the control group. This pattern was reversed for boys; however, none of the mean differences for boys or girls was significant n.s. There were no significant home visiting by gender interaction effects on child outcomes reported by parents, n.s.

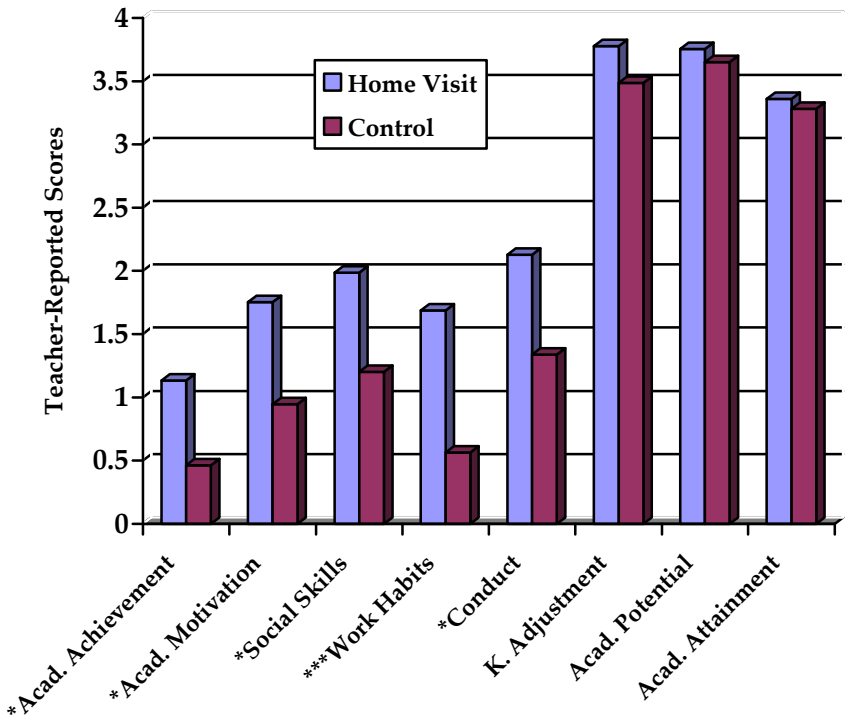

Figure 1: Model Adjusted Group Means: Spring Teacher-Reported Outcomes for Girls (* p < .05, ***p < .001).

Table 9: Model Adjusted Group Means for Spring Child Outcomes: Home Visiting x Gender Interaction Effects

	Girls		Boys			
	Home Visit	Control	Home Visit	Control	Interaction Effect	Main Effect of Intervention
Teacher-Reported Outcomes						
Academic Achievement	1.13*	0.46	0.39	0.30	$p < .01$	n.s.
Academic Motivation	1.75*	0.95	0.90	0.67	$p < .006$	n.s.
Social Skills	1.98*	1.20	1.32	1.08	$p < .007$	n.s.
Work Habits	1.69***	0.57	0.51	0.11	$p < .005$	$p < .055$
Conduct	2.13*	1.34	0.94	1.02	$p < .0005$	n.s.
Kindergarten Adjustment	3.78	3.49	3.25	3.35	$p < .005$	n.s.
Academic Potential	3.75	3.65	3.37	3.59	$p < .009$	n.s.
Academic Attainment	3.36	3.28	3.07	3.20	n.s.	n.s.
Parent-Reported Outcomes						
Academic Achievement	5.57	5.54	5.34	5.23	n.s.	n.s.
Academic Motivation	5.85	5.89	5.37	5.76	n.s.	n.s.
Social Skills	6.02	6.04	5.90	5.94	n.s.	n.s.
Conduct	5.36	5.69	5.28	5.10	n.s.	n.s.
Kindergarten Adjustment	4.11	4.28	3.88	4.14	n.s.	n.s.
Academic Potential	4.46	4.43	4.45	4.43	n.s.	n.s.
Academic Attainment	4.11	4.00	4.16	4.05	n.s.	n.s.

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

3.3.1.1.2 Home Visiting x Home Language Interaction Effects

Tests of teacher-reported child outcomes revealed significant interaction effects between home visiting and home language for academic motivation, $b = 0.63$, $SE = 0.27$, $t(810) = 2.37$, $p < .02$, and academic work habits, $b = 0.84$, $SE = 0.32$, $t(809) = 2.63$, $p < .009$ (see Table 10). Further examination of these differences revealed that home visiting had a significant positive effect on the academic motivation, $b = 0.83$, $SE = 0.38$, $t(810) = 2.21$, $p < .03$, and academic work habits, $b = 1.18$, $SE = 0.38$, $t(809) = 3.06$, $p < .002$, of children from non-English speaking homes (see Figure 2). Analysis of child conduct outcomes at the end of kindergarten also revealed a significant home visiting by language effect $b = 0.68$, $SE = 0.32$, $t(809) = 2.15$, $p < .03$. It was in the same direction as the previously described outcomes, with children from non-English speaking families in the home visit group having better conduct scores than children in the control group; however, this difference was not significant $p < .11$. There were no significant intervention effects on academic motivation, work habits or conduct among children from English-speaking homes, n.s. Like the students from non-English speaking homes, English speaking students in the home visit group also received higher academic motivation, work habit and conduct scores than control students, but these differences were not significant. In addition, there were no significant home visiting by language interaction effects on child outcomes reported by parents, n.s.

