

School-Family Partnership and Early Learning:
The Role of School Outreach and Family Involvement
in Preschoolers' Literacy and Learning-related Social Skills

by

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For Cheri and Imogene

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ABSTRACT

In the effort to promote the preschool literacy and learning-related skills that later support reading, one promising resource is school-family partnership. Yet, in many ways, it remains under-explored and -exploited. This dissertation addressed two central research questions. First, what are the nature, extent, and variability of school-family partnership practices in preschool? And second, how are these practices related to early literacy and learning-related social skills?

Study 1, *School-Family Partnership and Early Learning in Head Start Preschools*, examined data from 800 children participating in the Family and Child Experiences Survey during Head Start (preschool) and kindergarten. Analyses revealed variability in the nature and frequency of partnership practices by both families and educators. Further, vocabulary learning in Head Start was related to family book reading and in-school volunteering, while cooperative/compliant behavior was inversely associated with parent volunteering. As for school outreach, encouragement of family book reading by Head Start was associated with children's decoding knowledge but inversely related to the frequency of families' shared reading at home. Information from Head Start about child development and resources for family wellbeing were positively linked to children's approaches to learning. Finally, invitations by Head Start for in-school involvement predicted family volunteering. Longitudinal models found that, in general, these effects were gone by the end of kindergarten.

Study 2, *A Closer Look at School-Family Partnership and Early Learning in Socioeconomically Diverse Preschools*, focused specifically on the critical preschool year, gathering data on the frequency and skill focus of a wider range of partnership practices among 133 preschool families and 33 teachers, and assessing associations between these practices and a larger collection of literacy and social skills. Analyses again found variability in family involvement and teacher outreach, with a generally low frequency of each. Nevertheless, families' at-home involvement was positively related to children's self-control, responsibility, and cooperation but inversely related to their sound awareness and vocabulary learning. In-school involvement was positively associated with assertiveness. Parents' communication with the school was positively linked to alphabet and vocabulary learning. Finally, teacher outreach was inversely related to self-control. As in Study 1, teacher invitations for and family engagement in in-school involvement were linked.

Taken together, findings from these studies reveal variable but relatively infrequent school-family partnership practices among preschool parents and educators, as well as mixed associations between these practices and children's school readiness skills. Remaining questions about the precise nature of this construct in American preschools (i.e., what happens and why) and the theoretical and methodological issues of import for future research are discussed.

CHAPTER I:
THE IMPORT OF EARLY LITERACY
AND LEARNING-RELATED SOCIAL SKILLS
AND THE CONTRIBUTIONS OF SCHOOL-FAMILY PARTNERSHIP

Among the primary challenges facing American education today is the estimated 25 to 35% of the general population, and roughly 50% of children from low-income and/or African-American and Hispanic backgrounds, that fail to meet the national objective of “basic-proficiency” reading by fourth grade (NCES, 2005). These non-fluent readers are at substantially higher risk for subsequent reading difficulty, low academic achievement, and even school drop out (Alexander, Entwisle, & Horsey, 1997; Entwisle, Alexander, & Olson, 2005). The beginnings of this fourth-grade gap are apparent many years prior. As early as preschool, children can begin to acquire the knowledge of letters and sounds which will later help them to decode print, as well as the vocabulary and general knowledge that will facilitate meaning-making (Bowman, Donovan, & Burns, 2001; Teale & Sulzby, 1986). At the same time, children can develop intra- and inter-personal learning-related social skills that help them take advantage of opportunities at home and school to learn about code- and meaning-focused skills. This learning is essential for reading but difficult for most to master, and much variability in early literacy and learning-related social skills is apparent by kindergarten, with children from low-SES and ethnic-minority backgrounds already falling behind (Lee & Burkam, 2002). Thus one

part of the solution to the problem of reading failure in America is likely rooted in effective early literacy instruction for young children during the school transition period.

One potentially promising but little-researched solution is partnership between schools and families during the early childhood years. School-family partnership can be defined as the set of beliefs and behaviors that family members and educators employ to share ideas and resources about children's learning and development, bridging the gap between the home and the school (Epstein, 1995, 2001c). Most often studied are parents' partnership practices, which fall into three dimensions: those used at home, those used in school, and those that involve personal communication with teachers or other school personnel (Fantuzzo, McWayne, Perry, & Childes, 2004; Fantuzzo, Tighe, & Childes, 2000). However, teachers and other school officials, such as principals or preschool program directors, might also initiate partnership practices; little research has yet addressed this school outreach half of the school-family partnership equation.

To build on the extant literature and address issues that remain unclear, this dissertation explored the nature and extent of both parents' and educators' partnership efforts, as well as the relations between these partnership practices and children's emergent literacy and learning-related skills across the transition to school (from preschool to kindergarten). This introductory chapter will first discuss the specific literacy and social skills involved in reading that school-family partnership practices might address. Second, models of school-family partnership currently under investigation in the research literature are presented. Finally, remaining questions about how families and teachers of preschool children implement school-family partnership practices and how these behaviors are linked to critical early child skills are detailed.

ISSUES THAT SCHOOL-FAMILY PARTNERSHIPS MIGHT ADDRESS:

CHILD SKILLS INVOLVED IN READING

Reading is a complex endeavor that, unlike mastering spoken language, does not come naturally to most children (Rayner, Foorman, Perfetti, Pesetsky, & Seidenberg, 2001). Instead, reading involves the coordination of multiple skills into two umbrella process: decoding, or matching letters to the sounds they represent and then sounding out words; and comprehension or meaning-making, which requires understanding decoded words and phrases (Gough, Ehri, & Treiman, 1992). In each of these two central tasks, children must weave together numerous processes. For example, to decode a word such as *bat*, a child must recognize the first symbol as letter *b*, and then recall the sound (or sounds) that this particular letter can make in a word. Holding that sound in working memory, the child proceeds to the next letter, *a*, and recalls the associated sound. He then goes on the third. Finally, he combines these sounds together to make one entire word. In this way, a beginning reader proceeds deliberately through a word; with practice, however, much of this taxing decoding process becomes automated so that expert readers can simply recognize high-frequency words by sight. Finally, once the printed word has been decoded – or translated into a spoken word – the child must recall the meaning of this word. This meaning is also held in working memory while the meanings of other words in the phrase, sentence, and ultimately the passage are determined.

This is a particularly tricky endeavor in the orthographically deep language of English. Even simple words like *cat*, for example, are challenging, as the letter *c* can represent multiple sounds, depending upon its position in the word and the other letters that are present in that word. Moreover, once decoded, many English words stand for

multiple meanings. The word *bat*, for example, might refer to an animal, a piece of sports equipment, or the act of using that equipment, among other possibilities. Even amid this complexity, children are generally expected to master these skills in a short time. Formal reading instruction typically begins in first grade, although sometimes in kindergarten. This explicit instruction often ends in grade four, at which point children are expected to use their reading skills to extract content from textbooks and other materials. Thus children who cannot decode and comprehend are at a two-fold loss, as they do not improve their flagging literacy skills yet also begin to fall behind in content. Although time- and resource-intensive curricula such as Open Court and Success for All (Borman et al., 2005; Rosenshine, 2002; Skindrud & Gersten, 2006), as well as supplementary programs including Reading Recovery (Schwartz, 2005), have demonstrated success in remediating reading difficulty for some struggling early readers, these programs generally require substantial investments from districts and individual schools and are thus not available to all. Instead, as an alternative to remediation, attention has recently turned to prevention during the school transition period, a time in which strong early literacy preparation for young children might reduce later reading difficulty.

Emergent Literacy Skills

For the most part, children do not develop and weave together these decoding and meaning-making skills in a sudden burst of insight. Rather, emergent literacy theory (Teale & Sulzby, 1986) suggests that these decoding and comprehension skills coalesce slowly, beginning as early as the preschool years. Symbol-sound correspondence is at the heart of decoding, and children can start to tackle the first piece of this challenge, which involves recognizing letters of the alphabet, as young as three years of age

(Schickendanz, 1999). Children may require several years to master this paired-associates task involving 52 sets of letters and related names. Moreover, as this is quite a challenging task, frequent guided practice is necessary. Recent recognition of both the necessity and the demands of letter-learning have engendered new policies in preschool programs such as Head Start which specify that children should enter kindergarten knowing no fewer than 10 upper- and lower-case letters of the alphabet. Most children have learned all 52 letters by first grade, at the age of 5 or 6 years (Paris, 2005).

Second, although young children are generally not able to master the specific phonics skills involved in matching letter forms to their sounds, they can lay the groundwork for these sophisticated skills by developing phonemic sensitivity, or the capacity to hear and manipulate the sounds in words (Goswami, 2001; Wasik, 2001). As young as three years of age, children can learn to attend to the sounds in their environment, including barking dogs and rustling leaves; this fundamental skill prepares them to later discern the individual sounds within words. To this end, preschoolers can learn to detect and then produce similarities in the rimes (i.e., ending sounds) of words, and subsequently in the onsets (i.e., beginning sounds) of words. Finally, young children can begin to master syllabification, or the separation of words into their component syllables. Taken together, these phonemic and phonological skills prepare children to benefit from later instruction in sound-symbol correspondence, which is central to understanding and producing written English. To date, phonemic awareness training and assessment appears most effective with 4-year-olds, although as with many early skills, there is substantial individual variability. Most children are proficient in these phonemic awareness skills by first grade (Paris, 2005).

Finally, decoding the word *cat* is of little use if a reader cannot relate this label to its real-world referent. Comprehension is largely supported by children's receptive and expressive oral language skills, particularly their vocabulary. In the preschool years, children develop vocabulary primarily by engaging in conversations with more experienced language users including adults and their peers; these interactions permit them to hear and use new words (Hart & Risley, 1995, 1999). Unlike the decoding-related skills described above, vocabulary development is an unconstrained skill that children do not master around a given period. Rather, children continue to expand their vocabularies throughout their lives. Indeed, there is evidence of a Matthew Effect in vocabulary (Stanovich, 1986), such that those who develop a larger bank of words in early childhood continue to learn words at a faster rate over time. The implication of this effect is that the gap between those who enter school ahead in their word knowledge and those who enter behind widens over time.

This Matthew trends hints at the reality that substantial variability in children's early letter-, sound-, and meaning-related skills are apparent as early as preschool (Lee & Burkam, 2002). For example, among preschoolers, receptive and expressive vocabulary range from virtually no language to thousands of words (Hart & Risley, 1995; Hoff, 2000). Similarly, some preschoolers recognize no letters while others recognize all 52 (Roberts, 2003). Early difficulties in these areas can be related to (and likely foster) ongoing challenges in reading and in achievement more generally, with children who start out behind rarely catching up (Alexander et al., 1997; Entwisle et al., 2005).

Given the importance and challenge of reading development, the two studies of this dissertation investigated the development of both code- and meaning-related skills

and explored the relations between these outcomes and both school outreach and family involvement practices.

Learning-related Social Skills

As briefly indicated above, children gather alphabet, phonological, and vocabulary knowledge from interactions with parents and other caregivers, as well as from those with teachers, peers, and siblings. In order to actually attend to and encode new information in the course of these interactions, children require several clusters of learning-related social skills (McClelland, Acock, & Morrison, 2006; McClelland & Morrison, 2001; McClelland, Morrison, & Holmes, 2000). This term represents a recent evolution of the more classic (and, in many ways, less specific) construct of social competence. Social competence has long been considered an important area of child development and a main objective of early education programs such as Head Start (Raver & Zigler, 1997; Zigler & Muenchow, 1994) and has included such skills as managing attention, following directions, getting along with others, persisting at difficult tasks, and seeking help from appropriate resources, although definitions of this broad construct have certainly varied across researchers (Clements, Reynolds, & Hickey, 2004; Kontos & Wilcox-Herzog, 1997). As such, social competence has been found to uniquely predict academic outcomes (see Raver & Zigler, 1997 for review), although the breadth of this construct makes it somewhat difficult to ascertain exactly what processes or component skills might underlie these associations.

Self-Regulation

More recently, though, some work has suggested not all of the skills that might fit beneath the expansive umbrella of social competence are equally valuable for children's

development, and that those most proximally related to learning might deserve closer analysis. These include specific skills such as self-regulation, assertiveness, responsibility, and cooperation/compliance. Of these, self-regulation is arguably the most widely investigated and most diversely defined (Karreman, van Tuijl, van Aken, & Dekovic, 2006; Post, Boyer, & Brett, 2006), however two key aspects are particularly salient. First, self-regulation encompasses the more colloquial term “self-control,” which includes managing one’s own attention, behaviors, and emotional outbursts (Howse, Calkins, Anastapoulos, Keane, & Shelton, 2003). However, the use of the word *regulation* in place of the term *control* implies additional processes of metacognitively demanding planning and effortful self-management.

Self-regulation is important because it underlies both children’s maintenance of the joint attention, which sets the stage for learning from parents, teachers, and peers; as well as their negotiation of disappointment, conflicts, and particularly exciting experiences. As such, self-regulation permits preschoolers’ positive engagement in opportunities to learn about literacy and other content (Obradovic, van Dulmen, Yates, Carlson, & Egeland, 2006). For example, self-regulation supports children’s faculties to focus their attention on a storybook before bedtime, raise their hand before answering a question in class, and cope with the stress of having a parent leave them at kindergarten for the first day of school.

Task-related Skills

In addition, self-regulation is an important component of many other learning-related social skills, including those that help them manage their own behavior and attention in the particular context of learning tasks. One such skill is responsibility,

reflected in autonomous, self-directed behavior and the related matter of reliably following through on goals set by oneself or by others. Research finds a link between responsibility and children's literacy skills, particularly during and after the kindergarten year (McClelland, 2000). This link likely operates particularly through positive engagement in literacy-related tasks. For example, responsibility helps children to work autonomously at a journal writing activity and to following through on their own goals (e.g., completing an interesting puzzle) or those of others (e.g., pushing a chair in after working in a center to help the classroom run smoothly) (Carter & Doyle, 2006).

Interpersonal Skills

The skills discussed above largely relate to children's management of their own thinking and behavior, however skills related to interpersonal interaction are also important for early learning. Chief among these, especially when considering learning in classroom or other group settings, are cooperation and compliance. Cooperation involves working effectively in concert with others, while the similar term compliance reflects children's understanding of and conforming to the guidance and rules that others – particularly authority figures – provide (Brownell, 2006). Also key is assertiveness, which entails insisting that one's own preferences be accommodated (Hockenberger, Goldstein, & Sirianni-Hass, 1999; Ostrov, Pilat & Crick, 2006). Both are related to children's social and literacy skills (McClelland et al., 2006).

Composite Constructs Reflecting Early Learning-related Social Skills

As mentioned above, it is important to note that, despite the important theoretical and practical distinctions between these different learning-related social skills (see Gresham & Elliot, 1990), focus on the potential import of disaggregating these skills is

relatively recent; strong trends in evaluating composites of these individual skills remain. Consequently, task-related skills among young children are often discussed from the perspective of “approaches to learning,” a broad term that represents children’s apparent enthusiasm about and engagement in opportunities to learn (Fantuzzo, Bulotsky-Shearer, McDermott, Frye, McWayne, & Perlman, 2007). As such, the approaches-to-learning construct encompasses responsibility as well as aspects of early motivation, including task-persistence and interest. More broad still, learning-related social skills are often gauged as one inclusive construct including cooperation/compliance, assertiveness, responsibility, and self-regulation (i.e., the sum score on the widely used Social Skills Rating System, Gresham & Elliot, 1990). An important frontier for research in this area, then, involves executing a shift from generality to specificity in the investigation of learning-related social skills, although this transition may be a slow one involving a good deal of basic research to deepen our understanding of how these various skills are similar and different.

Problem Behaviors

Finally, somewhat apart from but related to learning-related social skills are problematic behaviors of either an externalizing or an internalizing nature. Externalizing behaviors include demonstrations of hyperactivity or inattention, and/or those of aggression or non-compliance (Campbell, Shaw, & Gilliom, 2000). Internalizing behaviors in young children include over-control or high levels of inhibition, shyness and withdrawal from interpersonal interactions, and feelings of loneliness, anxiety or even depression (Lansford et al., 2006; Pihlakoski et al., 2006). In many ways, these two classes of social difficulties involve many of the learning-related social skills above, such

as self-regulation, responsibility, assertiveness, and cooperation/compliance, but are characterized by extremely low or high incidence of these skills.

As with literacy skills, children also vary tremendously in their learning-related social skills. In a fascinating study of kindergarten teachers' observations of young children's functioning, Pianta and colleagues (Pianta, Cox, Taylor, & Early, 1999) found that nearly half of all kindergarten children are reported by teachers to have difficulty following directions and managing their own behavior and attention. Clinical internalizing and externalizing behavior problems, given their more extreme nature, are significantly lower in incidence than are difficulties with self-control and other skills, and on average characterize 10% of the preschool population with sufficient frequency to impair their functioning (NICHD-ECCRN, 2003).

And, as is the case for literacy skills, these early challenges can cast a long shadow, in large part because they often interfere with children's learning from and with peers. Indeed, much of the literature indicates that both internalizing and externalizing behaviors are related to poor engagement and learning in the preschool classroom and beyond (Lansford et al., 2006; Michael & Eccles, 2003; NICHD-ECCRN, 2003; Pihlakoski et al., 2006), and that both – but particularly externalizing behaviors – can interrupt functioning of an entire classroom (Bennett, Elliott, & Peters, 2005; Silver, Measelle, Armstrong, & Essex, 2005).

In light of the important role that these early social skills play in children's learning during and after the preschool period, the first study of this dissertation explored the development of learning-related social skills, defined broadly as approaches to learning and as a sum of cooperation/compliance, assertiveness, responsibility, and self-

regulation. The second study will disaggregate these skills, looking separately at self-regulation, cooperation, assertiveness and responsibility. Both teacher and parent report information, as well as direct observation, will be employed whenever possible. Moreover, both studies investigated the contributions of school-family partnership practices to these skills.

Certainly, other skills are closely involved in learning to read, including knowledge of grammar and syntax and concepts of print. In addition, affective variables such as enjoyment of reading and writing likely play a substantial role. However, evidence suggests that the aforementioned clusters of literacy skills (decoding-related and meaning-making) and collection of socioemotional skills are likely to be most directly related to literacy outcomes during the early years of life (Cooper & Farran, 1988; Ladd, Birch, & Buhs, 1999; Storch & Whitehurst, 2003) and thus will be investigated in the present study.

PARENT, TEACHER AND INDIVIDUAL CHILD FACTORS IN EARLY LITERACY AND SOCIAL DEVELOPMENT

As noted above, multiple factors support reading and social development across the transition to school, including parents, teachers, and children themselves. Much work has explored the independent influences of each of these on children's learning.

Parent and Teacher Factors

Among the many environmental influences on preschoolers' literacy and social skills, two of the most proximal figures in their lives include parents and teachers. Parents are the caregivers with primary responsibility for a child's wellbeing, including biological parents, grandparents or other relatives, or even caregivers by adoption. Parents are often

children's first available instructors and those most invested in children's success.

Teachers, on the other hand, may have less opportunity to get to know children closely and work with them individually. However, teachers have the benefit of professional training in instruction.¹ Evidence indicates that the contributions of both parents and teachers to children's literacy and social skills can be thought of as three-dimensional, including aspects of cognitive (i.e., instruction) and affective (i.e., warmth/responsivity and management/discipline) stimulation (Hamre & Pianta, 2005; Morrison & Cooney, 2002). There is evidence that both parents and teachers vary widely in their instruction, warmth/responsivity and management/discipline (Arnett, 1989; Hindman, Connor, Morrison, & Jewkes, In press; Morrison & Cooney, 2001; Zill, Reznick, & McKey, 2000), warranting discussion of the particular parent and teacher practices that characterize each of these dimensions.

Parent and Teacher Instructional Factors

Developmental science and education have long embraced the idea that parents' work with young children at home as well as teachers' work with children at school is important for social development, however more recently the import of instruction on letters, sounds, and new words has come into focus (Beatty, 1995). Arguably the most studied aspects of parent and teacher involvement in literacy (and, to a lesser degree, social skills) are oral language and conversation, book reading, and explicit instruction

¹ That said, it should be noted that, in contrast to kindergarten and first-grade teachers, who are generally required to complete university bachelor's degrees and hold state certifications, preschool teachers, including those participating in these two dissertation studies, vary widely in their education and in their credentials. For many, including those in Head Start, only associate's degrees and Child Development Associate certification (which requires approximately 90 hours of service in an early care setting, several courses given at colleges or in day care centers, and the completion of a portfolio) are required.

through workbooks, activities, games, and software instruction.

Oral Language Exchanges (i.e., Conversations)

Parents have an enormous impact on children's oral language, and particularly their vocabulary. In a seminal study, Hart and Risley (1995; 1999) followed 42 American homes over 2 and a half years, visiting families from many socioeconomic brackets and recording the language exchanged in casual conversation over thousands of hours; they were able to more precisely define the linguistic interactions that mattered for early literacy and to quantify the degree to which they supported particular child skills. In brief, they found that parents' frequency of talking to and with children, as well as the sophistication of the language that they used, strongly predicted children's language skills. They also identified sizeable differences between high- and low-income homes in the amount and quality of language exchanged. Indeed, some three-year-old children in high-income homes used more words in the time period measured than did *parents* in low-income homes. Overall, they concluded that parents' involvement in children's language development was a critically important influence on vocabulary and other reading-related language skills.

Sénéchal and colleagues (Sénéchal, 1997; Sénéchal & LeFevre, 2002; Sénéchal, LeFevre, Hudson, & Lawson, 1996) have mapped even more specific pathways between what parents say and what children learn about. For example, parents' talk (and their engagement of children in this talk) about letters, for example while using workbooks, supports children's letter knowledge but not their vocabulary. Conversely, parent-child discussion of new words, for example during shared book reading, supports vocabulary learning but not code-related skills.

In the early childhood classroom, conversation has been widely acknowledged by research for some time as extremely important but, unfortunately, as sometimes infrequent and characterized by largely unsophisticated vocabulary, particularly in schools serving lower income communities (Ahsam, Shepherd, & Warren-Adamson, 2006; Dickinson & Tabors, 2001; Landry, Swank, Smith, Assel, & Gunnewig, 2006; Roskos, Rosemary, & Varner, 2006). Moreover, work in schools parallels findings in the home, suggesting that instruction is most effective when it specifically targets the information (i.e., letters, sounds, or vocabulary) that children are being asked to learn (Biemiller & Boote, 2006). Thus conversation in the home and classroom emerges as an important predictor of critical language skills including vocabulary, and the two studies in this dissertation will incorporate measures of language use at home and school.

Book Reading

Another prominent area of study has focused upon parents' book reading with young children, emphasizing the importance of this practice for vocabulary and social development; indeed, urging parents to read with their children was a cornerstone of education outreach of the Reagan, Bush and Clinton administrations. Since then, a good deal of work has indicated that book reading supports not only positive attachment to adults but love of reading (Baker & Scher, 2002; Bus, Belsky, van IJzendoorn, & Crnic, 1997; DeBaryshe, 1995; DeBaryshe, Binder, & Buell, 2000). Moreover, some research has found that reading books with children can enhance their vocabulary (DeTemple, 2001; Tabors, Beals, & Weizman, 2001; Wasik & Bond, 2001). However, across the field, results about this latter point have actually been somewhat inconclusive. The seminal Scarborough and Dobrich (1994) meta-analysis noted that, across multiple

studies, book reading accounted for very little (approximately 8%) of variance in children's skills and cautioned against overestimating its import. More recent work has refined these results to suggest that book reading by adults does not automatically enhance vocabulary, but rather that the conversation or instruction during the book reading is the active ingredient. Particular practices such as asking children open-ended questions about non-immediate or decontextualized information not obviously presented in the book play a key role (Dickinson & Tabors, 2001; Hindman, Connor, Jewkes, & Morrison, In press).

Data on Head Start gathered from small studies (Hindman & Morrison, 2007; Raikes et al., 2006) as well as the large-scale, nationally representative Head Start Family and Child Experiences Survey (FACES) suggest that, as does conversation, book reading at home and school differs with SES. While families in poverty engage in a variety of activities with young children, including reading books, at least once a week, they do so less frequently than more affluent parents. Moreover, they often use fewer rare or unusual words that are important for children's vocabulary and less of the abstract or decontextualized talk (e.g. inferences, predictions) that supports children's comprehension skills (Dickinson & Tabors, 2001).

Teachers' book readings have received somewhat less attention. Findings related to what works in book readings in the early years of school are quite similar to findings in the home. Higher-order questions that provide opportunities for children to make connections between new ideas and their prior knowledge and experiences in and out of the classroom are most predictive of vocabulary learning (Hindman & Wasik, 2007). Further, making use of a thematic curriculum and creating occasions for children to hear,

use, and think about the same words and ideas in multiple areas of the curriculum, including but not limited to book reading, over a period of days also enhances word learning (Katz & Chard, 2000; Wasik & Bond, 2001; Wasik, Bond, & Hindman, 2006).

Far less work regarding book reading and emergent literacy skills has explored relations to code-related knowledge, although research generally suggests that neither parents' nor teachers' readings include much focus on code-related information, even when reading alphabet and rhyming books (Hindman, Connor, Jewkes, & Morrison, In press; Stadler & McEvoy, 2003; Yaden, Smolkin, & MacGillivray, 1993), at least in the absence of significant training (Jackson et al., 2006; Justice & Ezell, 2000; Justice & Ezell, 2002; Justice, Weber, Ezell, & Bakeman, 2002). In sum, book reading can be an important part of both parents' and teachers' efforts to prepare children to read, hence measures of these activities are included in the present studies.

Other Activities: Workbooks, Games, and Software

Finally, apart from the much-researched resources detailed above, there is emerging evidence that other activities including parents' and teachers' use of workbooks, games and software that focus on letters and sounds can support children's literacy learning (Bradley, 2002; Bradley, Caldwell, & Corwyn, 2003; Bradley & Corwyn, 2005). Examples include alphabet flashcards and educational computer software such as the *Chicka Chicka Boom Boom* electronic story program. Notably, some heavily marketed activities, such as the incredibly popular Leap Frog materials, do not have a substantial research base to support their efficacy, although this work is ongoing. Although the impact of these activities on children's learning is likely mediated, at least in part, by the oral language exchanges that adults and children have around these

activities, the frequency with which children are exposed to this sort of literacy-related content may play a role in their learning over the preschool year. The present studies thus explored the contributions of parents' and teachers' use of workbooks, games, and computer software to children's early literacy and social skills.

Ethnic and Gender Distinctions within High-Poverty Populations

While, as noted above, poverty is a powerful force in early learning, it is not a monolithic construct. Indeed, there may be important ethnic and cultural differences in parents' instruction for children at home, even within the lowest income strata. FACES data (collected on families at or below the poverty level) revealed that African-American families reported more explicit instruction in literacy-related practices than did European-American or Hispanic/Latino families, and that European-American families reported more instruction than did Hispanic/Latino families. At present, the extent and nature of these differences in the FACES population is unclear and requires further examination (Administration for Children and Families, 2003; Administration for Children, 2000), but work on children, families and schools in middle childhood suggests that the very processes of parents' teaching of children – in other words, both the aspects of parenting that influence child outcomes and the magnitude of those influences – may differ across ethnic groups and by child gender as well (Davis-Kean, 2005; Goldstein, Davis-Kean, & Eccles, 2005). The first study of this dissertation, which focused on Head Start, thus explored this possibility by including both ethnicity and poverty/welfare variables in multilevel models examining the role of school-family partnership in children's literacy and social development and by testing for interactions between these two social background variables; similarly, the second study includes measures of ethnicity.

Finally, it should be noted that there is some evidence that teachers from ethnic minority backgrounds, holding constant the socioeconomic backgrounds of teachers themselves and of the communities in which they work, differ in the nature and amount of their oral language or book-reading-related practices, relative to European-American teachers (see Stipek and Byler, 1997). This aspect of the school-family-child relationship was not a primary focus of this dissertation, although analyses did control for teacher ethnicity where possible.

Parent and Teacher Affective Factors

Affective aspects of the home and classroom learning environments can play a role in children's social skills, as well as their literacy skills. Parents' warmth and responsiveness to children are linked to self-regulation (Baumrind, 1971; Hindman & Morrison, 2007), as well as to more pro-social behaviors that underlie cooperation/compliance (Eisenberg et al., 1992; Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000; Jannsen & Gerris, 1992; Smith & Smoll, 1990). These results are largely consistent across cultures (Eisenberg & Valiente, 2002). Parents also influence children's development of self-regulation and responsibility through their management and discipline strategies, including setting, explaining, and enforcing rules (Hindman & Morrison, 2007; Ryan, Deci, & Grolnick, 1995). Moreover, there is evidence of direct links between parental warmth/ responsiveness and management/ discipline and literacy skills (Estrada, Arsenio, Hess, & Holloway, 1987; Hindman & Morrison, 2007; Morrison & Cooney, 2001).

Similar patterns are found in the classroom, such that teachers' warmth, as well as their control and discipline strategies, are predictive of children's learning-related social

skills (Carter & Doyle, 2006; Huston et al., 2001; Pianta, La Paro, Payne, Cox, & Bradley, 2002). Some evidence also shows a direct effect of teachers' organization on children's skills (Cameron, Connor, & Morrison, 2005).

In light of this substantial evidence, this dissertation explored the contributions of the warmth/responsivity and management/control of both the home and classroom environments to children's early literacy and learning-related social skills.

Individual Child Factors

Emerging evidence suggests that child factors play a role in learning about literacy and social skills.

Initial Levels of Skill

Optimal literacy instruction does not follow a one-size-fits all model; in other words, not every child gains equally from the same curriculum. Instead, as predicted by Vygotsky's (1978) idea of the individual zone of proximal development, optimal learning results from instruction that is carefully matched to a child's prior knowledge.

Specifically, accumulating data focused on growth in decoding- and meaning-related skills suggest that children struggling with low levels of code-focused knowledge benefit from explicit instruction in code-related skills (Connor et al., 2004; Connor et al., 2006; Foorman, Fletcher, Francis, Schatschneider, & Mehta, 1998). Conversely, children with strong mastery of fundamental processes such as letter knowledge and sound awareness do not generally benefit from repetition of these basics, but rather from the introduction of higher-order skills, such as formal decoding (Fielding-Barnsley, 1997). Children with few vocabulary skills show the greatest growth when provided with explicit instruction in vocabulary (both through direct instruction and through opportunities to use new words

in conversations and collaborative activities) (Wasik & Bond, 2001; Wasik et al., 2006); more implicit instruction is effective for children with larger vocabularies (Connor et al., 2004; Connor et al., 2006).

In a similar vein, children's social development might be fostered by different strategies for different children. In particular, remediation of behavioral problems such as aggression and withdrawal are best executed through highly focused interventions that enable children to change their behavior as well as underlying cognitive processes (e.g., perceptions and expectations of themselves and others) (Gardner, Burton, & Klimes, 2006; Kohl, Lengua, & McMahon, 2000). For young children, amelioration of problem behaviors related to self-management and interpersonal skills often requires structured reward systems and are most effective when consistently implemented across environments (e.g., home and school), with frequent communication to ensure that the intervention is tailored to children wherever possible. Implicitly, this suggests that instruction to shape social skills is most effective when not assumed to be one-size-fits-all. Admittedly, less is known about intervention around task-focused learning-related social skills. In sum, data suggest that both parents' and teachers' efforts to support self-regulation and interpersonal competence are closely connected to these outcomes and should be tailored to children's expertise and emerging skill.

Yet overall, research that tests the degree to which the efficacy of instructional practices at home and school might vary with children's prior knowledge have potential to map out more precise instructional plans to support young children's learning. The present studies, then, will closely examine the degree to which the influences of teacher-

parent partnership practices might differ with children's initial levels of literacy and social skills.

Child Social Background Factors

The bulk of the research literature has found that, of the factors predicting children's reading readiness, social background factors including poverty and ethnicity often account for a substantial amount of variance in reading skills. However, these social background factors do not, in and of themselves, actually affect children's skills. Rather, it is through other, more distal third variables that these factors are associated with early literacy. For example, poverty is linked to lower early literacy competence in part because children in low-income communities and households have less access to skill-enhancing resources at home and, frequently, at school as well. Thus these important social background factors are in many ways better considered in connection with parent and teacher factors (as presented above).

Family-School Partnership Factors

Aside from the important contributions of parents, teachers, and children themselves to literacy and social development, during the school transition period, young children begin their dual experiences as part of a family *and* a classroom and school community. Children thus have access to different resources with potentially distinct bodies of expertise: parents, who know a great deal about individual children and often have opportunities to work with them one-on-one; and teachers, who have formal training in early literacy and social development and can provide research-based instruction, a rich set of materials, and interactions with many peers. These contemporaneous and complementary funds of knowledge and opportunity potentially afford fruitful parent-

teacher collaboration. For example, to help a kindergartener struggling to learn the letters of the alphabet, her parents and teacher might meet and create a coordinated plan to focus on letter learning. Her teacher and parents might agree to address the same letters at home and school to provide the child with consistent experiences. The teacher could share research-based strategies and materials (e.g., magnetic letters and storybooks) with the family, guided by the family's knowledge of the child's interests, and might invite the family to attend a workshop on early literacy at the school. Finally, both parties could remain in contact each week, sharing their assessments of progress and tailoring their practices to the child's shifting skills. Exactly how and how often families and teachers of young children engage in school-family partnership practices, and precisely how these are linked to early literacy skills (possibly depending in part on children's levels of knowledge) remains unclear and is the primary focus of this dissertation.

Brief History of the Field

The study of school-family partnership has been underway for several decades, yielding both theoretical and empirical information about the elements that comprise an effective collaboration. The most prominent models in the field are distinguished from one another by the particular partner (schools/teachers vs. families/parents) upon whom they focus, resulting in somewhat of a patchwork in research questions and findings. Arguably the most fundamental model is the Epstein model of School-Family-Community Partnership (Epstein, 1995, 2001c), which examines the roles of school administrators, teachers, parents, and students (among others) as interrelated players in one system (Epstein, 2001a, 2001b, 2001d) and posits multiple (precisely, six) ways in which schools and teachers might interact with parents to support children's learning.

Epstein and colleagues have conducted numerous surveys of administrators, teachers, parents, and students, generating empirical evidence to support the independence and reliability of these six dimensions, and finding that partnership practices are associated with small to moderate gains in literacy and math achievement in the primary and secondary grades (Epstein, 1987, 1995, 2001b, 2001d).

Taking a different tact, Eccles and Harold (1993; 1996) highlight the import of parents, specifically the parental beliefs that prompt involvement behaviors and the multiple steps required in parent involvement. Eccles and Harold and their colleagues (e.g., Booth & Dunn, 1996) have consistently found support for the role of the beliefs and behaviors identified in their model(s) in the academic and social development of middle and high school students.

Finally, Hoover Dempsey and Sandler (1995; 1997; 2005) take a still more specific approach that conceptualizes parent involvement as a process through which parents must actively weigh options and make decisions. Focusing on children in grade 4 and above, Hoover-Dempsey and Sandler investigate three important questions from the Eccles and Harold model, including why parents choose to become involved, how they select particular types of involvement, and how this involvement can positively influence children's social and academic outcomes. Evidence indeed suggests that, as predicted by Hoover-Dempsey and Sandler, parents' work with children directly and in the schools that children attend is influenced most strongly by their perceptions of the invitations of the teachers and children, and that this parental involvement at home and in school significantly predicts children's achievement over the course of a year.

Thus mounting evidence supports the import of both schools (particularly teachers) and families (particularly parents) in effective partnerships and has outlined some critical pathways through which this support operates for children in the elementary grades and beyond.