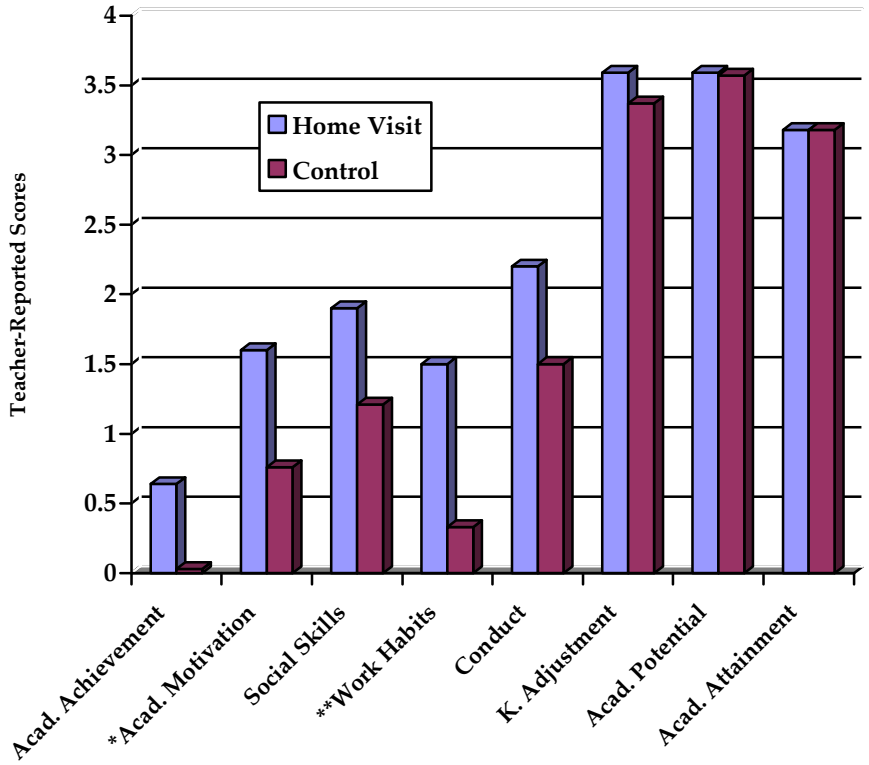

Figure 2: Model Adjusted Group Means: Spring Teacher-Reported Outcomes for Students from Non-English Speaking Homes (* $p < .05$, ** $p < .01$)

Table 10: Model Adjusted Group Means for Spring Child Outcomes: Home Visiting x Home Language Interaction Effects

	English		Non-English			
	Home Visit	Control	Home Visit	Control	Interaction Effect	Main Effect of Intervention
Teacher-Reported Outcomes						
Academic Achievement	0.88	0.74	0.64	0.03	n.s.	n.s.
Academic Motivation	1.06	0.86	1.60*	0.76	$p < .02$	n.s.
Social Skills	1.41	1.08	1.89	1.21	n.s.	n.s.
Work Habits	0.69	0.35	1.50**	0.33	$p < .009$	$p < .055$
Conduct	0.87	0.85	2.20	1.50	$p < .03$	n.s.
Kindergarten Adjustment	3.45	3.47	3.59	3.37	n.s.	n.s.
Academic Potential	3.54	3.67	3.59	3.57	n.s.	n.s.
Academic Attainment	3.25	3.35	3.18	3.18	n.s.	n.s.
Parent-Reported Outcomes						
Academic Achievement	5.51	5.43	5.39	5.34	n.s.	n.s.
Academic Motivation	5.54	5.90	5.68	5.76	n.s.	n.s.
Social Skills	5.78	6.05	6.15	5.94	n.s.	n.s.
Conduct	5.22	5.40	5.43	5.38	n.s.	n.s.
Kindergarten Adjustment	4.10	4.11	3.97	4.31	n.s.	n.s.
Academic Potential	4.51	4.50	4.40	4.35	n.s.	n.s.
Academic Attainment	4.19	4.12	4.08	3.93	n.s.	n.s.

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

3.3.1.1.3 Home Visiting x Minority Status Interaction Effects

Significant home visiting by minority status interaction effects were identified for two parent-reported child outcomes: academic motivation b = -0.70, SE = 0.32, t(316) = -2.20, p < .03, and academic achievement, b = -0.94, SE = 0.32, t(316) = -2.91, p < .004 (see Table 11). Parents reported that minority students in the control group displayed higher levels of academic motivation compared to minority students in the home visiting group b = -0.62, SE = 0.23, t(316) = -2.73, p < .007. The direction of these effects was reversed for white students. White students in the home visit group were rated as having higher academic motivation than white students in the control group; however, these differences were not significant, n.s. Similarly, parents reported that minority students in the control group had higher academic achievement scores than white students in the control group. This pattern of results was reversed for white students; however, none of these mean differences was significant ps > .09. There were no significant home visiting by minority interaction effects on child outcomes reported by teachers, n.s.

Table 11: Model Adjusted Group Means for Spring Child Outcomes: Home Visiting x Minority Status Interaction Effects

	Minority		Non-Minority			
	Home Visit	Control	Home Visit	Control	Interaction Effect	Main Effect of Intervention
Teacher-Reported Outcomes						
Academic Achievement	1.08	0.76	0.44	0.002	n.s.	n.s.
Academic Motivation	1.62	1.05	1.03	0.57	n.s.	n.s.
Social Skills	1.98	1.45	1.32	0.84	n.s.	n.s.
Work Habits	1.47	0.59	0.72	0.09	n.s.	$p < .055$
Conduct	1.89	1.34	1.18	1.02	n.s.	n.s.
Kindergarten Adjustment	3.60	3.54	3.44	3.30	n.s.	n.s.
Academic Potential	3.77	3.78	3.36	3.46	n.s.	n.s.
Academic Attainment	3.36	3.41	3.07	3.11	n.s.	n.s.
Parent-Reported Outcomes						
Academic Achievement	5.30	5.70	5.61	5.07	$p < .004$	n.s.
Academic Motivation	5.50	6.07**	5.72	5.59	$p < .03$	n.s.
Social Skills	5.97	6.08	5.96	5.90	n.s.	n.s.
Conduct	5.18	5.42	5.47	5.37	n.s.	n.s.
Kindergarten Adjustment	3.96	4.13	4.03	4.29	n.s.	n.s.
Academic Potential	4.39	4.49	4.52	4.37	n.s.	n.s.
Academic Attainment	4.20	4.15	4.06	3.90	n.s.	n.s.