School-Family Partnership during the School Transition:

Parent Involvement and the Fantuzzo Model

Recently, though, the work of Fantuzzo and colleagues (Fantuzzo, Doll, Greenfield, & Slaughter-Defoe, 1999; Fantuzzo et al., 2004; Fantuzzo et al., 2000; Manz, Fantuzzo, & Power, 2004; McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004) has applied aspects of these theoretical frameworks to the preschool period and identified several dimensions along which school-family partnership behaviors might be organized in the early years. Fantuzzo empirically identified three clusters of parents' behaviors, distinguished by where they take place: at the home (e.g., parents read books, play, or engage in learning activities), in the school (e.g., parents volunteer in the classroom or attend back-to-school nights or workshops), and through personal communication (e.g., parents phone, write, or meet with teachers).

Recent empirical work in early childhood has revealed that many parents made use of these dimensions of involvement. In one important advance in this area, descriptive analyses of data from the FACES study suggest that many (80%) Head Start parents attended parent-teacher conferences and had home visits with Head Start staff (70%). More than half volunteered (60%) and observed (75%) in their child's classroom, and about as many donated materials (60%). About 40% attended workshops or events (e.g., parties) in the Head Start center, and about one quarter (22.5%) served on the parent

policy council. Notably, these are important goals of Head Start programs, and parents are often strongly encouraged to be involved in these ways (see http://www.acf.hhs.gov/programs/opre/hs/faces/reports/technical_2000_rpt/tech2k_ch10.html). However, these data report whether or not parents engaged in this practice at least once; the precise frequency with which these interactions occur in Head Start and other early education programs is less clear. As for the communication dimension, recent work indicates that parents and teachers may exchange information concerning learning and development (rather than schedules or other administrative matters) quite infrequently, relative to the 5 days a week, four weeks per month that children travel back and forth between these contexts (Rimm-Kaufman & Pianta, 2005).

How do these early parent involvement practices matter for children's early literacy and learning-related social skills? Broad analyses of FACES data that simply sum up conferences, home visits, and parents' visits to the school suggest that these practices are related to children's spring cognitive skills such as vocabulary, book knowledge, early writing, early math, and letter-identification tasks, although these analyses did not control for children's initial scores in the fall of the school year (see http://www.acf.hhs.gov/programs/opre/hs/faces/reports/technical_2000_rpt/tech2k_ch10.html). Using more precise distinctions between partnership practices, Fantuzzo and colleagues have found that parent involvement practices in preschool (particularly Head Start) can foster early learning, albeit in nuanced ways. For example, their data indicate that parents' use of teacher-recommended activities and newsletters across the school transition promotes literacy skills, while parents' in-school involvement

does not (Fantuzzo et al., 2004; Fantuzzo et al., 2000). Notably, however, in their sample, in-school involvement is linked to children's classroom independence and cooperation.

School-Family Partnership during the School Transition:

Teacher Outreach

A literature review addressing school-family partnership during the school transition period would be incomplete without noting the extraordinary paucity of information about how schools and teachers reach out to families. Precisely why the school-family partnership in early childhood has been so focused on family involvement to the relative exclusion of school and teacher practices is something of a mystery but may well be related to the longstanding belief that early schooling should address primarily social goals rather than providing carefully planned appropriate academic instruction (Beatty, 1995; Bowman, Donovan, & Burns, 2001). It may be the case that, as the goals of preschools are increasingly refined to include greater focus on academic skills, more attention will be devoted to the role of early school-family partnership practices in this endeavor.

Although Fantuzzo and colleagues have been particularly focused upon parents, practices characteristic of each category could also be used, and even initiated, by teachers/schools. For example, teachers might send home newsletters and activities, invite families to the school, or make phone calls, notes, or time for personal meetings. Moreover, preschool teachers are encouraged by the NAEYC to send daily or weekly sending notes to families to inform them about the classroom in general or about their own child's experiences (see www.NAEYC.org).

At this point, however, this line of study is just beginning. There is little investigation of or consensus upon the factor structure of school/teacher outreach. Simply because these three dimensions have emerged from evaluations of parent involvement, and because educators might implement practices linked to each of these dimensions, does not mean that this same three-dimensional factor structure would actually underlie teachers' practices. Educators may actually address outreach to the home, in the school, and through communication as all of a piece, such that more outreach along one dimension would be closely linked to more outreach along another. Moreover, preschools vary tremendously from one another, and guidelines from central organizations such as NAEYC often encourage school outreach to families but are quite vague about how and how often that should happen (NAEYC & NAECS/SDE, 2002).

One recent study (Rimm-Kaufman & Pianta, 2005) avoided this issue by not engaging in exploratory or confirmatory factor analysis and instead just positing categories of variables (specifically, outreach focused on the home and on the school) without evaluating reliability of variables within each category. Other recent work (Schulting, Malone, & Dodge, 2005) has suggested a uni-dimensional structure in the outreach of kindergarten teachers, but still found reliability of teacher-report items measuring outreach along these three dimensions to be low (Cronbach $\alpha < 0.60$). Thus the question of how to conceptualize teacher outreach remains open, in marked contrast to our understanding of family involvement.

Future work that employs a detailed measure of outreach with a large sample of educators, permitting factor analysis, is sorely needed. Until then, where possible, it is likely worthwhile to test the reliability of several possibilities. The most theoretically intriguing involves separate at-home, in-school, and communication-oriented factors. In this vein, a seminal recent study by Rimm-Kauffman and Pianta (2005) examined at-home- and in-school-focused outreach practices among preschool and kindergarten teachers; the researchers trained teachers to use diaries to record their partnership practices with parents. Findings suggested that teachers regularly sent materials home and invited in-school involvement, but that personal communication often happened infrequently (i.e., as few as three times per month). Work from the Pathways to Literacy project suggests similarly low frequency in more socioeconomically diverse communities as well (Hindman & Morrison, 2005; Hindman & Morrison, 2007).

Regarding links to child outcomes, our prior work (Hindman & Morrison, 2005; Hindman & Morrison, 2007) has found that, accounting for children's skills at the start of the year, preschool and kindergarten teachers' recommendations to parents for at-home practices (which, across the transition to school, often feature social science concepts such as the natural world) support growth in early social science knowledge but not in other content such as word decoding. This suggests specific pathways between what teachers provide and what children and parents learn about. In addition, some inverse associations between teacher outreach in the early years of schooling and child skills have been identified. Specifically, teachers' personal communication with parents (i.e., calling, writing, meeting) has been shown to support children's alphabet learning over the course of the year but also to be negatively associated with children's meaning-focused

vocabulary skills. This finding echoes work on school-family partnership in the primary and secondary grades (see Epstein, 2001) and likely does not suggest that school-family partnership is actually causally linked to slower academic growth. Rather, it most probably suggests that teachers and parents collaborate to help children who struggle, and that these efforts are successful in promoting constrained, easily trainable skills such as letter knowledge, but not in strengthening skills that are less immediately affected by instruction, such as vocabulary, over the school year. This result, in turn, raises questions about *why* communication between schools and families is not more closely associated with development in these unconstrained vocabulary-related skills. As yet, of the little work conducted on the subject, no direct relations between teachers' in-school invitations to parents and children's skills were found.

Another possible conceptualization of school/teacher outreach would involve a single factor comprised of home-, school-, and communication-oriented outreach (given the precedent from Schulting et al., 2005 to do so). Schulting and colleagues found that, over and above family demographic characteristics, outreach promoted a composite of reading and math skills during kindergarten and beyond. Study 2, in which school/teacher outreach along these three dimensions is measured on comparable scales, will evaluate these multiple possible conceptualizations of teacher outreach.

Remaining Questions in Teacher-Parent Partnership during the School Transition

At present, despite the advances by Fantuzzo and colleagues, many questions remain unanswered regarding how school outreach and family involvement are associated with the development of early literacy and learning-related social skills.

Specific Child Outcomes

To date, much research in the field has focused on the sociological aspects of interactions between schools and families, without much regard for associations to children's skills (see Fan & Chen, 2001). In the last decade, more work has examined achievement, but often as a general construct of overall GPA or of a combination of standardized assessments of math and reading (see Schulting, Malone, & Dodge, 2005). Only recently has evaluation of performance in separate domains such as math, reading, and natural and social science become the norm (see Epstein, 2001). This is an important advance because achievement in one domain, particularly in early childhood, is not always closely associated with achievement in another. Yet still very little work using these theoretical frameworks has examined social outcomes, which, as detailed above, certainly warrant consideration. This dissertation will thus examine code-related knowledge, vocabulary, and an array of learning-related social skills.

Simultaneous Study of School and Family Partnership Practices

Second, remarkably little research has evaluated the simultaneous influences of teacher and parent partnership practices on child skills (see Schulting, Malone, & Dodge, 2005), despite the central presumption that they operate in tandem. A model including one without the other has the potential to incorrectly assign to the examined variable variance that might actually be related to the other, unmeasured variable. This dissertation will examine information regarding both school and family partnership practices and will investigate the unique relations of each of these to children's literacy and social development over the course of the preschool year and, where possible, through kindergarten. However, it should be noted that, apart from consensus in the literature regarding the import of including both teacher and parent partnership variables,

there is confusion about the relations, and particularly the presence or absence of causality, between them. Indeed, Bronfenbrenner's (1986; 2005) ideas lie at the foundation of this field, imbuing discussion of these constructs with a sense of bidirectionality. However, at the heart of work considering teachers' partnership practices (for example, see Epstein, 2001, for discussion of this issue in the context of the primary and secondary grades, or see Seefeldt, Galper, Denton, & Younosazi, 1999, for discussion in the context of Head Start preschools) rests a powerful and quite defensible assumption that, to a great degree, what schools do has a powerful effect on what families do, and thus on what children are able to do. To explore both options, this dissertation will first model school outreach and family involvement as concomitant – a conservative strategy – but will also evaluate the possibility that school outreach actually predicts family involvement.

Individual Child Differences

Third, despite its origins in Bronfenbrenner's (1986, 1995) model of development and learning, the school-family partnership field has taken little account of child factors such as individual differences in knowledge about particular aspects of reading. As has been discovered with early instruction both by parents and educators (Connor et al., 2004; Connor et al., 2006), partnership practices are unlikely to be one-size-fits all, with the most effective practices probably tailored to children's individual levels of competence in each essential skill. This dissertation will explore child-by-partnership interactions.

Longitudinal Investigations

Finally, much of this work has investigated one grade level (often, important transitions such as fourth, sixth, and eighth grade) and not explored changes in partnerships and achievement over time, or has done so using cross-sectional methodology. Although some work has identified some longer term effects of early family involvement on broad measures of achievement (i.e., a combined reading and math construct), other evaluations of children and families in Head Start (Seefeldt, Denton, Galper, & Younosazi, 1998, 1999) suggest that longitudinal effects of parent involvement in preschool on kindergarten decoding and vocabulary may not be apparent in this population. Prior studies in Head Start did not control for the variety of child, family, classroom and center background variables available in the FACES study, nor did they evaluate relations between family involvement and children's social skills. Moreover, center/teacher outreach has not been explored in this way. Where possible, this dissertation will follow children from preschool to kindergarten to clarify whether, as has been suggested in prior work (see Seefeldt et al., 1999 and Schulting et al., 2005), school outreach or family involvement might have lasting effects on children's skills across the school transition.

PRESENT STUDIES

In sum, this two-study dissertation will add to our knowledge of school-family partnerships by more closely examining their nature and frequency and linking these practices to child outcomes. The first study explores relations in Head Start between school, teacher, and parent partnership practices and child literacy and social outcomes during the preschool and kindergarten years. Data on parents' book reading and other home practices, in-school involvement, and personal communication were collected, and

– filling a particular gap in the literature – Head Start center directors were asked about the information they provided to families and in-school involvement invitations they issued. Multilevel models evaluated relations between these aspects of family involvement and center outreach and specific child outcomes including early decoding and receptive vocabulary skills, as well as their approaches to learning and classroom cooperative/compliant skills. Moreover, individual differences were explored by testing whether the effects of particular partnership practices on children’s spring skills were moderated by children’s skills on that outcome in the fall. Finally, growth models were used to track children’s vocabulary and social skill learning through kindergarten and evaluated the unique contributions of school-family partnership practices to these trajectories of change.

The second study explores many of these same issues and fills many of these gaps but builds on the first study in several ways. First, data on teacher outreach was gathered from teachers themselves, rather than center directors. In addition, parents and teachers were surveyed on a wider variety of partnership practices and asked to rate the frequency of implementation of each on a more specific scale than those used in Study 1. Finally, a broader collection of child literacy and social skills were assessed. Together, findings illuminate how parents and teachers bridge the home-school gap, how these practices are related to children’s learning during preschool, and how future research might continue to explore these issues.

CHAPTER II:
SCHOOL-FAMILY PARTNERSHIP AND EARLY LEARNING
IN HEAD START PRESCHOOLS

The first study in this dissertation extends the knowledge base about the contributions of school-family partnership practices by parents and teachers of preschoolers to early literacy and learning-related social skills across the preschool to kindergarten transition period. The Head Start program, and the Family and Child Experiences Survey study of the children, families, teachers, and administrators that comprise it, is an ideal setting in which to study school-family partnership. Head Start is a federally funded preschool program for children ages 3 to 5 who are living in households at or below the federally determined poverty level. The program was created in 1965 as a component of the Johnson administration's War on Poverty, and its structure and mission were formed through an unprecedented collaboration between lawmakers, researchers, and practitioners in the fields of psychology, education, and sociology. The central aim of the program is to disrupt traditional patterns of inter-generational poverty in the United States by preparing young children from under-resourced backgrounds to enter kindergarten with the full complement of skills necessary for success, or, in other words, to provide a head start that would afford children in poverty a fighting chance at social mobility during their tenure in nation's primary and secondary educational systems.

Among the researchers on the initial planning committee was Uri Bronfenbrenner, whose theories (1986, 2005) regarding the import of multiple, interacting forces on early development are clearly reflected – even decades later – in the strategies through which Head Start pursues its mission. First, Head Start pledges to address children’s academic learning, as well as their social development and their mental and physical health (particularly nutrition and dental health), thus children receive daily instruction from teachers, support from social workers both in and out of the classroom, and routine visits from and instruction by dietitians and dental hygienists. (Arguably, of these multiple goals, teachers and administrators from the 1960s through the 1990s tended to focus less on academics and more on social skills, typically conceptualized broadly as social competence. The recent reauthorization act of 2003 and the National Reporting System assessment program have in some ways begun to usher in a new emphasis on early instruction in literacy and mathematics.)

In addition, Bronfenbrenner’s ideas about the import of both parents and teachers for child development have engendered a great deal of outreach to parents in Head Start, including providing information about a) promoting child learning and b) raising parents’ own skill levels and income/employment status. For example, Head Start centers generally provide GED programs, as well as information regarding providers of mental health, medical screening, and nutrition services. In addition, Head Start has long vowed to heavily recruit parents as volunteers and – particularly at the outset of the program – worked to bring parents in as aide or even lead classroom teachers (thus serving as a source of employment for families as well as a source of education for parents and

children). In this way, Head Start operationalizes their mission through multiple lines of resources and services targeting both children and families.

However, it is important to understand that the routes by which Head Start centers undertake this mission are characterized by a combination of centralized and decentralized processes and resources. This diversity is in large part a result of a second idea from Bronfenbrenner, namely that the most effective and efficient efforts to provide high-quality early learning experiences for all young children will likely vary across communities, and thus that Head Start should leave room for individual centers to adapt their practices to the specific needs of the neighborhoods and populations they serve. Consequently, although funded from a national pool of money administered by the Department of Health and Human Services in Washington, D.C., programs and classrooms are actually run by local grantee agencies, which vary in nature from public school programs to private organizations such as the Catholic Charities program. As a result, some aspects of daily life in Head Start are closely regulated (e.g., Head Start centers must have restrooms for children in close proximity to classrooms, and these restrooms must meet very specific size and equipment requirements; programs must also follow very specific food safety regulations for meals and snacks).

At the same time, other issues – such as the critical matters of classroom curricula and professional development content and strategies – are only loosely regulated and are largely left to the discretion of programs. Moreover, the education coordinator and family service coordinators, expert administrators who oversee family outreach and education in Head Start, come from varied backgrounds (i.e., administration, social work, and education) and often have a variety of assignments in addition to those explicitly stated in

their contracts, such as acting as substitutes in classrooms when teachers are absent or acting as the receptionist when no one else is available (Hindman & Wasik, 2004). What results, then, is a rather baroque system of regulation and deviation in which the educational experiences of Head Start preschoolers can vary quite widely from one center to another or even from one classroom to another.

In sum, when considering how the achievement gap in America might be reduced through school-family partnership, Head Start is an important program to study for several reasons. First, it serves American children living in poverty, whose early learning and subsequent school success are of particular import for our national welfare. Further, it has long embraced a focus on school-family partnerships. Third, the particular instructional practices (and, perhaps, partnership practices) that center directors, teachers, and families implement are often extremely varied. Finally, the centralized aspects of the program provide researchers with a forum in which we can affect real changes to policy and practice and test their impact on child skills.

STUDY 1 RESEARCH QUESTIONS AND HYPOTHESES

Research Question 1

What is the nature and extent of family involvement at home, in Head Start, and through communication in the first year of Head Start?

Families were expected to differ widely from one another in the frequency with which they were involved at home, in school, and through communication.

Research Question 2

What is the nature and extent of center outreach in the first year of Head Start, including the goals that centers have for families and the success that they report in

realizing these goals for and with families, the number and variety of opportunities that centers provide for in-school family involvement, the incentives that centers implement to encourage involvement, and the family outreach practices that centers use to facilitate the kindergarten transition?

As with family involvement, centers were expected to vary widely in the frequency of their outreach to families on the goals they pursue and success they perceive; the in-school opportunities they provide; and the incentives for in-school involvement that they provide.

Research Question 3

To what degree do center outreach and family involvement predict children's decoding and vocabulary learning during the first year of Head Start, controlling for children's skills on the target outcome at the beginning of Head Start, and accounting for key social background factors as well as for aspects of the home and school environment? Moreover, to what extent might effects of center outreach and family involvement vary with children's initial levels of skill on the target outcomes?