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

3.4 Main Effects of Home Visiting on Teacher Attitudes and Beliefs

Teacher attitude and belief outcomes were analyzed using a set of two-level models in the spring. Of the six total attitude scales, there were significant positive main effects for home visiting for two scales: responding to diverse families, $b = 0.89$, $SE = 0.30$, $t(24) = 2.93$, $p < .007$, and positive relationships with children and families, $b = 0.58$, $SE = 0.26$, $t(24) = 2.20$, $p < .04$, and a marginally significant intervention effect for the valuing parental contributions scale, $b = 0.50$, $SE = 0.26$, $t(24) = 1.94$, $p < .06$ (see Table 12). The main effects of home visiting on the remaining three teacher attitude scales, 'beliefs about home visiting,' 'comfort with parents,' and 'high expectations' were not significant, n.s.

Table 12: Model Adjusted Group Means: Teacher Attitudes and Beliefs

Variables	Home Visit	Control	*p* value
Value Parent Contributions	3.00	2.57	$p < .06$
Resp. to Diverse Families	1.85	1.04	$p < .007$
Rel. with Children/Families	3.13	2.61	$p < .04$
Comfort with Parents	2.92	3.08	n.s.
High Expectations	2.16	1.99	n.s.
Value Home Visiting	3.42	3.11	n.s.

Abbreviations: Resp = Responding, Rel = Relationships

3.5 Intervention Effects on Potential Mediators

There are a number of potential mediators of the relation between home visiting and child outcomes at the end of kindergarten. The potential mediator variables include: child outcomes, parent involvement at home and school, as well as parent-teacher and

teacher-child relationship quality as reported by teachers in the fall. For clarity, spring results for parent involvement and relationship outcomes as reported by both parents and teachers will also be included in this section. However, parent involvement and relationship outcomes measured in the spring cannot be examined as potential mediators because they co-occur temporally with spring child outcomes.

3.5.1 Fall Child Outcomes

This set of models examined the effect of home visiting on teacher-reported child outcomes measured in the fall. Like the previous models, these models included covariates of child and teacher demographic factors and also controlled for the total number of kindergarten transition practices implemented by the teacher. Two-way interactions between home visiting and child demographic variables were also included.

There were no significant main effects of home visiting on child outcomes in the fall. However, results of theses models reveal significant home visiting by gender interaction for teacher-reported academic motivation, $b = -0.45$, $SE = 0.11$, $t(901) = -4.04$, $p < .0001$, with a significant positive intervention effect among girls academic motivation, $b = 0.36$, $SE = 0.16$, $t(901) = 2.32$, $p < .02$. There was no significant difference in academic motivation for boys, n.s.

Significant home visiting by gender interactions were also identified for the following teacher-reported child outcomes in the fall: academic achievement, $b = -0.27$,

SE = 0.12, *t*(20238) = -2.27, *p* < .02; classroom work habits, *b* = -0.35, *SE* = 0.14, *t*(901) = -2.55, *p* < .01; conduct, *b* = -0.27, *SE* = 0.13, *t*(901) = -2.05, *p* < .04; social skills, *b* = -0.22, *SE* = 0.11, *t*(901) = -2.03, *p* < .04; and expected academic attainment, *b* = -0.29, *SE* = 0.13, *t*(901) = -2.33, *p* < .02. The interaction effect between home visiting and gender for each of these variables is in the positive direction for girls, and negative direction for boys; however, none of these mean differences is significant, n.s. A significant interaction of home visiting by free lunch status was also identified for teacher-reported conduct, *b* = 0.34, *SE* = 0.16, *t*(901) = 2.16, *p* < .03, with home visiting effects trending in the positive direction for low-income children, and in the negative direction for more affluent children; however, these mean differences were not significant, n.s.

An examination of teacher ratings of academic potential also revealed a significant gender by home visiting interaction, *b* = -0.26, *SE* = 0.12, *t*(901) = -2.13, *p* < .03. In contrast to spring outcomes, girls in the control group were rated by teachers as having slightly higher academic potential than girls in the home visit group. This pattern was the same for boys; however, none of the mean differences for this variable were significant, n.s. Teacher ratings of expected academic attainment also revealed a significant gender by home visiting interaction *b* = -0.29, *SE* = 0.13, *t*(901) = -2.33, *p* < .02. Girls in the home visiting group were rated by teachers as having higher academic

potential than girls in the control group. This pattern was reversed for boys; however, none of the mean differences for boys or girls was significant, n.s.

3.6 Intervention Effects on Parent Involvement and Relationship Outcomes

The next set of multilevel models tested the effects of home visiting on parent involvement, as well as teacher-child and parent-teacher relationship outcomes as reported by both teachers and parents. Fall teacher-reported outcomes are considered potential mediators.