It is expected that both family involvement and center outreach would have unique effects on children's decoding and vocabulary skills at the end of Head Start, controlling for their knowledge at the beginning of the year, and that these effects would vary with children's initial levels of skill. More specifically, early code-related skills were anticipated to relate to several center-based variables, including goals to help families learn about child development and improve their own literacy skills, opportunities for in-school family involvement, and incentives to promote that involvement. Family variables including instruction in code-related information at home,

in-school involvement, and communication with Head Start were also expected to predict Head Start preschoolers' knowledge of letters and sounds.

Similarly, for vocabulary skills, positive associations were anticipated with center goals to help families learn about child development and shared book reading, along with opportunities and incentives for in-school involvement. Additional contributions to vocabulary skills were expected from family-level variables including book reading at home, in-school involvement, and personal communication. These links between literacy skills and both center- and family-level variables were not expected to be one-size-fits-all, but rather stronger associations were predicted for children with the lowest initial skills.

Research Question 4

How do these aspects of center outreach and family involvement predict children's literacy and learning-related social skills into kindergarten? First, what factors predict children's initial status? Thereafter, accounting for key social background factors as well as for aspects of the home and school environment, how are family involvement and center-based outreach related to children's trajectories of growth on target skills from the beginning of preschool to the end of kindergarten? And, as above, to what extent might these effects vary with children's initial levels of skill on the target outcomes?

In general, it was expected that the associations apparent in Question 3 would be constant across the school transition period. However, center-based kindergarten transition practices (not relevant or tested in Question 3, which examined the Head Start year alone) were also expected to positively contribute to children's trajectories of code and vocabulary learning.

Research Question 5

Without carefully designed questions, it is difficult to ascertain whether center-based outreach actually shapes or is shaped by family involvement, thus the previous research questions conservatively assume a contemporaneous relationship between these factors. However, as noted in the literature review, even in the absence of such questions, it is possible that center outreach is actually directly related to family involvement. Thus the final research question reflects this possibility: to what degree does center outreach actually predict family involvement, which in turn predicts (as determined by the models for Research Questions 3 and 4) child outcomes?

Results were expected to show direct links between center outreach and family involvement. Specifically, center emphasis on child development and on parents' own literacy were expected to predict code-related instruction at home, whereas both of these as well as center emphasis on the import of book reading were anticipated to explain variability in parents' book reading practices. It was predicted that parents' in-school involvement would be associated with center emphasis on child development, center provision of in-school involvement opportunities, and center incentives for involvement. Families' personal communication with Head Start was anticipated to relate to Head Start emphasis on child development.

METHODS

Participants

Participants in this study were involved in the Head Start Family and Child Experiences Survey (FACES) study beginning in 2000. In total, the study included 2800 children and families enrolled in 40 Head Start centers around the country. Because the

sample was designed to be nationally representative, this sample is statistically similar to the larger population of Head Start centers and families in the United States in terms of geography, urbanicity, ethnicity, and special needs/disability status.

Composition of Study Sample

Before beginning analyses, some children were removed from the larger, highly diverse FACES sample in order to most appropriately represent the contributions of parents and teachers, as well as the partnership practices they implement, on normally developing children in Head Start.

English-language Proficiency

To control for competence in English, children who were assessed in Spanish (n=305) were removed from analyses. Remaining children may have spoken languages other than English at home but knew enough English to be assessed in that language.

Disabilities

Also removed were children with disabilities that parents reported as sufficiently severe to adversely affect their learning. In all, 245 were identified by their Head Start centers as having disabilities, but these disabilities ranged from broad cognitive issues such as mental retardation to specific language problems to physical challenges. Of these 245 children, parents identified only 48 as having disabilities that affected their learning, and these children were removed from analyses so as to most appropriately represent the influence on Head Start on children in poverty with normative cognitive and social developmental trajectories. (Future research focusing specifically on this important population is discussed in Chapter 4.

First Year in Head Start

In 2000, the majority of children were in their first year of Head Start, but parents reported that 79 of these children had already attended at least one previous year of Head Start. These children were removed from the present sample, given the challenge of determining whether the change in their skills over the course of the 2000-2001 academic year was indeed related to their experiences in that year alone, or was in part influenced by their prior experience in Head Start for which no data were collected.

Final Year in Head Start

Roughly half of the children in the sample ($n = 650$) were enrolled in Head Start from 2000-2001 and 2001-2002 and then went to kindergarten, whereas the remainder ($n = 816$) were enrolled in Head Start 2000-2001 and then went to kindergarten in 2001-2002. The reasons for these different patterns of enrollment are potentially legion. One of the most common differences between these groups was that some children were approximately 4 years old in 2000-2001 and thus met the cutoff dates for kindergarten entry in their school districts in the fall of 2001. However, cutoff dates vary widely across the country, hence children of roughly the same age in different districts might have had different experiences. Other children may have been old enough to go to kindergarten but may not have been deemed ready by families or schools and thus might have spent a second year in Head Start.

Given the focus in this study on the relations between children's experiences in Head Start and their skills at the end of kindergarten, only children who spent one year in Head Start and then went to kindergarten are considered in these analyses. The mean age in the fall of children who spent two years in Head Start was 45.71 months, significantly lower than the age of children who spent just one year in Head Start ($p < .001$).

Interpretation of findings should consequently be framed by the understanding that children in this one-year sub-sample were generally older than children who spent two years in Head Start. No other differences on background variables were identified.

Study Sample Sociodemographic Information

The remaining sample included 816 children, 266 classroom teachers, and 209 center directors. Children and families, classroom teachers, and center directors were quite diverse on a variety of background factors. Demographic information on children and families, teachers and classrooms, and centers and directors are presented in Tables 2.1, 2.2, and 2.3, respectively but is summarized in the text

Children and families. The sample of children was primarily European-American (47%), with an addition 31.5% of families reporting children's ethnicity as African-American and 16.0% of families reporting children's ethnicity as Asian-American. Less than 1% of the sample was Native-American, and approximately 3% of children were bi- or multi-racial. Half of the families were headed by mothers only. Twenty nine percent of mothers had less than a high-school degree, 39% had completed high school or attained a GED, and 25% had completed some college or an Associate's degree. Overall, 40% of mothers were working full time, with an additional 15% working part time, and 38% unemployed. 62% of families were below the poverty line (with the remainder, by law, falling close to the poverty line), and 25% of families received welfare.

Teachers. In total, 11% of teachers had completed no education beyond high school or a GED, while 49% had attended some college or earned an associate's degree, and 22% had earned a bachelor's degree. An additional 14% had pursued or earned an advanced degree. Regarding certification, 51% held a CDA certificate and 34% held a

state teaching certificate. On average, teachers had 12 years of experience in the field of teaching and 8 years in Head Start. Their classrooms included, on average, 13 children, and scored 5 (out of a possible 7) on the ECERS language subscale and 35 out of 49 on the total ECERS measure. The quality of teacher interactions with students achieved an average score of 72 points out of a possible 90.

Centers. Centers were located primarily in urban areas (71%). The region of the nation featuring the largest number of centers was the south (40%), with an additional 23% of centers serving the west and midwest, respectively. The remaining 14% of all centers were located in the northeast. About one-third (36%) of centers served high-minority populations (defined as populations in which at least 40% of children were of minority ethnicity).

Measures

Literacy Measures

Code-related Knowledge

Code-related skills were assessed using the Woodcock-Johnson R Letter-word subtest (LW) in the fall and spring of Head Start (Woodcock, McGrew, & Mather, 2003). The LW assessment involves identification of letters of the alphabet, as well as basic word reading. The test can be used from early childhood through adulthood. Internal reliability of this measure is above .90 for children in preschool and kindergarten. With Head Start children involved in the FACES data, reliability ranged from 0.84 in fall 2000 to 0.86 in spring 2001 and 2002. Significantly, only 4-year-old children were administered this subtest, yielding a sample size of approximately 800 children. Mean IRT scores, which account for item difficulty, were 356.79 in the fall ($SD = 13.42$) and

366.02 in the spring ($SD = 16.94$), where a value of 500 indicates the average score for a 10-year-old child (see Table 2.4)

Receptive Vocabulary

Receptive vocabulary was assessed using the Peabody Picture Vocabulary Test III (PPVT; Dunn & Dunn, 1998). In this assessment, the examiner presents a child with a target word and then asks the child to choose one of four images that best represents that word. All children were administered this assessment. The use of basal and ceiling items can reduce administration time for children from preschool to grade 1 to approximately 10-20 minutes. The test, including two forms, has an internal consistency above 0.90 for preschool and kindergarten children. Test-retest reliability ranges from 0.91 to 0.94. For children in the FACES study, internal consistency was 0.97 in fall 2000, spring 2001, and spring 2002. The mean score in the fall, using an IRT scale to account for item difficulty, was 68.89 ($SD=13.43$), and 75.33 ($SD=10.82$) in the spring (see Table 2.4).

Social Skill Measures

Approaches to Learning

Parents were asked to rate children's approaches to learning on 7 items, tapping such matters and enjoyment of learning and their willingness to try new things. For example, during a one-on-one interview, parents were asked to report on how much their children enjoyed learning about and trying new things. On each item, children were assigned a score from 0 to 2, thus the total score ranged from 0 to 14. Cronbach alpha values for the scale were between 0.60 and 0.65 at each time point. Mean scores in the fall were 12.33 ($SD = 1.5$), and scores in the spring were very similar ($M = 12.30$, $SD =$

1.65). The measure was constructed by Westat (Zill, Kim, Sorongon, Herbison, & Clark, 2005). See Table 2.4 for descriptive statistics.

General Classroom Social Skills

Teachers used a 12-item rating scale to assess appropriate classroom behavior, a construct that essentially reflects social competence in the classroom. These were drawn from The Personal Maturity Scale (Alexander & Entwisle, 1988) and the Social Skills Rating System (Gresham & Elliott, 1990) and primarily assessed interpersonal skills such as cooperation, compliance, and other pro-social behaviors (e.g., sharing). For example, teachers were asked about how well children followed teachers' directions and helped their classmates. On each item, teachers rated each child's skills from 0 to 2, and items were combined to create a sum score ranging from 0-24. Higher scores designated interpersonally competent behavior. Internal consistency of the measure ranged from 0.87 to 0.88 across the three time points. The mean score in the fall (see Table 2.4) fell in the middle of the possible range of teacher ratings ($M = 15.49$, $SD = 4.57$) and was slightly higher in the spring of Head Start ($M = 17.56$, $SD = 4.47$) and kindergarten ($M = 17.27$, $SD = 4.47$).

Problem Behaviors

The Classroom Conduct Problems scale (modified from Achenbach, 1982 and Zill, 1986) involved 14 items on which teachers rated the frequency of children's withdrawn (7 items), hyperactive (4 items), and aggressive behaviors (3 items). For example, teachers reported upon how often children were unhappy, were anxious and restless, or hit/fought with others. Teachers rated the degree to which each item characterized children's behaviors on a scale from 0 to 2, and the total score combining

all items ranged from 0 to 28. Internal consistencies for the problem-behavior subscales and for the total score were all above 0.70 for each data collection period with this sample. Mean scores in the fall (see Table 2.4) were 2.24 (SD = 2.44) for withdrawn behavior, 1.15 (SD = 1.41) for hyperactive behavior, and 1.56 (SD = 1.82) for aggressive behavior. Because variability in children's scores on these scales was so small (as would be expected), problem behaviors were used as a predictor of academic learning but not as an outcome unto themselves. As noted above, Chapter 4 includes information about future studies that might look more closely at children with exceptional learning needs.

Center Outreach Measures

Goals for Family Involvement in Head Start

Center directors were interviewed in the spring about the three primary goals targeted by their center outreach to families (e.g., teaching families about child development or book reading) and the degree to which their center was successful in accomplishing these outreach goals (responses coded from 0 = not successful to 2 = very successful). The alpha reliability for this scale was 0.42 (see Table 2.5), which likely reflects the fact that centers would not be expected to be equally successful on all of these goals (Schulting, Malone, & Dodge, 2005). Consequently, variables were considered individually rather than as aspects of one overarching construct.

Opportunities for Family Involvement in the Center

Directors were also asked about whether or not they had invited parents to be involved in the center (responses coded yes/no) in a variety of ways, including through classroom volunteering, workshops, or fundraising. Notably, there was little variability on items related to serving meals and helping with dental care (i.e., nearly all centers

engaged in these practices), thus these were removed from analyses. Data were reduced to a sum of these opportunities, with higher scores reflecting centers where more in-school involvement opportunities were provided at least once that year for families. Cronbach alpha reliability for these items was 0.60. Descriptive analyses (see Table 2.5) revealed that, on average, families were invited to be involved in the school on a number of occasions throughout the year ($M = 10.90$, $SD = 3.05$).

Incentives for Family Involvement in Head Start

Finally, directors noted whether or not they provided any of six particular incentives to encourage/facilitate family involvement in Head Start, including financial or material incentives (e.g., door prizes for persons in attendance) or transportation. Cronbach alpha reliability for these items was 0.38 (see Table 2.5), likely a reflection of the fact that centers would not be expected to provide all of these incentives. These variables were considered individually rather than as aspects of one overarching construct.

Center Practices to Facilitate the Transition to Kindergarten

Directors were asked about whether or not they engaged in any of various outreach practices aimed at fostering a successful transition to kindergarten. Practices focused on helping families interact with the elementary school, including scheduling visits for families to go to the elementary school and providing the elementary school with child records. The Cronbach alpha reliability between these 7 items was acceptable ($\alpha = 0.61$). On average, centers used most of these practices at least once during the year ($M = 5.22$, $SD = 1.64$, see Table 2.5).

Classroom Instruction Measures

Although not a central focus of the present study, children's experiences in the classroom are important covariates in the study of the unique contributions of center outreach and parent involvement. As a proximal influence on children's learning – indeed, classrooms are the particular aspect of the center with which Head Start children most frequently interact – classroom-level variables may well account for a substantial amount of variance in young children's learning. Thus this study, drawing on Hamre and Pianta (2005), controlled for several aspects of classroom instructional quality, reflecting both cognitive and affective stimulation.

Teacher Background

Teachers completed a basic background questionnaire. Variables upon which teachers reported included their levels of education and years of experience in the field, as well as their gender and ethnicity.

Classroom Academic Instruction

Overall classroom quality. First, the language subscale of the Early Childhood Environment Rating Scale – Revised (ECERS-R; Harms & Clifford, 1980) was used as a broad measure of the opportunities that children had to learn about literacy. The language subscale involved 4 items that were scaled from 1 (inadequate) to 7 (excellent quality), the mean of which constitutes the score on the scale. Items tapped teachers' encouragement of children's use of language and use of language to develop children's reasoning skills. Internal consistency for the measure was 0.92 in the spring of the Head Start year. On average, teachers performed in the acceptable range on these items ($M = 4.85$, $SD = 1.20$, see Table 2.2).

Classroom instructional activities. To gain more specific information about exactly what teachers did in the classroom, the Classroom Observation of Teacher-directed Activities checklist was created for the FACES study. In this checklist, observers noted whether or not teachers engaged in particular activities – such as instruction in letters, vocabulary, or book reading – at any point during the instructional day. Taken together, the 19 items that reflect specific classroom practices (e.g., reading stories, science activities) have a Cronbach alpha reliability of 0.72. Specific items reflecting meaning-related activities (e.g., read stories with children, encourage children to tell their own stories, talk about new words) and code-related activities (e.g., teach letters and sound out words) did not form reliable code- and meaning-scales, or even one literacy-related scale, using exploratory or confirmatory factor analysis methods, thus the contributions that these particular teacher behaviors made to child outcomes were examined individually.²

Teacher-Child Relationship Quality

The Arnett Scale of Caregiver Interaction (Arnett, 1989) was employed to gauge the affective quality of lead teacher-child interactions. Observers rated teachers' behavior (e.g., speaks warmly to children) on a scale from 1 (never seen) to 4 (always or almost always), thus a high score reflects higher affective quality in lead teacher interactions with children. Subscales target sensitivity, harshness, detachment, permissiveness, and independence, and are combined into one total score. The Cronbach alpha coefficient for all items in this total score was 0.94. On average (see Table 2.2), teachers scored toward the high end ($M = 72.73$, $SD = 13.45$) of the range from 20 to 90.

1. A word of explanation on this detail: as all the items (i.e., those addressing literacy, math, and general knowledge content) together did yield a reliable scale, it is possible that teachers chose between literacy activities and implemented just one or a few, rather than all, perhaps because of limited time or resources.

Family Involvement Measures

Families were interviewed in the fall about their involvement in children's learning at home. For a depiction of specific information collected from each participant in each season, see Study 2 Data Collection Chart (Figure 2.1). Descriptive information regarding these family-level involvement variables is included in Table 2.5.

Book Reading

First, families were asked about the frequency with which they read books with their preschoolers, coded on a seven item scale from 1 = never to 7 = everyday. Families reported on this information in fall and spring. Because frequency of reading at these time points was related but not identical ($r = 0.52, p < .001$), both variables were tested in each model. On average, families reported reading books with children every other day at both interviews (in fall, $M = 4.64, SD = 2.36$; in spring, $M = 4.58, SD = 2.35$).

Other Home Involvement

Drawing on items from the National Household Education Survey, parents were also asked how many times in the last week they were otherwise involved in children's education at home (e.g., talked about the school days, played games), on a 3-point scale including never, once or twice, and three or more times. Parents were asked about some activities (e.g., playing sports, watching TV) that were not as closely linked to children's academic skills, coded on a scale including never, once or twice, and three or more times. Although it would be illuminating to test the independent effects of the Academic and General involvement clusters, the relevant items did not combine in a statistically reliable way on either of these subscales among families in this sample (Cronbach alphas for each

below 0.60 at all time points), and these values were consistent for the full FACES sample. Thus academic and general family involvement at home were combined to create an 11-item involvement scale ($\alpha = 0.69$). Families reported on this involvement in the fall and spring. Because these values were moderately correlated ($r = .55$, $p < .001$), both were considered in the same model.