3.6.1 Teacher-Child Relationships

The effect of home visiting on teacher-child relationship quality as reported by teachers was also examined. Levels of warmth and levels of conflict in the teacher-child relationship were analyzed separately as previous research on teacher-child relationships in kindergarten suggests that positive and negative relationship factors may exert independent effects on child outcomes (Birch & Ladd, 1997; Hamre & Pianta, 2001). Analyses revealed a significant positive main effect for home visiting on levels of warmth in the teacher-child relationship in the spring, $b = 0.56$, $SE = 0.29$, $t(810) = 1.93$, $p < .05$ (see Table 13). In the fall there was a significant home visiting by gender interaction for teacher-child relationship warmth, $b = -0.18$, $SE = 0.08$, $t(901) = -2.31$, $p < .02$, with boys in the control group experiencing higher levels of warmth than intervention boys. This

same pattern was present for girls; however, none of these mean differences was statistically significant, n.s. There were no significant effects of home visiting on the levels of conflict in the teacher-child relationship in the fall or spring, n.s. Parents did not report on teacher-child relationships.

Table 13: Hierarchical Linear Model of Teacher-Child Relationship Warmth on Home Visit Status, Demographic Variables and Interaction Terms

Predictor	Coefficient (SE)	t	df	*p* value
Intercept	2.58 (0.69)	3.77	14	.002
Home Visiting (HV)	0.56 (0.29)	1.93	810	.05
Free Lunch Status	-0.14 (0.11)	-1.24	810	.21
Minority Status	-0.03 (0.14)	-0.24	810	.81
Home Language	0.17 (0.12)	1.38	810	.17
Child Gender	-0.22 (0.09)	-2.32	810	.02
Diagnostic Status	-0.15 (0.15)	-0.96	810	.33
Teacher Race	0.28 (0.25)	1.10	810	.27
Teacher Experience	0.03 (0.01)	2.29	810	.02
Transition Practices	-0.01 (0.10)	-0.10	810	.92
Free Lunch x HV	-0.20 (0.16)	-1.24	810	.21
Minority x HV	-0.19 (0.21)	-0.96	810	.34
Language x HV	0.13 (0.17)	0.79	810	.43
Gender x HV	-0.15 (0.13)	-1.16	810	.25
Diagnosis x HV	-0.02 (0.21)	-0.09	810	.93

Abbreviation: HV = Home Visiting

3.6.2 Parent Involvement at School

Teacher reports in the spring indicated that there was a significant main effect on the number of times parents visited the school with parents in the home visit group reportedly making fewer school visits than parents in the control group, b = -3.3, SE = 1.29, $t(793) = -2.52$, $p < .01$. According to teacher-reports, throughout the school year parents in the control group visited the school slightly more often than parents in the

home visiting group (11 times compared to 9 times). Relatedly, parents in the home visit group were also invited to school significantly less often than parents in the control group in both the fall, b = -3.06, SE = 1.13, t(901) = -2.71, p < .007, and spring, b = -5.10, SE = 2.11, t(793) = -2.42, p < .02. Control teachers invited parents to school an average of 22 times compared to 16 invitations by home visit teachers. However, in the fall, despite the less frequent invitations and school visits by home visit parents, parents in the home visiting group were significantly more likely to respond positively by visiting the school when invited, b = 0.19, SE = 0.07, t(901) = 2.64, p < .009. After controlling for demographic variables, parents in the home visit group accepted 61% of fall invitations to school, whereas parents in the control group visited the school less than half (48%) of the time. This difference did not remain significant in the spring, n.s. However, in contrast to the teacher reports, home visit and control parents did not report a significant difference in the number of times they were invited to school, visited the school or their rate of acceptance of school invitations, n.s.

3.6.3 Parent Involvement at Home

There was no main effect for home visiting on parent or teacher-reported parent involvement in the home. In the spring, there was a significant interaction between home visiting and student gender on teacher-reported parent involvement at home b = -0.43, SE = 0.19, t(810) = -2.19, p < .03. Teachers reported higher rates of parent

involvement at home among girls in the home visit group compared to girls in the control group. This effect went in the opposite direction for boys, but neither of these mean differences was statistically significant n.s. Parents reported a significant home visiting by diagnosis interaction, $b = 1.86$, $SE = 0.56$, $t(317) = 3.33$, $p < .001$, with parents of diagnosed children in the home visiting group reporting significantly higher levels of parent involvement in the home than parents of diagnosed children in the control group, $b = 1.68$, $SE = 0.56$, $t(317) = 3.02$, $p < .003$. There were no significant differences in parent involvement at home for children without a diagnosis, n.s.

3.6.4 Parent-Teacher Relationships and Communication

An examination of the frequency of parent-initiated contact indicated that there was no main effect for home visiting as reported by teachers. However, in the spring there was a significant interaction between home visiting and diagnosis on parent-initiated contact, $b = -3.66$, $SE = 1.77$, $t(793) = -2.07$, $p < .04$. Teachers reported that parents of diagnosed children in the control group contacting the teacher more than diagnosed children in the home visit group. The effect went in the opposite direction for children without diagnoses. These mean differences were not significant. A significant home visiting by diagnosis interaction was also reported by parents, $b = 16.94$, $SE = 5.03$, $t(314) = 3.36$, $p < .001$; however, the pattern of results was reversed with parents of diagnosed children in the home visit group contacting the teacher significantly more than parents

in the control group. This intervention effect among parents of diagnosed children was significant, $b = 13.38$, $SE = 5.03$, $t(314) = 2.66$, $p < .008$. An examination of the remaining parent-teacher relationship and communication outcomes indicated that there were no significant differences for teacher-initiated contact reported by parents or teachers, n.s. Additionally, there were no significant differences reported by parents or teachers on the quality of the parent-teacher relationship, n.s.