Involvement in the Head Start Center

Parents were asked about whether or not they were involved in the Head Start center in a variety of ways, such as through volunteering or observing in the classroom. These were coded on a 5-point scale from never (coded to have a value of 0), once or twice, several times, about once a month, and about once a week. These items were summed to create one composite in-school involvement variable. Cronbach alpha reliability for these items was 0.76. In general, families reported being involved in the center in several ways over the year ($M = 9.90$), although there was variability among families in the frequency of this involvement ($SD = 6.58$).

Communication with the Head Start Center

Parents were asked how frequently they had attended a conference or otherwise and met informally with center personnel. These items were coded on a 5-point scale from never, once or twice, several times, about once a month, about once a week. Because the reliability between these two items was low (Cronbach $\alpha = 0.26$), these items were examined independently.

Missing Data and Imputation Strategies

Understanding the Import and Challenge of Missing Data

In a large-scale, longitudinal effort to collect data, missing information is

common and potentially quite problematic. One possible result of missing data, and particularly item non-response, is that, in quantity, it can limit the power of statistical analyses. Another (somewhat more pernicious) consequence of missing data is that the resulting data may be systematically biased, over- or under-representing particular subgroups of the population from which the sample was drawn (Little & Rubin, 1987).

Before correcting for missing data, it is important to consider the various patterns of missing data that are possible (see Schafer, 1997 or Allison, 2002 for more extensive discussion). A first pattern is one in which missingness on a particular variable, for example Y, is related to the very variable under examination. For example, very low-income participants in the FACES study might be less likely to report their income than relatively more affluent participants, perhaps as a result of social desirability impulses (or myriad other factors). In this situation, data are *missing not at random* (MNAR), which in some ways presents the greatest challenge in both detection and correction. Modeling missing data in this situation requires a great deal of information about the mechanisms (including related variables) behind these patterns; for example, a carefully constructed two-stage estimation building on the methods of Heckman (1976) to account for bias in the dependent variable is often recommended.

On the other end of the spectrum, data might be missing on variable Y in a way that is *completely at random* (MCAR), meaning that the probability of missingness is unrelated to any variables in the dataset, including Y. For example, a Head Start parent might accidentally skip a question in the middle of a survey due to fatigue. In this situation, systematic bias due to list-wise deletion is unlikely. However, MCAR is often too stringent an assumption to make.

Somewhat more lax is the assumption that data are *missing at random* (MAR), meaning that missingness on variable Y might be reliably associated with some variables in the data, but not with Y itself. For example, absenteeism among Head Start children on a vocabulary assessment might be more common in families in which the primary caregiver works a night shift and finds it difficult to get children to Head Start everyday; however, variability in vocabulary skills among children with and without night-shift families would likely be roughly equal. Unlike the MCAR scenario, listwise deletion of cases including some data that are MAR might bias the sample. To return to the above example, removing these night-shift families from the study would result in a less diverse sample.

Managing Missing Data through Imputation

As a whole, the literature on missing data focuses primarily upon the MAR and MCAR situations, with particular attention to the more conservative former assumption about data; there is a general consensus in the literature that, in many situations, the best approach to managing missingness is not to ignore it, but rather to endeavor to use what information is available to fill in gaps where observations were not recorded. Yet the field is still developing and refining both theoretical and empirical approaches to the issue. For example, there is debate about how much missing data is too much to proceed. Imputation of a given variable may be unwise if more than 20% of the overall sample was missing a value on that variable, although estimates on rules of thumb for this cutoff range from 10% to 50%, and an example study in a popular text (Allison, 2002) includes one variable with a missingness rate above 70%.

There is also debate about precisely how to impute data, with various available

methods that differ both in how they adjust datasets (e.g., by adjusting the observed values or by generating values for missing data) and in the algorithms that they use to guide these adjustments. While a comprehensive review is available in Allison (2002) and Little and Rubin (1997), two are of particular note.

One option is single imputation, which involves using maximum likelihood algorithms to draw on available information (i.e., other variables in the dataset) to generate one data point for each missing case on a particular variable, while also adding a random component, or element of noise, to avoid shrinking standard errors (and thus potentially artificially deflating p values). The related approach of multiple imputation expands upon these techniques but, rather than creating one value for each missing data, creates multiple alternative values by taking random draws from the entire population of possible missing estimates.

Broadly speaking, both single and multiple imputation have the advantage of increasing statistical power (if only slightly) while adjusting for bias, although there is debate about which of these methods is superior. Because multiple imputation involves a great number of imputed values (often 5 to 10 imputed datasets for the one original dataset), parameter estimates for each missing data point may be more stable and robust than they are in single imputation (Sinharay, Stern, & Russel, 2001). This might be a particularly useful strategy when the amount of missing data is large, and especially when the sample size is large as well (Acock, 2005; Allison, 2002).

However, as detailed by Allison (2002), single imputation has several advantages. First, it is parsimonious, particularly relative to the potentially substantial number of datasets generated in multiple imputation, which can prove unwieldy. Indeed, researchers

must essentially average correlations and HLM results across a series of models, which can be extremely complex given the different standard errors of a given variable across datasets (Widaman, 2006). Moreover, single imputation – when the program and techniques used are carefully documented in a manuscript – can be replicated by other researchers, whereas multiple imputation cannot, making replication challenging (Allison, 2002). Finally, due to the complexity of the operation, multiple imputation procedures generally use all variables in a given dataset to impute a series (i.e., 5 or 10) new datasets with complete data. By nature, this automatic use of all available information is less flexible than single imputations techniques that permit imputation of one variable at a time; this flexibility is useful in situations involving two highly correlated variables in the same dataset (e.g., a composite and one of its component items). Multiple imputation programs such as IVEWare often struggle to iterate through the multicollinearity (see Schulting et al., 2005 for example), whereas single imputation programs permit the researcher to omit one or the other, given that they provide very similar information, when convergence is impossible.

Techniques Implemented in the Present Study

In this study, where missingness on some key center-level variables was substantial and where the sample size was large, multiple imputation was used. In particular, the IVEware program was used, which simultaneously draws upon all variables in the data set to fill in missing data on each one. The program uses a maximum likelihood algorithm and iterates until the most appropriate solution can be found, filling in all missing data points with values that best fit. As noted above, a stochastic component is added as well to maintain appropriate standard errors. Datasets at each level

(child/family, classroom/teacher, and center) were imputed separately, thus data at one level, for example child/family, were imputed using only other variables at that level, rather than variables from the classroom or center level. All hypothetically important variables at each level (i.e., all variables detailed above) were retained for imputation, so that estimates would be based on the richest information possible. Five different datasets were imputed for each level.

Child Data

Letter-Word Assessment

On the Letter-Word assessment, 254 children were missing data in the fall and 131 were missing data in the spring. For many of these children, this missingness resulted from simply not being old enough to qualify to receive the measure. Consequently, the mean age of children missing Woodcock-Johnson data in the fall was 45.12 months (SD = 3.86), as compared to 55.96 months (SD = 3.98) for children who had these scores, a significant difference ($t(798) = 34.16, p < .001$). Similarly, in the spring of Head Start, the mean age of children without Letter-Word assessments was 44.85 months (SD = 7.53), while the mean age for those with Woodcock-Johnson data was 52.80 months (SD = 4.96), still a significant difference (using a Levene statistic for unequal variances, ($t(150) = 11.52, p < .001$). Because these children were essentially missing data by design, these values were not imputed. However, results of analyses must be interpreted in light of the fact that not all children took the test.

However, some children ($n = 51$) who were more than 48 months or older in the spring were missing Letter-Word data. For these children, data were likely missing because of absenteeism from school; indeed, 36 of these were also missing PPVT data.

However, scores could be missing on one measure but not the other ($n = 15$) because children were administered the test but did not complete a sufficient number of items to earn even the lowest standard score.

Because of the complexity of these patterns of missingness – and particularly the intentionality of much of this missingness – data on the Letter-Word assessment was imputed only for the 36 children who were old enough to take the Letter-Word assessment but also missed the PPVT, indicating absence from school rather than possible failure to achieve ceiling on the assessment.

Peabody Picture Vocabulary Test

On the PPVT, 40 children were missing data in the fall of Head Start and 40 were missing data in the spring of Head Start. Notably, the same children were not necessarily missing data at both time points. Missingness was uniformly related to absenteeism, as no other data from that testing was available for these children. As a result, missing values were imputed using multiple imputation. Five datasets were created, drawing on information about children's social backgrounds and their scores on other assessments including social skills. Means and standard deviations for the imputed data ($M = 68.89$, $SD = 12.18$) were nearly identical to those of the observed data ($M = 68.97$, $SD = 12.23$). No children were missing data in spring of K.

Parent-reported Involvement

Less data was missing on parent-reported involvement variables. Only 4 parents were missing book reading data, while 6 were missing at-home involvement. Concerning in-school involvement, 133 parents were missing data, and 117 parents were missing conferencing and meeting data. These values were imputed using multiple imputation (5

datasets), drawing on information about children and family backgrounds. For parent involvement at home, the means and standard deviations for the imputed data ($M = 15.82$, $SD = 3.77$) were nearly identical to those of the observed data ($M = 15.81$, $SD = 3.76$). For parent involvement at school, the imputed means ($M = 9.90$, $SD = 6.58$) were also quite similar to the observed means ($M = 9.33$, $SD = 6.18$).

Teacher/Classroom Covariates

Missing data were apparent both on teacher background information and on classroom observation data.

Regarding background questionnaires, only 6 teachers were missing information about their education and experience, with 7 missing information about their certification. In total, 14 teachers were missing observational ECERS and Arnett scores. Given the small amount of missing data on each variable and the substantial number of additional variables that could be used to predict this information, these data were imputed using multiple imputation. Five datasets were created for these teacher/classroom variables. Means and standard deviations were very similar in the observed and imputed datasets for background variables such as education ($M = 5.53$, $SD = 1.32$ for imputed, $M = 5.37$, $SD = 1.32$ for observed), as well as observation variables such as the ECERS (imputed $M = 4.99$; $SD = 1.27$, observed $M = 5.02$, $SD = 1.27$) and the Arnett (imputed $M = 72.73$, $SD = 13.45$; observed $M = 73.12$, $SD = 13.17$).

Center-reported Involvement

Missing data was a substantial problem with the center-director interviews, as only 135 center directors completed interviews (which included discussion of their program's family outreach practices), while 74 did not. Although this represents

substantial missing data (36% of the total sample of 209 centers), data were not imputed for two reasons. First, other available background information about centers with missing outreach data included the geographical locations, urbanicity, and minority composition of the centers, as well as aggregates of family poverty and welfare status, child fall vocabulary score, and child age. However, bivariate correlations found few significant relations between these center-level background variables and the center outreach variables. Few other program- or center-level observed variables had any theoretical connection to center outreach (e.g., center director age and experience) that might be leveraged in an effort to create close estimates of missing center outreach data. A second issue was related to fact that the high proportion of centers missing outreach data further undermined the stability of observed outreach data and thus made it less useful in estimating the outreach of other centers with similar or different scores on background variables. As center-level outreach data were not imputed, and instead listwise deletion procedures were used.³

Although in some ways conservative, the use of listwise deletion leaves open the possibility that estimates will be biased due to factors that produced the missing data – in non-random patterns – in the first place. For example, perhaps center directors serving the highest poverty communities were systematically missing their interviews. One way to reduce this possible bias is to identify factors that are systematically related to missingness and then to control for these factors in models using these data. In a sense,

³ Please note that I did endeavor to impute these data and found that, although means and standard deviations were consistent between the original and augmented data, results of analyses were quite different. I interpreted this as strong evidence that imputed data included a good deal of noise and were not appropriate for analysis, despite the advantages they provided in the area of statistical power.

this narrows the gap between data that are missing not at random and those missing at random.

To this end, a series of analyses were run to explore whether or not centers missing data were significantly different from those with center-director data on the available background variables, including percentage of minority students they served, center urban/rural location, center geographic location (i.e., northwest, midwest, south, and west), and the average poverty and welfare status of their enrolled families.

For dichotomous variables, analyses were conducted using chi-square methods. A greater proportion of centers with low-minority populations (53%) had missing data, compared to just 26% of high-minority centers ($X^2 (df = 1) = 15.49, p < .001$). A greater proportion of centers in rural communities (48%) had missing data, compared to only 30% of urban centers ($X^2 (df = 1) = 6.15, p = .013$). However, of the four geographic regions of the country, neither the northeast ($X^2 (df = 1) = 0.01, p = .991$), the midwest ($X^2 (df = 1) = 1.25, p = .264$), the south ($X^2 (df = 1) = 0.48, p = .491$), nor the west ($X^2 (df = 1) = 2.22, p = .136$) were particularly likely to be missing data, relative to the others.

T-tests were used to explore differences between centers with vs. without center outreach data on continuous variables. There were no differences between centers with and without missing data on variables reflecting demand on the center from the community, such as center-level aggregates of family poverty status ($t(207) = 1.43, p = .154$) or welfare status ($t(207) = 0.32, p = .752$). Moreover, no differences were found on variables related to the children attending the center, such as the child: adult ratio ($t(200) = 1.30, p = .194$), children's age at the beginning of Head Start ($t(207) = 1.43, p = .153$), or children's incoming PPVT scores ($t(207) = -0.48, p = .629$). In conclusion, percent of

minority students and urbanicity were entered into all models involving center outreach to control for possible bias in the data as a result of responses missing not at random.

ANALYTIC STRATEGY AND RESULTS

Question 1 A:

Family Involvement at Home

Regarding book reading, parents on average reported reading to children between three and six times per week in the fall and in the spring (note that this frequency corresponds to a single category that parents could choose, rather than an actual range of precisely reported reading frequency). However, in the fall, 342 parents (42% of the sample) reported reading with children everyday; indeed, this was the modal response. In contrast, just 32 parents (4% of the sample) reported rarely reading to children, and only 197 parents (29% of the sample) reported reading once or twice per week. This distribution was nearly identical in the spring. Thus, consistent with recent work by other scholars (Dickinson & Tabors, 2001; Raikes et al., 2006), it appears that, although there was variability across families in poverty in the frequency of book reading, many reported reading regularly with their preschoolers. On average, reading frequency did not increase over the Head Start year. However, fall and spring reading were only moderately correlated ($r = .51$), suggesting that families did change (although not by systematically increasing or decreasing).

A similar pattern of regular involvement among most families was apparent in the home-involvement variables. Across families, families reported a total sum score on that scale of about 15 in the fall, meaning that parents reported interacting with children about 15 times per week around home learning. Notably, given the construction of the scale, it

would be possible for this value to represent once-a-week experiences with about a dozen different kinds of learning activities, or more frequent interactions (e.g., two or even three interactions per week) around just six activities. Explicating the nature of this involvement, descriptive analyses showed that the average frequency of engaging in each of the at-home activities was between .99 and 1.80 (where 1 = once or twice per week and 2 = three or more times per week), thus no one behavior (or scale item) seemed to dominate this construct. In fall, only one parent (0.1% of the sample) reported no at-home involvement with children. Visual inspection revealed this variable to be normally distributed. In the spring, the distribution was similar, although on average families reported a score of about 25, suggesting roughly daily involvement in the various practices upon which they commented. Significantly, no families reported 0 involvement; in fact, the lowest reported value was 6. Taken together, data show that most families were involved at home at the beginning of Head Start, but that overall, involvement increased over the year. That said, fall and spring scores on this scale were only moderately correlated ($r = .56, p < .001$), indicating that some families increased relatively more than others over time.

Question 1B:

Family Involvement at School

In contrast, many more families reported very little involvement in the school than reported little involvement at home. However, the average of each family's sum on this scale indicated some family involvement at school. The mean parent sum on the scale reflected about 10 instances of involvement (e.g., classroom volunteering, chaperoning field trips, etc.) per year. Given that items were rated on a 5-point scale,

this value could represent weekly involvement on two kinds of activities or practices (e.g., classroom volunteering and working in the Head Start office) or rare involvement in 10 different ways. To illuminate the specific behaviors that underlie this sum score, descriptive analyses of individual items were conducted; findings revealed that the average frequency of engaging in any of the component behaviors (i.e., the particular items on the school-involvement scale) was between .5 and 1.5, meaning that no one practice dominated the nature of in-school involvement. However, of the included items, the most frequently reported by parents were observing ($M = 1.30$, $SD = 1.12$) and volunteering in the classroom ($M = 1.13$, $SD = 1.18$), each of which took place about once or twice during the school year (in light of how the scale was scored).

In total, 16 families (4% of the sample) reported one or fewer instances of school-based involvement, and 50% of the sample reported 9 or fewer instances of involvement for the Head Start year. However, there were some outliers on the high end of the distribution. Indeed, the most involved 10% of the sample reported between 19 and 44 instances of involvement. The distribution of the variable was fairly normal, but with a long tail on the right (stretching toward higher positive values). Thus it is clear that, overall, most families report at least a few instances of involvement in the Head Start center, whereas a few families report having a very strong presence.

Question 1C:

Family Personal Communication with Head Start Personnel

Regarding the two communication-related variables, measured (as were in-school involvement variables) on a scale from 0 = never to 4 = weekly, having conferences or home visits with Head Start personnel was more frequent ($M = 1.38$, $SD = .95$) than was

meeting with Head Start personnel ($M = 1.05$, $SD = .91$), however overall, both examples of communication were less frequent than the home- or school-based involvement.

Indeed, far more families reported no communication with the school than reported no in-home or at-school involvement; in total, 140 families (17% of the sample) had no conferences or home visits by the end of the year, while 204 families (25% of the sample) had never met informally with Head Start personnel. Similarly, scores of 3 or 4 (meaning once per month or once per week) were reported by just 12% of families for conferencing and only 7% of families for meeting. Thus personal communication through conferences or meetings was a rather infrequent strategy for school-family partnership in Head Start, as compared to at-home or in-school involvement in early learning.

Question 2A: Goals for Family Involvement

Regarding center directors' goals for family involvement around academic learning or broader life support, centers most frequently made it a priority to promote parents' knowledge about book reading with their children. And while 39% of centers pursued this goal with families, about 40% of these centers rated themselves as not at all successful at this endeavor. In total, 37% of centers focused on informing parents about general life support services that were available to them (e.g., mental health and nutrition resources), with just 8% of centers rating themselves as largely unsuccessful and the remainder reporting some or significant success. As for helping parents learn about child development, 35% of centers shared this goal, although fully 30% of those with this goal felt they were not successful at realizing it. Just 16% of centers were focused on promoting literacy skills among parents, about 30% of which rated themselves as unsuccessful in this area. Thus a pattern appeared in which many centers embraced goals

for family outreach that included both child development and broader life issues but reported difficulty achieving these goals.

Question 2B: Opportunities for Family Involvement in Head Start

Centers on average reported 11 opportunities for family involvement in the center, although the range of this normally distributed variable included as few as 2 instances and as many as 16. The most commonly noted opportunity for involvement related to preparing and serving meals (all but one center invited parents to engage in this task), but more than 90% of centers also invited parents to recruit and mentor others (all but 5 and 8 centers, respectively). The least common opportunity for families involved conducting home visits (fewer than 1/3 of all centers permitted parents to do this).

Question 2C: Incentives for Family Involvement in Head Start

Regarding incentives provided to families for in-school involvement, the average total across programs was 4.65 out of 6, meaning that the use of these practices is rather common in Head Start, although responses did range from the minimum possible value (0) to the maximum possible value (1) on each item. There was great consensus on the provision of food (97% of centers did so) and childcare (94% of centers did so). The greatest variability was apparent on the use of interpreters, which 39 (or 32%) of the centers did not employ, and on transportation, which 26 centers (or 14% of the sample) did not provide.

Question 2D: Kindergarten Transition Activities

The average total score across centers on this scale was 5.22 out of a possible 7, although responses ranged from the minimum possible response of 0 to the maximum possible response of 7. Thus centers on average reported engaging in about 5 different

transition practices. Centers varied on each practice (i.e., at least 20% of centers did and did not engage in that behavior). The greatest diversity was apparent on the practice of holding a training for both Head Start and kindergarten teachers, jointly sponsored by Head Start and kindergarten programs, which half of Head Start sites reported doing. In contrast, the majority of Head Start centers (i.e., 83 to 84%) reported providing kindergarten programs with child records and meeting with kindergarten teachers. Despite the variability on each item, this was a fairly skewed variable, with 40 of the 138 centers that reported their outreach (or 29% of the sample) noting engagement in all 7 of these practices, thus overall these data show that many Head Start centers do attend to the kindergarten transition.

Question 3

The third research question involves relating these parent involvement and center outreach variables to child outcomes during the Head Start year. Four outcomes were examined: code-related skills were assessed using the Letter-Word (LW) subtest of the Woodcock-Johnson III, and receptive vocabulary was measured using the PPVT, as well as approaches to learning and classroom social competence.

Analytic Strategy

One model was tested for each outcome. Analyses were conducted using hierarchical linear models to account for the nesting of children within classrooms and of classrooms within Head Start centers. First, a fully unconditional model was constructed, including only the outcome in question and no predictors, in order to explore whether or not there was significant variance in the child-level outcome between classrooms and between centers (i.e., whether or not the data were in fact nested). If significant nesting

was identified at the classroom and center level, then a three-level hierarchical linear model was used to analyze that outcome. However, if significant variance was discovered at only one level or at neither level, then a two-level model was constructed with children nested within centers. Finally, if the outcome under examination did not vary significantly between level-2 units, then OLS regression techniques were used.

Models controlled for social background factors (e.g., ethnicity, maternal education, poverty and welfare status) as well as for aspects of the home environment (e.g., authoritative and authoritarian parenting), classroom environment (e.g., instruction in code and vocabulary, teacher/child relationship quality, teacher education, class size) and center (e.g., percent minority students and urban vs. rural location, both of which were necessary in the model because they control for important variables related to missingness). In multilevel models, variables were initially entered as group-centered in order to test whether or not the effect of the predictor on the outcome varied significantly across the units of nesting (i.e., Head Start centers). If not, variables were re-entered as grand-centered. All variables were grand centered in final models unless noted below tables and in the text. In addition, models controlled for children's fall skills on the outcome in question. Addressing question 3B, within-level and cross-level interaction effects between involvement/outreach and fall skills were tested in each of the models.

Results

Decoding (Letter-Word)

The fully unconditional model (FUM) showed that children's spring LW scores did vary significantly between centers ($p < .001$) but not between classrooms, likely because there were, on average, just four classrooms nested in a particular center ($p >$

.500). As a result, a two-level HLM was constructed, with children nested within centers. Classroom variables were placed at the child level.

Results of the final model are presented in Table 2.6. The intercept for this model, or the average spring IRT score on the Letter-Word measure for a child who began the year with skills at the mean of the overall sample, controlling for everything else in the model, was 367.89 points. IRT scores on the Woodcock-Johnson, while not as easy to understand as scores on a standard scale with a mean of 100 and a standard deviation of 15 points, are useful because they account for item difficulty and thus better show growth over the year. However, their meaning is illuminated by comparison to the IRT values on the Woodcock-Johnson that are available for the national population; the average spring IRT score for children of this age on the Letter-Word subtest is around 374, indicating that Head Start children are a bit behind their same-age peers. Another way to understand the scores of Head Start children relative to a normative population is to use standardized scores (where 100 is the national mean) to make this comparison. For children in this sample (i.e., 4-year-olds), the spring mean standardized score was 92.75, up from 91.82 in the fall of Head Start. This gain reflects a small but statistically significant difference.

HLM provides information about the child-, classroom-, and center-level variables that explain variation around this mean score. At the child level, a one-point gain in fall Letter-Word score, relative to the classroom mean, was related to a gain of .74 points ($p < .001$) in the spring, holding constant everything else in the model. Older children had an advantage over their younger peers ($B = 0.46, p = .014$), as did children of more educated mothers ($B = 1.43, p = .020$). Authoritarian parenting was inversely

related to spring score ($B = -2.21, p = .009$). Finally, neither parents' frequency of book reading nor their involvement at home in other activities was linked to children's Letter-Word skills. However, it was possible that the individual "teaching about letters, sounds and numbers" item that was part of the home involvement scale might predict children's letter knowledge without additional items in the scale such as "talking about Head Start" or "playing sports". Thus the individual item was tested, and results showed that, indeed, parents' focus on teaching their children about letters, sounds and numbers was marginally related to letter knowledge ($B = 1.70, p = .097$), explaining just one percent of the variance in the outcome.

At the center level, higher percentages of minority children enrolled were linked to stronger spring scores, over and above everything else in the model ($B = 5.82, p = .003$). None of the center-level outreach variables was significantly associated with children's letter knowledge, however encouraging parents to read more with children was associated with children's skills ($B = 2.02, p = .021$) after the effects of other variables in the model, uniquely explaining 16.4% of the variance at level 2.

Overall, the final model explained 45.6% of the variance between children in Letter-Word skills, and 49.4% of the between-center variance, with significant variance between remaining ($p < .001$).

Receptive Vocabulary (PPVT)

As with the Letter-Word outcome, the fully unconditional model (FUM) for the PPVT revealed that children's spring scores did vary significantly between centers ($p < .001$) but not between classrooms, likely because there were few classrooms nested in a

particular center ($p > .500$). As a result, a two-level HLM was constructed, with classroom-level variables entered at the child level.

Results from the final model are presented in Table 2.7. The intercept for this model was 73.86, meaning that the average spring IRT score on the PPVT for a child who began the year with receptive vocabulary skills at the mean of his/her classroom, controlling for everything else in the model, was just under 74 points. While the IRT scores were calculated for the FACES study alone and are useful because they account for item difficulty and thus better show growth over the year than standard scores, they make it difficult to compare FACES children to the rest of the population for whom these IRT scores are not available. It thus might be noted that the average spring standardized score (where 100 is the national mean) for children in this sample (i.e., 4-year-olds) was 91.20, up from 87.77 in the fall of Head Start.

At the child level, one additional IRT point on the fall measure of vocabulary, relative to the classroom mean, was associated with a half-point gain on spring skill ($B = 0.54, p < .001$) controlling for everything else in the model. This variable thus accounted for 30.4% of the variance at the child level. Withdrawn status was associated with lower spring skills ($B = -0.33, p = .020$), as was minority ethnicity ($B = -4.95, p < .001$). Child age was significantly related to vocabulary in spring ($B = 0.33, p = .003$). As for parents' partnership practices with the school, parents' book reading (as reported in the spring) with children was positively associated with vocabulary in the spring ($B = 0.54, p < .001$), explaining 7.1% of the variance in the outcome at the center level and 2.3% of the variance between individuals. In-school involvement was also positively related to vocabulary, however it was possible that not all of the various items on that scale were

equally linked to the outcome. Tests of the particular items with significant zero-order correlations to spring vocabulary showed that, in fact, parents' volunteering drove the positive association to vocabulary ($B = 0.65, p = .016$), explaining 0.5% of the variance between centers and 0.2% of the variance between individuals.

Concerning classroom contributors to vocabulary, only teacher-child relationship quality, as measured by the Arnett scale, was significantly associated ($B = 0.09, p = .013$). Finally, at the center level, only percent of minority students was a significant predictor of children's skills ($B = -5.41, p < .001$).

Overall, the model explained 57.2% of the variance at the child level and 56.5% of the variance at the center level; significant variance remained at the center level ($p < .001$).

Positive Approaches to Learning

Initial analyses showed that children's spring scores on the Approaches to Learning measure, as evaluated by their parents, did not vary significantly across classrooms ($p = .201$) or across schools ($p = .210$), and a two-level model revealed the latter effect as well. Consequently, ordinary least squares regression was used (see Table 2.8). Results showed that fall skills were a strong predictor of spring skills ($B = 0.51, p < .001$), but that over and above this relation, parents' authoritative practices were positively linked to approaches to learning ($B = 0.36, p = .002$) whereas authoritarian parenting was negatively associated ($B = -0.24, p = .008$). At the classroom level, the overall quality of the classroom (measured by the ECERS) was positively related to approaches to learning ($B = 0.13, p = .035$). And at the center level, approaches to learning were associated with successful outreach focusing on child development ($B =$

0.15, $p = .024$) and general life support ($B = 0.15$, $p = .008$). The model explained 29.3% of the variance in the outcome.

Cooperative/Compliant Learning-related Social Skills

The fully unconditional model found significant variance in preschoolers' spring teacher-rated classroom cooperation and compliance at both the classroom ($p = .021$) and center ($p < .001$) levels, thus a three-level HLM was used to explore the role of school-family partnership in the development of this skill (see Table 2.9). The intercept, or mean spring score, was 17 points on the scale (which ranged up to 24). Children with stronger fall skills relative to the sample grand mean had stronger spring skills ($B = 0.48$, $p < .001$); this variable alone explained 21% of the variance at level 1. Authoritarian parenting was inversely associated with spring skills, controlling for everything else in the model ($B = -0.38$, $p = .037$), as was welfare status ($B = -0.87$, $p = .031$). Higher quality teacher-child interactions were positively associated with cooperative/compliant development over the year ($B = 0.03$, $p = .018$), as was attending Head Start centers serving a high-minority population ($B = 1.23$, $p = .015$). None of the family- or center-level partnership variables were significantly associated with children's cooperative and compliant skills in their Head Start classrooms at the end of the year. The model explaining all significant variance at level 3 ($p = .075$) but explained just 27.1% of the variance at level 2, leaving significant variance ($p = .009$), as well as 29.8% of the variance at level 1.

Question 4

The fourth research question involved relating these parent involvement and center outreach variables to child outcomes from Head Start into kindergarten. As the

Letter-Word subtest was not administered to children during the spring of kindergarten, longitudinal modeling of development on this outcome was not possible. Thus only receptive vocabulary, approaches to learning, and classroom social competence were evaluated.

Analytic Strategy

In light of the goal to examine growth over three time points, growth modeling was used. A three-level model was again constructed, with the skill trajectory – involving measurements in the fall and spring of Head Start and the spring of kindergarten – at level 1. At level 2, models controlled for time-invariant child and family social background factors (e.g., ethnicity, maternal education, poverty and welfare status) as well as for aspects of the home environment (e.g., authoritative and authoritarian parenting, available home materials). Level 2 also included classroom environment variables (e.g., instruction in code and vocabulary, teacher education, affective quality of teacher-child interaction). At level 3, center-level variables were entered (e.g., center outreach, percent minority students, urban vs. rural location). Addressing question 4B, within-level and cross-level interaction effects were tested in each of the models.

For each outcome, a fully unconditional model was first constructed. This model tested variability across level-2 (i.e., children) and level-3 (i.e., centers) units in initial status and in growth over time (including linear and quadratic). Presuming that there was variability in either the initial status and in linear (and perhaps quadratic) change over time, additional predictors were added to explain this variability.

Results

Receptive Vocabulary (PPVT)

The FUM for the three-level growth model examining trajectories of receptive vocabulary learning did identify significant differences in initial status both between centers ($p < .001$) and children ($p < .001$), as well as differences in linear growth between centers ($p < .001$) and children ($p = .020$). There was also a quadratic growth term that did not vary between individuals or centers. Thus a three-level growth model was tested (see Table 2.10).

The mean initial status (or score in the fall of Head Start) for children in the sample was 68.01 points (again, using IRT ability scores that account for item difficulty). Mean scores in the raw data showed a positive trend in scores over time (fall of Head Start = 68.89, spring of Head Start = 75.33, spring of K = 88.47), and indeed HLM analysis found that growth in receptive vocabulary was reliably described as both increasing along a linear path ($B = 3.00, p < .001$) as well as accelerating along a quadratic path ($B = 2.96, p < .001$).

Controlling for everything else in the model, each additional month relative to the mean child age across the sample was linked to approximately one additional point in children's initial scores ($B = 0.90, p < .001$); maternal education was also positively linked to vocabulary knowledge at the start of the study ($B = 0.90, p = .003$). Children of more authoritarian parents had lower initial scores ($B = -1.09, p = .012$), as did those in the most disadvantaged families receiving welfare ($B = -1.69, p = .033$). The most substantial predictor of initial status was child minority ethnicity, ($B = -6.85, p < .001$), as minority children began Head Start with lower PPVT scores than their European-

American peers. Finally, children whose families reported more frequent book readings in the fall began Head Start with higher levels of skill ($B = 0.38, p = .005$).

Two center-level variables were included both to control for variables known to relate to missingness in these data and to account for potential neighborhood effects. Urbanicity of the Head Start program was not related to children's initial vocabulary knowledge ($B = -0.38, p = .65$), whereas going to school with a higher minority population was linked to lower initial skills ($B = -3.49, p = .005$).

Several child- and center-level factors were associated with the linear trend in growth. Younger children had a steeper slope in growth ($B = -0.12, p = .002$). In addition, minority children grew marginally more quickly than their European-American peers ($B = 0.90, p = .095$). However, in contrast to the previous model (see Table 2.7) examining change in vocabulary from fall to spring of Head Start, growth into kindergarten was not predicted by book reading or in-school involvement (measured either as a composite or just as volunteering).

The final model explained 82% of the variance in initial status between centers and 53.0% of the between-center variance in linear growth. In addition, 32.3% of the between-child variance in initial status was explained, although the model explained less than 1% of the variance between children in growth. Significant variance remained at both levels ($p < .001$).

It should also be noted that there was a high correlation between the randomly varying intercept and slope ($r = -0.97$), indicating that children whose initial skills were low grew relatively more than their initially knowledgeable peers. This effect is common with growth models, particularly those that include relatively few time points for repeated

measures (West, Welch, & Galecki, 2006), and while it does produce some multicollinearity that has the potential to undermine the accuracy of parameter estimates, the HLM program is quite robust to correlations among predictors (Raudenbush & Bryk, 2002). Future studies that might reduce this correlation by gathering data at more time points are detailed in chapter 4.

Positive Approaches to Learning

Families evaluated children's positive approaches to learning at three time points, however (as is apparent in Table 2.4), the FACES research team identified a ceiling effect during the Head Start year (mean score of 12 on a scale from 1-14), hence the measure was altered for the kindergarten year and the scale was expanded to a range from 1 to 40. Without careful examination of the overlap of the items, which is not possible in the present dataset (but could be undertaken in the future by Westat), it is impossible to make the two scales equivalent, thus growth modeling is not an appropriate analytic strategy. Instead, an HLM was conducted, with children's positive approaches to learning in the spring of kindergarten as the outcome. As children's skills in the fall and spring of Head Start were not highly correlated ($r = 0.48, p < .001$), both were included as possible predictors of children's skills in kindergarten. FUM analyses showed that a two-level structure was most appropriate, with children's approaches to learning at the end of kindergarten varying significantly across Head Start centers ($p = .002$, 10.4% of the total variance between centers).

The final model (see Table 2.11) revealed that, on average, children scored 25.85 points at the end of kindergarten. Approaches to learning were predicted by children's approaches to learning in the fall ($B = 0.93, p < .001$) and spring ($B = 0.68, p = .005$) of

Head Start. In addition, there was a unique association with parents' spring book reading ($B = 0.26, p = .018$), explaining 14.3% of the variance between centers. The final model explained 60.8% of the variance between centers, leaving no significant variance to be explained ($p = .060$). In addition, the model explained 11.6% of the variance between children.

Cooperative/Compliant Learning-related Social Skills

Fully unconditional growth models following children from preschool to the end of kindergarten found that initial status (which varied between children and centers ($p < .001$) was followed by positive linear growth path ($B = 6.03, p < .001$, which varied between centers, $p < .001$) but also by a flattening, or deceleration, of this growth over time ($B = -1.40, p < .001$, which did not vary at either level). This pattern is consistent with mean scores in the raw data, which showed a positive but flattening trend in scores over time (fall of Head Start = 15.49, spring of Head Start = 17.56, spring of K = 17.27).