3.6.5 Barriers to Parent Involvement

A number of barriers to involvement and parent-teacher collaboration were examined. Home visiting was found to be a significant negative predictor of language barriers between teachers and parents with limited English proficiency, as reported by both teachers and parents. In the spring, both teachers, $b = -2.24$, $SE = 0.82$, $t(178) = -2.75$, $p < .007$, and limited English-proficient parents $b = -0.41$, $SE = 0.21$, $t(55) = -1.96$, $p < .055$, reported significantly less difficulty communicating and collaborating with one another due to a language barrier compared to parents and teachers in the control group. Parental discomfort at the school was another barrier to involvement examined in this study. Although there was no main effect of home visiting on levels of discomfort among parents, n.s., there were significant interaction effects with limited-English proficient parents, $b = -0.31$, $SE = 0.09$, $t(318) = -3.38$, $p < .0008$, parents of children with a diagnosis, $b = -0.28$, $SE = 0.10$, $t(318) = -2.88$, $p < .004$, and parents of children not on free

lunch b = -0.26, SE = 0.07, $t(318)$ = -3.68, $p < .001$ in the home visiting group were less likely to report discomfort at school as a barrier to their involvement than parents in the control group. There were no other significant differences in parent-reported barriers or in the total number of barriers to parent involvement identified by teachers in the fall or spring, n.s.

3.6.6 Parental Expectations and Value of Education

There was no main effect of home visiting on parents' expectations for their child's academic attainment or on the level of education they believed their child was capable of attaining, n.s. Relatedly, parents in the home visit group did not differ significantly from control parents on their awareness of the school's academic expectations, their agreement with those expectations or in their understanding of how to support their child's success in school, n.s.

An examination of teacher-reported parental value of education scores did not yield significant results in the fall or spring, n.s. Similarly, parent-reported scores did not differ significantly between the intervention and control group, n.s. In addition, parents in the home visit group did not differ significantly from control parents regarding the extent to which they felt welcome visiting their child's school or kindergarten classroom, or the extent to which they prioritized their child's education, n.s.

3.7 Mediation Analyses

A final set of multilevel models tested whether or not fall academic motivation levels mediated the relation between home visiting and spring child outcomes. Due to the fact that previous analyses of spring outcomes revealed significant home visiting effects only for girls, these mediation analyses were limited to girls. Although we hypothesized that relationship factors and/or parent involvement would mediate the relation between home visiting and child outcomes, there were no significant differences in these outcomes in the fall, therefore they were not examined as mediators. The effect of home visiting on teacher-child relationship warmth was significant in the spring; however, given that this outcome coincided temporally with the child outcomes being examined, teacher-child relationship warmth could not be analyzed as a mediator. Therefore, only fall academic motivation levels were examined as a possible mediator among girls.

Baron and Kenny's (1986) principles for examining mediation were implemented. For full mediation, criteria must be met at each of four steps, whereas partial mediation requires that criteria be met at only the first three steps (Kenny, Kashy, & Bolger, 1998). The first step requires that the predictor variable (home visiting) be significantly associated with the criterion variable(s). As reported previously (see Table 8), home visiting was found to be a statistically significant predictor of the following

spring outcomes for girls: academic achievement, academic work habits, peer relationships, and classroom conduct as reported by the teacher. The second step requires that the predictor variable also be significantly correlated with the potential mediating variable. As reported previously, home visiting was a statistically significant predictor of girls' academic motivation in the fall. To meet criteria for the third step, the criterion variable is regressed on both the potential mediating variable and the predictor variable to determine if the mediating variable is a significant predictor of the criterion variable(s) when controlling for the predictor variable. Criteria for step three were met for all spring outcomes. The potential mediating variable, fall academic motivation, was found to be a significant predictor of girls' academic achievement, $b = 1.02$, $SE = 0.06$, t (809) = 17.04, $p < .0001$; work habits, $b = 0.96$, $SE = 0.07$, t (808) = 14.20, $p < .0001$; social skills, $b = 0.67$, $SE = 0.57$, t (809) = 11.71, $p < .0001$; and classroom conduct, $b = 0.68$, $SE = 0.07$, t (808) = 9.51, $p < .0001$; when controlling for home visiting status. In the fourth and final step it is determined whether the total effect of home visiting on child outcomes is reduced when the potential mediator is included in the model. Home visiting was no longer a statistically significant predictor of academic achievement, $b = 0.15$, $SE = 0.16$, t (809) = 0.97, $p < .33$; social skills, $b = 0.27$, $SE = 0.17$, t (809) = 1.54, $p < .12$; or classroom conduct $b = 0.28$, $SE = 0.18$, t (808) = 1.52, $p < .13$; when fall academic motivation was included in the model. Therefore, it can be concluded that fall academic motivation fully

mediates the relation between home visiting and these spring outcomes for girls. With regard to academic work habits, home visiting did remain a statistically significant predictor of academic work habits with fall academic motivation in the model, $b = 0.38$, $SE = 0.16$, $t\ (808) = 2.42$, $p < .02$ but the effect of home visiting was reduced from 0.56 to 0.38; indicating that fall academic motivation is a partial mediator and accounts for 32% of the total effect of home visiting on academic work habits for girls in the spring. The Sobel test, a more rigorous test of mediation, also revealed that fall academic motivation was a statistically significant mediator of these four spring outcomes for girls: academic achievement, social skills, conduct, and classroom work habits, *ps* < *.02.*

3.8 Feedback from Participating Teachers

Feedback from teachers participating in the home visit group was overwhelmingly positive. The vast majority of home visit teachers reported little difficulty completing the home visits and believed that the compensation and support they received was adequate. Teachers reported that the home visits were enjoyable, provided useful information, and had a positive impact on their relationships with students and families. Table 14 provides means and standard deviations for each survey question completed by home visit teachers.

Table 14: Fall Teacher Feedback Survey Results

Survey Question	Home Visit Teacher Responses (N = 22) Mean (SD)	Range
How much difficulty did you have completing all home visits by the bonus deadline?	3.36 (1.00)	1.00 – 4.00
How much difficulty did you have completing all home visits by 10/15/06?	3.82 (0.50)	2.00 – 4.00
How useful were the home visits for helping you learn more about the child and family?	3.55 (0.80)	1.00 – 4.00
How useful was the information you learned during the home visits?	3.59 (0.59)	2.00 – 4.00
Describe the impact of home visits on your relationship with parents	3.68 (0.48)	3.00 – 4.00
How much more do you feel parents support your classroom efforts after the home visits?	3.41 (0.85)	1.00 – 4.00
How much more comfortable are you communicating with parents after the home visits?	3.68 (0.57)	2.00 – 4.00
Describe the impact of home visits on your relationship with students	3.77 (0.43)	3.00 – 4.00
Describe the impact of home visits on parental involvement	3.05 (0.72)	2.00 – 4.00
How enjoyable did you find the home visits?	3.82 (0.50)	2.00 – 4.00
Describe the adequacy of your compensation?	3.32 (0.48)	3.00 – 4.00
Describe the adequacy of support staff?	3.60 (0.50)	3.00 – 4.00
Describe the adequacy of the support provided by the research staff	3.47 (0.51)	3.00 – 4.00
Do you think you will conduct home visits again next year?	Yes: 19 Maybe: 2 Retiring: 1	

3.9 Feedback from Participating Parents

Feedback from parents who received a home visit was similarly positive. Table 15 provides means and standard deviations for each survey question completed by participating parents. As illustrated in Table 15, most parents found the home visits to be helpful and enjoyable and allowed them to feel more comfortable interacting with the kindergarten teacher. Most parents believed the home visits also helped their child to feel more comfortable with the teacher. While parents reported feeling more comfortable at school after the home visit, and that their child was more motivated and excited about school in addition to feeling more comfortable at school, these scores were notably lower.

Table 15: Feedback From Parents Receiving a Home Visit

	Home Visit Parent Responses (N = 170)	
Survey Item	**Mean (SD)**	**Range**
The teacher's home visit was helpful.	6.38 (1.14)	1.00 – 7.00
I enjoyed the teacher's home visit.	6.62 (0.82)	1.00 – 7.00
After the home visit, I felt more comfortable with the teacher.	6.38 (1.25)	1.00 – 7.00
After the home visit, I felt more comfortable visiting the elementary school.	5.98 (1.50)	1.00 – 7.00
After the home visit, my child felt more comfortable with the teacher.	6.38 (1.23)	1.00 – 7.00
After the home visit, my kindergarten child felt more comfortable at school.	6.18 (1.23)	1.00 – 7.00
After the home visit, my child felt more motivated and excited about school.	6.07 (1.32)	1.00 – 7.00

4. Discussion

This study is the first known randomized controlled trial to test the efficacy of teacher home visiting as a kindergarten transition practice. The purpose of this study was to examine the impact of teacher home visiting on teacher attitudes, home-school relations, and student outcomes during the kindergarten year. Using multilevel modeling that appropriately accounts for the nesting of students within classrooms and schools, we found that assignment to the home visiting program had a significant positive effect on teacher attitudes, teacher-child relationships, communication between teachers and non-English speaking parents, as well as a positive effect on a variety of child outcomes, particularly among girls and children from non-English speaking homes.

4.1 Home Visit Implementation

The first weeks of school are a very busy time for teachers, particularly kindergarten teachers charged with helping young students adjust to the behavioral and academic expectations of formal schooling. Therefore, given the time-consuming nature of home visits, an important first goal of this study was to establish the feasibility of home visiting as a kindergarten transition practice. Teachers who participated in the pilot study successfully conducted up to 20 home visits with a 96% completion rate overall. In the current study, despite the fact that teachers had larger classes with up to

28 students, and served a substantially high-risk student population, 98% of all targeted students successfully received a home visit by their kindergarten teacher. Remarkably, 17 of the 22 intervention teachers (77%) exceeded expectations by completing a home visit for all of their students two weeks prior to the deadline. Therefore, the first goal of this study was achieved and the feasibility of this intervention concept was amply demonstrated.

4.2 Teacher Attitudes and Beliefs

Another goal of this intervention was to improve teacher attitudes and beliefs about diverse children and families. Previous research indicates that cultural and linguistic differences can result in misunderstandings, stereotyping and distrust between teachers and minority families (Mapp, 1997). Furthermore, teacher attitudes toward low-income and minority children may have a negative impact on children's performance in school (Casteel, 2001; Cooper, 2003; Delpit, 1995; Entwisle & Alexander, 1999). The current study revealed that teachers who conducted home visits reported an increased understanding of the cultural differences and social barriers that may reduce parents' ability to be involved at school, and a greater willingness to reach-out to less-involved parents. Relatedly, home visit teachers also reported significantly higher levels of positive connection to and knowledge about their students and families. Differences in teacher attitudes about parental contributions approached significance with teachers

in the home visit group placing greater value on the positive contribution parents can make to their child's education.

4.3 Main Effects of Home Visiting on Teacher-Child Relationships and Child Outcomes

A primary goal of this study was to examine the impact of home visiting on teacher-child relationships and child outcomes during kindergarten. The importance of a positive teacher-child relationship cannot be overstated. Previous research has found the quality of the teacher-child relationship to be an important predictor of both academic and behavioral outcomes in kindergarten and the early grades (Birch & Ladd, 1997; Hamre & Pianta, 2001; Pianta et al., 1995), as well as behavioral outcomes through eighth grade (Hamre & Pianta, 2001). The current study found that home visiting had a significant positive main effect on the level of warmth in teacher-child relationships across all populations of students at the end of kindergarten. Teachers in the home visit group were more likely to report that they shared an affectionate, warm relationship with their students than teachers in the control group. This finding stands in contrast to previous studies in which teachers were more likely to report close relationships with girls and conflict-filled relationships with boys (Birch & Ladd, 1997; Hamre & Pianta, 2001). This suggests that home visiting may provide teachers with additional positive interactions with boys and their families, allowing teachers to develop positive relationships with boys at the same rate as girls.