Subsequent analyses (see Table 2.12) determined that children's initial status was higher with each additional month of age, relative to the mean ($B = .30, p < .001$), as well as for females ($B = 1.40, p < .001$) and for children in families using fewer authoritarian parenting strategies ($B = -.46, p = .025$). Looking at growth from this initial status over time, however, younger children grew slightly but significantly more quickly ($B = .06, p = .015$), and children in families receiving welfare grew more slowly than their peers ($B = -.68, p < .001$). Notably, the effects of volunteering in school and meeting with Head Start personnel, aspects of school-family partnership that were reliably associated with classroom-social-skill growth from fall to spring of Head Start, were not associated with cooperation/compliance into kindergarten. The final model explained 13.9% of variance

between centers and 19.7% of the variance between children in initial status but left significant variance in each to be explained ($p < .001$). The model also explained 0.6% of the between-center variance in linear growth, leaving some to be explained ($p < .001$). Finally, the model accounted for 2.4% of the total within-child variance.

Question 5

In the process of answering the central research questions, few direct effects of center outreach on children's literacy skills emerged. However, it might be the case that center outreach was associated with family involvement, which in turn predicted children's learning. To explore this possibility, two additional hierarchical linear models were tested. The first explored the degree to which center provisions of information about child development, book reading, literacy skills, or other resources that might help families predicted parents' book reading practices, controlling for other child-, family-, classroom- and center-level predictors. The second investigated the extent to which center invitations for in-school involvement were related to the frequency of family in-school involvement.

Analytic Strategy

Using HLM once again, one model was tested for each outcome. As before, the first step involved constructing a fully unconditional model that included only the outcome and no predictors, in order to explore whether or not there was significant variance in the family-level outcome between classrooms or between centers (i.e., whether or not the data were in fact nested). Initially, three-level models were again constructed, where Level 1 included family involvement and background variables. At level 2, center-level variables were entered (e.g., teacher-student relationship quality and

overall classroom quality). Level 3 included center-level variables (e.g., center outreach and both percent minority students and urban vs. rural location, necessary in the model due to patterns of missingness). If no nesting was identified at either level 2 or 3, a two-level FUM was tested, and if results again showed no nesting, then OLS methods were used.

Results

Spring Book Reading

The fully unconditional model indicated that family book reading in the spring varied significantly between centers at level 3 ($p = .002$) but not between classrooms at level 2 ($p = .273$), thus a two-level structure was used (i.e., families within centers). As expected, the FUM for this two-level model showed that book reading varied significantly across centers ($p = .001$), although just 11% of the variance was between centers.

The intercept for this model (see Table 2.13) was 4.45 ($p < .001$), meaning that, on average, families reported reading with children about every other day. No child- or family level factors predicted this reading, other than reading frequency in fall, relative to the center mean ($B = 0.37, p < .001$). Moreover, this effect varied across centers ($p < .001$). Center focus on reading was marginally inversely associated with reading frequency in spring, accounting for other variables in the model, but also explained some of the variance between centers in the effect of parents' reading in fall ($B = -0.11, p = .015$).

The final model explained 36.7% of the variance between centers and 41.1% of the variance between children. No significant variance in the random effect of fall book

reading frequency on spring reading remained, although significant variance in family book reading between centers remained in the model ($p < .001$).

In-school Involvement

Much as with family book reading, the FUM for this model revealed that there was significant variance between centers in family involvement in school ($p < .001$) but no significant variance between classrooms ($p > .500$). Consequently, a two-level structure was used.

As noted above, families on average reported a score of about 10 on the in-school involvement scale (intercept = 9.78, $p < .001$). Families of younger children were more involved ($B = -0.17$, $p = .007$), as were families who engaged in more frequent home learning activities in the fall of Head Start, including both book reading ($B = 0.30$, $p = .017$) and other activities ($B = 0.52$, $p = .001$). In-school involvement was not dependent upon teacher-child relationships ($B = 0.04$, $p = .185$), however there was a small but significant cross-level interaction between child age and teacher-child relationship quality ($B = -0.01$, $p = .036$), such that families of the youngest children were more involved when teacher-child relationship quality was high, whereas families of older children were more likely to be involved when teacher-child relationship quality was low (see Figure 2.2). Although accounting for approximately 1% of the variance at levels 1 and 2, respectively, a hypothesis test (which compares the variance explained in the model including this term to the variance explained without this term) found that this term did make a significant contribution to the overall model (Chi-square ($df = 1$) = 4.39, $p = 0.03$), thus it was retained.

Accounting for these predictors, the model (see Table 2.14) explained 46.5% of the variance between centers, although significant variance remained ($p = .001$). The model explained 6.3% of the variance between individual families.

DISCUSSION

Summary of Findings

This study explored the unique contributions of parent involvement at home, in Head Start, and through personal communication with Head Start; as well as of Head Start centers' family outreach goals and practices, to the early literacy and learning-related social skills of preschoolers at risk. Findings revealed that, in general, Head Start families reported regular (i.e., every other day) involvement in children's learning at home through book reading and other activities and were involved at the Head Start center upon multiple occasions over the course of the year. However, they communicated relatively rarely with Head Start personnel, attending an average of one scheduled conference or home visit and one meeting annually. Centers varied in the goals they emphasized for families, although goals targeting both school readiness (e.g., teaching about child development) and broader family strength (e.g., promoting economic self-sufficiency among families) were prominent. Yet a significant minority of centers perceived their efforts to advance these goals as largely unsuccessful. Regarding outreach to families, centers reported providing a constellation of opportunities for family involvement in Head Start and incentives to promote this involvement. Overall, then, it is clear that multiple family involvement practices, long featured as an important component of Head Start's ecological view of child development and learning, are reported to be a priority among the majority of families and centers.

Multilevel models reveal positive associations between these family and center practices and children's school readiness skills during the preschool year, although effects are not universal. HLM results showed that families' teaching of letters and sounds was marginally linked to children's code-related knowledge during the Head Start year, while their book reading practices at home and their in-school involvement (particularly volunteering) were linked to children's vocabulary learning through preschool. In contrast, however, none of the family involvement variables tested were related to children's approaches to learning or to their cooperative/compliant skills in the classroom. As this pattern was consistent when considering growth of children's skills through kindergarten, no sleeper effects were apparent.

As for center-level family outreach variables, only emphasis on reading predicted literacy skills (and, specifically, decoding skills) during the Head Start year. Beyond literacy skills, center focus on providing parents with information about child development and about opportunities for general support resources (e.g., education and mental health services) was linked to more positive approaches to learning among children in the spring of Head Start, controlling for children's dispositions in the fall. Effects did, however, wash out by the end of kindergarten. In addition, exploration of potential indirect effects of center outreach on child skills through family involvement showed that center-provided opportunities for in-school involvement were indeed related to families' in-school involvement. However, somewhat more complex was the finding that centers' emphasis on reading with children was inversely linked to families' book reading and work on letters and sounds at home.

Taken together, then, results from these analyses reveal that both family involvement and center outreach make a difference in aspects of Head Start children's school readiness during the preschool. However, they also show that these effects are not universal but rather are quite selective, and that they are limited to the preschool year.

Frequency (or Lack Thereof) of Partnership Practices

Most fundamentally, results from Questions 1 and 2 regarding the nature and frequency of family involvement and center outreach suggest that, overall, both families and centers engaged in regular partnership practices. Moreover, families reported diversity in the ways in which they were involved with their children's education at home and in Head Start. These descriptive results alone are important because they provide support for the idea that, despite important differences in high- and low-income homes (Dickinson & Tabors, 2001; Hart & Risley, 1995, 1999), high-poverty families can indeed be engaged teachers of their children (Raikes et al., 2006). Head Start centers also reported embracing a variety of goals and offering many different opportunities for in-school involvement, incentives for this involvement, and supports for the kindergarten transition. Unfortunately, the scale upon which center directors and families rated the frequency of outreach and involvement (a dichotomous scale with choices of never vs. once or more, or a three-point scale with a maximum rating of three times a week or more) obscured precisely how much outreach and involvement actually took place.

However, personal communication (as reported by families) is an interesting exception to this trend of regular and varied partnership; indeed, there was remarkably little variability in the frequency of communication among families, which may in part explain the absence of a relation between personal communication with Head Start and

child outcomes. This finding begs the question: why would it be that, in a program with strong philosophical motivations and historical precedents to individualize curriculum for young children and to get to know individual families, few families report frequent personal discussions with teachers? Perhaps this specific kind of interaction is not fostered among Head Start among families, despite a theoretical rationale to do so. It could simply be that this kind of personal interaction involves a good deal of time and effort on the part of families and teachers, in that they must reach one another amid hectic lives – perhaps just to set up an appointment for a phone or in-person conversation – and then devote time significant portion of their time to this interaction. Just showing up for a morning of volunteering in the classroom once each season may be an easier arrangement for busy parents and teachers to make. Further, this situation may be exacerbated policy (or lack thereof). For example, Head Start centers are required to show a certain degree to in-kind donation by the community they serve, of which family in-school involvement can be a part. Yet there is no mandate that center officials or teachers should talk with families more than once or twice per year at a conference or home visit. And without such a mandate, it could be quite difficult to squeeze communication into otherwise busy schedules.

Finally, it is also possible that more frequent communication would have been identified had different questions about these interactions been posed to families – and to teachers, who were asked no questions about this in the FACES study. For example, other scholarship (Rimm-Kaufman & Pianta, 2005) on parent-teacher interactions in high-poverty preschool and kindergarten programs has revealed variability in informal parent-teacher discussions at drop-off or pick-up, phone calls, and other informal

meetings. Asking specifically about these different kinds of interactions might be revealing. Moreover, not only might a richer dataset better illuminate the nature of personal communication between families and Head Start centers, but it might reveal more specific associations between this kind of involvement and children's skills.

Lack of Success in Head Start Center Goals

Another intriguing finding in these descriptive data relates to the number of Head Start centers reporting a lack of success in achieving the goals that they emphasized for families. One possible explanation is that centers target goals that are of particular import to the populations they serve; in other words, goals may in fact reflect the needs of the population. (That said, it is important to note that the FACES data do not provide sufficiently specific information to firmly support this supposition; more qualitative work is needed.) Thus centers that emphasize child development may have particularly young or poorly educated populations of parents who are likely to know little about recent research in children's learning and maturation.

Perhaps, then, these concerns about successful implementation of goals actually reflect the real-world challenges for Head Start centers of mounting what is in essence an intervention with families to provide solid, specific information about children's learning and development. In many cases, these challenges are likely quite substantial and may require significant investments of time and money that exceed the resources available in programs focused primarily on providing interventions for young children. As a result, many Head Start centers may be somewhat ill equipped to accomplish the critical and complex family-related goals they set out meet. Exactly what practices are needed to improve the situations of high-poverty families, particularly with regard to knowledge of

and practice around school readiness for children, remains ill-understood (Powell, 2005) that demands additional work. Thus it is somewhat uncertain what resources or practices would be most likely to promote successful family outreach. Important questions for future research include what specific goals centers (as represented by center directors) embrace (e.g., what particular information about child development do they want parents to learn about), how centers define “success” for each of these goals, and why they rate their efforts as they do. It would also be useful to know what additional supports or resources center directors – and the families they serve – might find useful in the effort to improve the efficacy of their outreach around these goals.

Family Involvement and Literacy Skills

Among the central questions of this study was the degree to which family involvement at home, in school, and through communication was positively associated with children’s literacy skills, over and above other social background and schooling factors. Findings do indeed illuminate this issue and have implications for both future research and practice.

Code and Vocabulary Are Not Created Equal

Findings showed that family involvement was linked to code and vocabulary skills in very content-specific ways, highlighting the relevance of recent research from the field of early literacy for the literature on early school-family partnership. More precisely, the finding that families’ at-home instruction in letters and sounds was marginally linked to children’s code-related knowledge during the preschool year, while book reading was linked to vocabulary, was consistent with other research (see Evans, Shaw, & Bell, 2000; Sénéchal, LeFevre, Thomas, & Daley, 1998) and provides useful

replication with a uniformly low-income population. Moreover, that the patterns of association between family involvement and literacy skills differ for code and vocabulary outcomes provides further evidence of the important distinctions between these disparate although related skills and of the specificity of the links between what parents do and what children learn. That code and vocabulary knowledge are comprised of very different sorts of skills and taught in very different ways indicates that discussion in Head Start about promoting “early literacy” skills in young children might better be framed as enhancing “early decoding- and vocabulary-related” skills, with careful attention to the different developmental trajectories and instructional practices that characterize each of these.

Family Involvement and Code-Related Skills

Family At-Home Involvement Predicts Code-related Skills

The code-related skills of letter identification, sound awareness, and sound-symbol correspondence are, in essence, paired associates tasks that are generally quite sensitive to instruction. The sole item reflecting home instruction in letters and sounds was a marginally significant predictor of these skills, a result that underscores the power of this specific kind of interaction for children’s knowledge. However, it is important to note that parents’ letter instruction was a marginally significant predictor and explained little (less than 1%) of the variance in children’s skills. This is quite possibly related to the fact that families were asked only one question explicitly addressing code-related instruction at home. Future work might include other relevant items that tap the frequency of naming letters in the child’s own name or in the surrounding environment, singing the alphabet song, reading alphabet books, saying nursery rhymes or jump-rope

chants, or writing letters and words. Such specific attention to parents' teaching of code-related information might yield significant, rather than marginal, effects and better tap the range of activities that families in poverty could use to promote early reading among young children. Further, the inclusion in this item of teaching children about numbers may add noise to these data, and future studies might add more math-related items to create a separate subscale.

Null Effects of In-school Involvement and Personal Communication on Code Skills

Also of note are the aspects of parent involvement that did not predict children's decoding skill. Neither in-school involvement nor conferences/meetings had a unique effect on this constrained skill. These specific associations have not previously been examined in a Head Start population (although Fantuzzo and colleagues have come close), so replication with other similar populations – such as the three-year-old subsample of the FACES 2000 data, the three- and/or four-year-olds of the FACES 1997 data or the forthcoming FACES 2003 data, or other Head Start or preschool samples – will be necessary before firm conclusions can be drawn.

Even so, several explanations for the null effects found in this study are possible. The most straightforward is that parents' time as classroom helpers and their personal conversations with school personnel are not reliably linked to children's code-related development because classroom volunteering experiences and conversations with Head Start personnel do not teach parents anything new about strengthening children's code-related skills. For example, in volunteering, parents could be focused on following teachers' instructions or managing children's behavior in activities; if they learn about child development and education through this experience, they might be more likely to

attend to practices at a larger “grain size,” such as how often teachers talk with children or how they enforce classroom rules and regulations. Similarly, one-on-one meetings with Head Start personnel might be focused on other issues, such as general social science knowledge.

An alternative explanation for null effects relates to the ways in which these variables (and particularly meetings and conferences, which predicted neither literacy outcome) were measured. In this study, just two items were employed to gather information from parents, and no information about communication was collected from center directors or, critically, from teachers, who are likely to be the “front line” for family communication. Moreover, the correlation between these two items was low, thus each had to be examined independently. Future work in this area might involve the use of self-report questionnaires for both parents and teachers with more communication-related items using more sensitive scales.

Family Involvement and Vocabulary

The dimensions of family involvement measured in the FACES data demonstrated intricate connections to children’s vocabulary skills.

Vocabulary Development and Family Involvement through Book Reading

As noted in the review of the literature in Chapter 1, vocabulary learning is somewhat similar to training in code skills, in that learning a new word typically involves multiple opportunities to hear and use the word in ways that make its definition clear (Hindman & Wasik, 2007; Stuart, Masterson, & Dixon, 2000). However, vocabulary knowledge is quite distinct from code-related skills in that word learning involves very different kinds of interactions. For example, conversations with others, book readings that

expose children to rare words, and conversations during book reading provide meaningful opportunities for children to hear and use (and, ultimately, remember) new words.

As hypothesized, book-reading practices at home emerged as an important predictor of children's vocabulary. While this variable was linked to just 3% of the variance in vocabulary skill at the end of Head Start, this value is not substantially different from previous meta-analyses of studies employing OLS regression models which found that book reading explained about 8% of children's reading competence (Scarborough & Dobrich, 1994). Thus this Head Start dataset confirms and extends earlier findings regarding the import of book reading.

One interesting nuance in this finding is that book reading as reported by parents in the spring, rather than book reading in the fall, predicted children's word learning during Head Start. Although these fall and spring measurements are moderately related, there was no significant change across families over the course of the year ($t(749) = 0.78$, $p = .44$). Moreover, there was no systematic change among families of particular ethnicities or child skills (Hindman & Morrison, 2005). Thus it was as likely that a particular family would increase their book reading as it was that they would decrease their reading. Consequently, it is not the case that spring reports of reading reflect more reading which, in turn, perhaps promotes children's skills. Instead, it may be the case that families adjust their book reading practices over the course of the year to better suit children's interests, or perhaps families become more accurate at estimating children's skills.

Inverse effects of center outreach variables on book reading. Why did center emphasis on the import of reading inversely predict the frequency of families' book

reading with their Head Start preschoolers (in contrast to hypotheses)? This finding may well suggest that centers with populations who are particularly struggling employ more outreach around reading, but that this outreach is not necessarily successful in changing families' practices. In general, the literature (Powell, 2005) does not suggest that family literacy interventions are highly successful. Rather, interventions with high-poverty parents of preschoolers tend to have small and spotty effects, even when delivered by highly qualified personnel (Pfannenstiel, Lambson, & Yarnell, 1996; Wagner & Clayton, 1999; Wagner, Spiker, & Linn, 2002). By extension, Head Start centers may emphasize book reading when they perceive that families really need to learn about this, however these efforts may not result, over the course of the first year of Head Start, in more home readings.

However, center encouragement for reading was positively (albeit marginally) associated with code-related skills. Given the differential associations between book reading and vocabulary and letter instruction and code knowledge in the broader literature as well as the present study, this may suggest that centers reporting emphasis on reading more also emphasized other kinds of home literacy activities, perhaps more successfully than book reading. That said, it is crucial to note that the reading item was the sole item posed to center directors reflecting encouragement for families to engage in specific kinds of literacy instruction at home. Thus it may be that centers reporting an emphasis on reading actually focused more on enhancing home involvement in other academic skills, including code-related skills, which are in turn linked to children's learning of these highly trainable skills. Again, more specific questions for center

directors or even observation of center practices would illuminate these remaining questions in future work.