Home visiting was also found to have a significant positive main effect on the academic work habits of students at the end of kindergarten. Students in the home visit group were rated by teachers as demonstrating greater ability to remain on task and get their school work done independently. Over a third of kindergarten teachers surveyed by Rimm-Kauffman et al. (2000) reported that half their students or more had trouble following directions and working independently; therefore, a positive association between home visiting and improved academic work habits among students is an important finding. Furthermore, the fact that this study found positive intervention effects for both teacher-child relationship warmth and academic work habits is consistent with Hamre and Pianta's (2001) finding that teacher-child relationship quality in kindergarten predicts positive work habits throughout elementary school. However, it is important to note that in this current study, relationship warmth co-occurred with positive academic work habits; therefore, relationship warmth could not be examined as a potential mediator of the effect between home visiting and academic work habits in kindergarten.

4.4 The Effects of Home Visiting on Girls

Overall, the students who experienced the most significant benefits from kindergarten home visiting were girls. Girls in the home visit group demonstrated a number of positive outcomes including: improved academic achievement, academic

motivation, academic work habits, social skills, and conduct as reported by teachers at the end of kindergarten. The effect of home visiting on girls' academic achievement, social skills and conduct was completely mediated by an intervening effect on academic motivation during the fall. The effect of home visiting on girls academic work habits was partially mediated by academic motivation in the fall. These findings suggest that after receiving a home visit from their teacher, girls became more motivated and excited about school which, in turn, led to improved academic and behavioral outcomes at the end of kindergarten.

Although there were a number of positive outcomes for girls in the home visit group, there were no significant effects of home visiting on the academic or behavioral outcomes of boys. Positive intervention outcomes for girls but not boys is consistent with other early intervention studies including the Perry Preschool Project, Abecedarian, and Early Training Project; three well-known and well-regarded preschool intervention programs targeting at-risk children prior to school entry. A recent re-analysis of data from these three preschool intervention studies revealed positive long-term effects for girls, but no consistently positive effects for boys (Anderson, 2005). In addition, the STARS program, a multi-pronged kindergarten transition intervention, also demonstrated positive effects for girls, but not for boys (Dunning et al., in press). The question becomes, why? Why aren't boys experiencing the same benefits as girls from

participation in the Kindergarten Home Visit Project and other early intervention programs?

One possible explanation for the positive effects of home visiting on girls but not boys, is a differential impact of teacher-child relationship quality on boys and girls. Hamre and Pianta (2001) found that the level of closeness between kindergarten teachers and girls was found to predict better academic works habits and conduct throughout elementary school, but interestingly, greater closeness between teachers and boys did not predict improved outcomes for boys. These findings seem to suggest that teacher-child relationship quality may confer greater benefits for girls than boys. This explanation may be particularly applicable to the present study because, despite the fact that teachers in the home visit group reported greater levels of warmth in their relationships with both girls *and* boys compared to teachers in the control group, only girls in the home visit group demonstrated positive outcomes at the end of kindergarten.

Based on both developmental theory and prior empirical evidence, it seems plausible that the higher levels of warmth in teacher-child relationships within the home visiting group are related to girls' positive outcomes in the spring. However, as stated previously, it was not possible to test this mediating effect in the current study as mediation analyses require that the mediating variable precede the outcome variable temporally, but the positive effect of home visiting on teacher-child relationship warmth

was not evident until the spring. Therefore, the present study does not find evidence of a mediating effect of teacher-child relationship quality on child outcomes, although this should be examined in future studies of home visiting.

4.5 The Effects of Home Visiting on Non-English Speaking Children and Families

Among non-English speaking parents, a major obstacle to parent involvement and home-school collaboration is the language barrier. Understandably, parents who are not proficient in English feel less comfortable at the school or communicating with the teacher. In addition, immigrant parents often do not have experience with the American education system and therefore are unaware of the ways they are expected to be involved to support their child's academic success (Moles, 1993).

Consistent with our hypothesis, children and families from non-English speaking homes experienced significant benefits from home visiting. In the spring, both teachers and non-English speaking parents in the home visit group reported that the language barrier had less of a negative effect on home-school collaboration than control group participants. One explanation for this finding is that after the home visit, which typically involved a translator, non-English speaking parents had a better understanding of school practices and the role they were expected to play in their child's education, leading to easier home-school collaboration. Anecdotally, teachers reported that translated visits lasted much longer both because of the translation, but also because

non-English speaking parents had many more questions for the teacher about school policies, practices and parent involvement opportunities, than English-speaking parents. Therefore, it is plausible that it was easier for non-English speaking parents in the home visit group to effectively collaborate with the teacher, in spite of the language barrier.

Another possible explanation for this outcome is that parents and teachers were more comfortable navigating the challenges inherent in speaking different languages after the home visit. Due to the assistance of translators, parents and teachers were able to establish a positive relationship and a higher level of comfort with each other in their native languages. Then, throughout the year, when translators were not always available, perhaps parents and teachers were more willing to engage in the potentially embarrassing antics necessary to communicate across languages – including gesturing, drawing, or poorly pronounced and grammatically incorrect speech in the second language, given that they had already established a positive relationship in their native languages during the home visit.

Children from non-English speaking homes in the home visit group also demonstrated higher academic motivation and better academic work habits than control students at the end of kindergarten, perhaps for reasons similar to their parents. Children from non-English speaking homes enter kindergarten with varying levels of English proficiency. Like their parents, they may be reluctant to participate and feel less

motivated at school if they are not able to communicate with their peers and teacher. This study suggests that home visiting benefits this population of students by increasing their motivation in school, as well as their work habits, important outcomes for students at greater risk of a difficult transition to kindergarten.

4.6 The Effects of Home Visiting on Parent Outcomes

Contrary to our hypotheses, home visiting did not have a significant effect on parent-teacher relationships, parent-teacher communication, parental involvement at home or on parental value of education as rated by parents and teachers. However, according to teacher-reports, throughout the school year parents in the control group visited the school slightly more often than parents in the home visiting group (11 times compared to 9 times), perhaps due to the fact that control parents also received more invitations to the school than home visit parents throughout the year. Control teachers invited parents to school an average of 22 times compared to 16 invitations by home visit teachers.

It is possible that there was a higher number of invitations and school visits in the control group in an effort to build a positive home-school relationship, whereas home visit teachers had already established a positive connection with each family by conducting a home visit during the first weeks of school. Therefore, perhaps home visit teachers felt it less necessary to host numerous parent involvement events to get to

know parents and involve them in their child's education. Another noteworthy finding is that, despite the less frequent invitations and school visits, in the fall, home visit parents were more likely to respond positively by visiting the school when they were invited. Home visit parents accepted 61% of invitations to visit the school compared to 48% among control parents.

Overall, there were very few significant results among parent-reported outcomes. For example, the significant positive effects on child outcomes for girls and children from non-English speaking home were not present in the parent-reported data. This can be explained in two ways: a) the parent data was more biased as it only included data from parents willing to be interviewed or complete a mail-in survey, whereas teacher data included outcomes for each and every child in their classroom; and b) parents are likely less accurate reporters of children's school outcomes than the teachers, since the parents have very limited opportunities to directly observe their child's school performance.

4.7 Low-Income Children and Families

Home visiting was not found to confer greater benefits among low-income children and families as hypothesized. In a previous study (Schulting et al., 2005), we found that the positive effects of kindergarten transition practices were strongest among average or low-income families, compared to more affluent families or those in the

lowest income group. We hypothesized that home visiting would better address the diverse needs and challenges of low-income families with regard to parent-involvement, home-school relations, and supporting students' academic success.

There are two possible reasons our hypotheses about the benefits of home visiting among low-income families were not supported in this study. First, it is possible that a single 30-minute home visit from the kindergarten teacher could not address the substantial barriers to parental involvement, home-school relations, and student achievement experienced by low-income families. Or, perhaps, similar to our previous study of kindergarten transitions (Schulting et al., 2005), home visiting had the greatest positive effect on families of moderately low to average socioeconomic status, but the intervention could not address the needs of those families in the lowest income group. Since this study utilized free-lunch status as a proxy for family income, it was not possible to differentiate between low-income and extremely low-income families. Therefore, we cannot examine the heterogeneity of outcomes that might exist between these two groups of low-income families.

4.8 Limitations and Future Directions

To our knowledge, this is the first randomized, controlled trial of home visiting as a kindergarten transition practice. There is substantial theoretical support for the practice of home visiting during the kindergarten transition (Pianta, 1999); however,

until now there was no empirical evidence linking home visiting to improved child, family, and teacher outcomes. A significant strength of this study is its design as a randomized controlled trial. In addition, the participation of 44 teachers and 928 families allowed for sufficient statistical power to test our hypotheses and to examine the heterogeneity of results across subgroups of children. Furthermore, the implementation of home visiting was extremely high, with 98% of families in the intervention group receiving a home visit from the kindergarten teacher.

However, it is important to note the limitations of this study. These limitations include: a) limited data on family income, reducing the specificity of our conclusions about the impact of home visiting across different socioeconomic groups; b) only a subset of parents completed measures reducing the generalizability of the parent-reported results; and c) data was not collected directly from children, limiting our ability to examine school liking or children's perceptions of the home visit experience. Future studies of home visiting should address these limitations, as well as further examine the reasons boys did not experience the same benefits of home visiting as girls.

4.9 Conclusions

The Kindergarten Home Visit Project was a rigorous study of home visiting as a kindergarten transition practice, and the findings have significant implications for the policies and practices of schools. Overall, home visits by the kindergarten teacher during

the transition to school resulted in a variety of positive outcomes, including increased warmth in the relationship between teachers and children, and improved academic work habits for children during kindergarten. A number of positive academic and behavioral outcomes were also demonstrated among girls and non-English speaking children and parents. Teachers also reported improved attitudes and beliefs toward diverse families, a stronger connection to students and their families, and a greater appreciation of parental contributions. Results of this study suggest that kindergarten home visiting is beneficial to teachers, students and families and should be continued and expanded as a kindergarten transition practice in the schools.

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Biography

Amy Schulting was born and raised in Fargo, North Dakota. Amy graduated from Northwestern University in 1995 and joined Teach For America, the national teacher corps that places recent college graduates as teachers in under-resourced public schools throughout the country. Amy was a second-grade bilingual teacher in Houston, Texas for two years and then worked for Teach For America as a School Director and Regional Program Director. In 1998, she moved to Okinawa, Japan to work as an Assistant Language Teacher in two Japanese public high schools as a member of the JET (Japan Exchange and Teaching) Program. Upon her return to the United States, Amy continued her career in education in Virginia, teaching middle school Spanish, first grade boys, and earning a Masters degree in education administration at the University of Virginia. Amy's passion for improving the educational and mental health outcomes of low-income children inspired her to pursue a Ph.D. in clinical child psychology from Duke University under the mentorship of Dr. Kenneth Dodge. While at Duke University Amy was awarded the Spencer Foundation Fellowship, Sulzberger Social Policy Fellowship, and Center for Developmental Science Pre-Doctoral Fellowship.