Family Involvement and Vocabulary: In-school Involvement

Beyond book reading, as hypothesized, in-school involvement, and particularly volunteering, was linked to vocabulary growth over the preschool year. This finding is a novel one in the field, complementing prior work by Fantuzzo and colleagues suggesting that, during the Head Start year, families' in-school involvement could promote early skills. These data, however, identify the "active ingredient" in this composite variable and extend this finding longitudinally into kindergarten. Still, somewhat uncertain is the precise mechanism through which in-school participation, and volunteering in particular, is actually positively linked to children's vocabulary skills. It is certainly possible that, when volunteering, parents engage in instruction and/or observe teachers' discourse practices with children, which may later provide parents with ideas for working more effectively with children at home, in turn building stronger word learning among children. Similarly, volunteering may help parents build relationships with teachers that could result in discussions of particular activities or materials that would be helpful for children.

However, there may be a third variable in play. Although at a level of detail far beyond that provided by the FACES data, there is much anecdotal evidence from Head Start to indicate that, for many parents, volunteering involves chores such as preparing materials or washing down tables, and may not provide rich opportunities to learn about their own children or about instruction. Thus differences in background characteristics of parents who volunteer relative to those who do not could be important to consider. For

example, even controlling for other social background factors, it may be the case that particularly pro-social parents are more likely to volunteer. These same social inclinations may be linked to greater proclivity for conversations with children, which ultimately promote vocabulary. Alternately, parents who are more committed to being actively involved in their child's learning may volunteer; along these lines, it is interesting that parents who are more involved at home are more likely to volunteer (even though volunteering still predicts vocabulary over and above these other home-based activities). At the risk of redundancy, it should be noted that more detailed questionnaires, interviews, or observations in future work would help to untangle some of these questions.

Associations between parent volunteering and center-based involvement opportunities. In any case, the effort to promote in-school involvement such as volunteering in Head Start – not only to improve child outcomes but to provide classroom support – can be informed by findings that in-school involvement is positively associated with center-provided opportunities, irrespective of incentives. A useful “take-home” finding for center directors from these data is the idea that creating multiple chances for parents to be involved at the school during the year is likely to increase this involvement. Further, parents of young children are more likely to be involved in school, perhaps because younger children are often viewed as more vulnerable and parents hope to keep an eye on them (and the teacher). Complementing this main effect, however, a small interaction effect shows that parents of older children are more likely to be involved at school if teacher-child relationship quality (as measured by independent observers using the Arnett scale) is low. Thus parents' ideas about teacher quality, and particularly

teachers' affective warmth, harshness, and organization control, may play an import role in their decisions to become involved in Head Start. It is interesting to note that many parents are relatively novice observers of classrooms, with only the apprenticeship of their own experience and the guidance of friends and relatives to draw on as they make judgments about classroom quality. From this perspective, teachers' warmth and overall organization during back-to-school nights or other initial meetings with families may be particularly salient for parents, perhaps even more than teachers' use or discussion of evidence-based literacy instruction.

Center Outreach and Literacy Skills

In general, there were few direct effects of center-level outreach on these child skills; for the most part, center outreach was most strongly associated with family involvement and thereby indirectly linked to child outcomes. These findings help to clarify the processes through which Head Start centers and families can work together to promote early literacy skills and, in so doing, highlight the import and promise of how families promote early learning.

Null Effects of Center Emphasis on Child Development and Literacy Skills

It was expected that a center-level focus on helping families enhance their understanding of child development and strengthen their own literacy skills would promote book reading. Yet these findings did not emerge. Interpretation of these findings is imperiled by the absence of qualitative information about what "child development" information actually amounts to. Presumably, it involves sending home information about what book reading is important, what books to read and how to engage children, and perhaps even providing books. For example, child development information might

include materials about what school readiness skills are important, how they develop, and how individual children are progressing in this regard. In any case, more research is necessary to uncover what centers do to meet these objectives; it may be that the use of this umbrella term actually obscures important distinctions. For example one center might send home information about developmental trajectories of literacy skills, while another might send home information about physical development; these might well help parents to promote very different kinds of skills. This issue demands closer examination in future research.

Null Effects of Incentives for Code and Vocabulary Skills

No significant effects of incentives on family involvement or child outcomes, nor any indirect effects through in-school involvement, were identified. This may indicate that the incentives offered by Head Start are actually not at all related to families' in-school involvement. Alternatively, however, the measurement scale for incentives may have been too insensitive. Asking centers whether they had ever offered any particular incentive may simply not capture important diversity in these practices. For example, it is plausible that centers might offer many incentives at the start of the year in order to capture families' attention early on but provide fewer over time as monies run low. This variability may well attenuate the link between incentives and involvement. A more sensitive and specific measure of the frequency of use of various different incentives during the year might engender different results.

In sum, analyses uncovered a complex but specific network of associations between family involvement, center outreach, and early code- and vocabulary-related

skills among low-income preschoolers and clarify important areas for further attention in practice and research.

Learning-related Social Skills and Early Literacy

In general, the role of learning-related social skills in code and vocabulary development, controlling for everything else in these models, was quite small and specific. Withdrawn behavior was inversely associated with vocabulary learning over the course of the Head Start year, although this effect was not apparent by the end of kindergarten. That withdrawn status did not predict children's code-related skills suggests that its relation to vocabulary is not an artifact of shy children experiencing difficulty in communicating with assessors. Thus this result may well dovetail with other research suggesting that conversations with peers is an important vehicle for vocabulary acquisition among preschoolers (Connor, Morrison, & Slominski, 2006; Fantuzzo, Sekino, & Cohen, 2004), and that shy children may miss out on some of these important opportunities. A separate but perhaps concomitant possibility is that, because word use is linked to word learning, withdrawn children may have more difficulty than their sociable peers encoding new words. Finally, a third possibility is that shyness does not delay vocabulary learning, but rather that low levels of vocabulary engender shyness due to insecurity about and difficulty in communicating one's own ideas and opinions with a small vocabulary. It is interesting that this effect is apparent during Head Start but not kindergarten; this could suggest that Head Start, despite its focus on early social development, could improve its approach to helping shy children engage in word learning opportunities. Yet it could also indicate that Head Start helps shy children lay the foundation for successful kindergarten experiences, because of which the negative effects

of withdrawn status on vocabulary disappear one year after preschool. Replicating these analyses with three-year-old children who spend two years in Head Start might clarify this issue.

One indirect effect of social skills on learning comes through the finding that, all else in the model being equal, parents read books more frequently with children who demonstrate more interest and engagement in learning (i.e., higher scores on the parent-rated positive approaches to learning scale). Given the associations between book reading and child vocabulary in Head Start and over time, intervention work might consider ways to help families address flagging motivation – particularly around book reading – in young children.

Finally, the relative absence of strong links between social and literacy skills does echo some prior work (McClelland, 2000) indicating that the learning-related social skills herein explored become more closely associated with literacy skills as children progress into kindergarten. However, the fairly weak relations between literacy and social skills may well be grounded in the nature of the particular social skills measured. While problem behaviors, cooperative classroom skills and approaches to learning were assessed, no pure assessment of self-regulation was conducted, despite its rapid development during the school transition period and close connection to learning. Future work might carefully measure this skill and test its associations with code and vocabulary skills.

Learning-related Social Skills and School-Family Partnership

In general, the pattern of associations between family involvement or center outreach and social skills is quite different from the pattern of relations apparent with literacy skills.

Family Involvement, Approaches to Learning, and Cooperation/Compliance

These data show that, over and above the contributions of social background factors, gender, and parenting styles, none of the practices related to family involvement at home, in school, and through conferences and meetings were significantly linked to growth in either positive approaches to learning or cooperative/compliant skills during Head Start. These results, somewhat dissonant with the long-standing focus in Head Start on social development and contrary to initial hypotheses of this study, add to an emerging body of work on parenting and early learning-related social skills which suggests that both parents' affective behaviors (i.e., warmth/ responsiveness and management/ discipline) and their instruction can promote children's social skills (Hindman & Morrison, 2007, Estrada et al., 1987). It thus appears that these particular aspects of parenting –home learning activities, in-school involvement, and meetings – are not the aspects of parenting that are most closely and reliably associated with social skills.

This finding, in turn, raises once again the questions noted above regarding the uncertainty of exactly what sorts of activities take place during at-home, in-school and communication partnership practices by families. It is quite possible that, in the course of these activities in Head Start, parents are not focusing on children's early motivation to learn or on their social skills. Indeed, coming as they do out of a field interested largely in academic skills and the social behaviors that can promote them, it is possible that the

family involvement activities organized along these three dimensions are generally oriented toward academic discussion. For example, book reading may have some peripheral impact on children's attachment (Bus, Belsky, Van IJzendoorn & Crnic, 1997), but social skills are likely most discussed with children in the wake of important transgressions (i.e., during interactions around discipline) (Gardner, Sonuga-Barke, & Sayal, 1999; Miller-Lewis et al., 2006).

These data may also indicate that parents focus their at-home, in-school, and communicative involvement on other social skills such as self-regulation/self-control, or on skills not typically considered "learning-related," such as making friends and resolving conflicts. Here again, follow-up studies investigating the focus of parent involvement at home and school through detailed survey or interview would be potentially quite helpful.

Center Outreach, Approaches to Learning, and Cooperation/Compliance

Center emphasis on providing parents with information about child development and about other general resources for support were linked to children's approaches to learning at the end of preschool, although each predicted only a small gain in spring skills controlling for everything else in the model. Contrasting these effects with the absence of significant associations between center-based outreach and children's classroom cooperative/ compliant skills, it is likely that these aspects of center outreach promote a more affectively positive and/or academically enriched home environment, which in turn is linked – through mechanisms beyond family involvement in early learning – to children's motivation to learn. Providing parents with information about child development may help them to provide more developmentally appropriate activities and

management at home that, in turn, are positively related to children's engagement in learning opportunities. Similarly, given the complexity of the approaches to learning construct (discussed in Chapter 1), which includes genuine child preferences for particular activities, as well as underlying issues that foster engagement in *any* task such as child physical and mental health and nutrition, providing parents with education, nutrition, and mental health resources may be linked to a healthier home environment and thus to healthier children with healthier engagement in learning (among other things).

Finally, it is also conceivable that the provision of information by centers about child development and broader life resources is linked to gains in parents' knowledge of what positive approaches to learning among children really are. This understanding, in turn, may be linked to gains over the year not in children's actual approaches to learning, but in parents' perceptions of these approaches – whether accurate or inaccurate. Sorting through these multiple possibilities could be advanced by more specific information about (as noted above) what particular child development and general life support resources are provided to families and how families use them, as well as by objective measures of approaches to learning by trained examiners observing children in authentic settings.

Absence of Longitudinal Effects

Effects of family involvement and center outreach during preschool were no longer significant at the end of kindergarten, in contrast to some previous work on early learning using the ELCS-K data (Schulting et al., 2005) but in line with previous work on Head Start specifically (Seefeldt et al., 1998, 1999). Particularly where family involvement is concerned, this pattern may indicate that, in some cases, the information

and resources that centers provide and the behaviors that families use to participate in children's learning at home and in school do affect children's learning environments and thus the change in their skills from fall to spring of preschool, but that these behaviors are not necessarily sustained into kindergarten. In other words, some families may adjust their book reading practices during Head Start in ways that positively relate to children's vocabulary, however they may not continue to read books as often or in the same ways. It is also possible that partnership practices in Head Start are tailored to particular skills that preschoolers are developing, such as vocabulary for specific animals, and that the content of this outreach/involvement is no longer as relevant to the frontier of children's knowledge (i.e., their zones of proximal development) after that preschool year. In any event, these data provide strong evidence for the hypothesis that, in Head Start, effects of school-family partnership do not generally endure after children progress into kindergarten. Examination of the learning of children who spend two years in Head Start would be helpful in vetting these hypotheses.

Comments on General Pattern of Findings

Apart from the individual effects (or lack thereof) discussed above, it is important to note an overall trend in these data. Aspects of school-family partnership do contribute to particular child outcomes, over and above a wide variety of background variables. These findings are valuable because they highlight additional pathways through which teachers and families contribute to critical early learning. At the same time, however, it is the case that many null (and even inverse) effects also emerged, and that the overall pattern of significant and non-significant associations does not lend itself to clear interpretation. The substantial sample size in the FACES data; the quality of the child,

family, and educator measures employed (with the exceptions of some school-family partnership measures detailed above); and the rigor of the statistical analyses implemented significantly reduce the likelihood that this patchwork of effects is related to methodological flaws in the study. Moreover, other work on family involvement in Head Start and early literacy and social skills has arrived at a similar mosaic of effects (see references for Fantuzzo and colleagues).

Instead, as briefly noted above, these findings raise questions about what families and centers actually do and say under the umbrella terms of “outreach” and “involvement.” Indeed, the specific nature of the school-family partnership phenomenon remains quite unclear. It is possible that the behaviors that educators and families implement are quite variable, particular with regard to the probability that they would enhance children’s learning. At present, there are very few detailed qualitative or quantitative studies of Head Start families’ in-school and communication practices, and some – but not a lot – of research on home-based activities such as teaching about decoding and reading books. And, as noted above, teacher outreach practices remain particularly unclear. In sum, then, future research will be necessary to clarify the processes that underlie this pattern of effects, however the presence of positive associations between school-family partnership and child skills – even amid noise in the data – suggests that this endeavor is worthwhile.

LIMITATIONS OF THE PRESENT STUDY AND FUTURE DIRECTIONS FOR RESEARCH

This first study included several limitations that constrain what we can infer from its findings but also lay important foundations for future research on these partnership constructs.

Use of Center-Director Data on School Outreach

The reliance upon center directors to gather information about Head Start outreach to families introduced two shortcomings.

Missing Data

One substantial limitation to this study is grounded in the substantial missing data regarding center outreach. A significant minority of center directors did not answer questions about center goals, opportunities, and incentives for family involvement, or about kindergarten transition practices. Moreover, accurate imputation of these data was undermined by the absence of available center characteristics that reliably predicted outreach. Without such information to guide estimates of missing data, the resulting variables had little correlation to each other (in contrast to patterns apparent in the raw, observed data) and no associations to child outcomes. While list-wise deletion of these centers from the study sample was, as a result, the most appropriate strategy, this missingness compromises the generalizeability of these findings. Although still an advance over much prior work in early childhood, given that the remaining sample size of approximately 100 centers and 800 children is still relatively large, the FACES study was designed to be nationally representative. In light of the probability that urban and

high-minority Head Start centers would have missing center director interviews, this subsample with complete data can be assumed to represent the nation as a whole.

Addressing this issue in future research is likely to be challenging. The FACES study was a well-funded undertaking with a sizeable staff available to conduct interviews. Surely Head Start center directors are busy people who manage complex programs serving many children and families. However, before the next large-scale study of Head Start, resources should be invested to explore what incentives or structures would make center directors more likely to participate.

No Information Gathered from Teachers

An additional shortcoming related to the practice of interviewing center directors relates to the issue of whether or not they are, in fact, the most reliable sources of information about outreach. It is possible that more accurate data could be collected if some or all of the questions that center directors answered – especially about outreach to families – could be posed to classroom teachers. Teachers may actually have control over a good deal of the outreach that center directors discussed and might be able to illuminate still more detailed issues such as the content and frequency of information sent home to families (which was not assessed in the FACES study). Teachers also participated in the FACES study at a higher rate than center directors, perhaps because teachers received pressure from higher-ups (such as center directors) or because the financial incentives provided for participation seemed relatively larger to them, given their lower salaries. Thus teachers might prove to be somewhat more informative and more reliable participants for future work on school-family partnership. Data from Rimm-Kaufman and

Pianta (1999) indicate that gathering teacher data on school-family partnership can be highly effective with early childhood programs serving low-income populations.

Specificity and Comprehensiveness in Interview Questions

Another important limitation relates to the fairly narrow range of questions posed to center directors, teachers and families in the FACES study. An adage goes, “Our understanding is limited only by the questions that we ask,” and the tools that interviewers used to collect information from participants in this project most certainly shaped the quality of the information that was ultimately gathered.

Investigation of Partnership Practices by Schools and Families

These data, and other work in the field, indicated that some parent and school practices (e.g., reading with children) are closely linked to child literacy learning, whereas others (e.g., center goals) are only a distal influence. Focusing in on the behaviors that are most likely to promote early literacy – families’ at-home and in-school involvement and their communication with Head Start – and the center outreach that supports those specific behaviors could explain more variance in child skills. Along those lines, center directors were not explicitly asked about many aspects of outreach to families around early literacy. For example, as noted in the previous limitation subsection, no questions were asked about the information that center personnel send home to families including classroom newsletters or homework. Beyond center-director reports, even stronger information might be gathered from classroom teachers as well. Indeed, classroom teachers are likely to be the “front line” in the dissemination of information to parents, thus knowing what behaviors they engage in (e.g., what materials they send home and how often) would be illuminating.

More Precise Item Scales

The scoring of the in-school involvement items was quite broad. Asking about whether centers never provided a particular opportunity or did so at least once obscures differences between centers that provided multiple workshops per year and those who offered just one or two. In contrast, a Likert scale with 5 or more categories is likely to provide better variability and accuracy. Moreover, this level of specificity has the potential to explain a good deal of variance in parent involvement and child outcomes and might be used in future work.

Content Focus of Outreach and Involvement

Given the work of Sénéchal and colleagues, it is quite possible that the links between early literacy skills and center outreach strategies (such as offering workshops about early learning) depend at least in part on the content focus of the outreach. In other words, a workshop helping parents promote children's literacy skills is likely to be associated with literacy development rather than with math skills. Thus asking about the content of outreach practices – even at a general level that distinguishes between literacy and social foci – could provide both valuable descriptive information about what issues are actually addressed by parent-teacher partnership in American preschools and, ultimately, important estimates of the relative impact of partnership around different kinds of content on children's skills.

Exploring a More Extensive Battery of Literacy Outcomes

The FACES study assessed children's decoding and vocabulary skills. While tapping the two critical processes that figure heavily into the simple view of reading (Gough, Ehri, & Treiman, 1992), future research might be more revealing if a broader

range of outcomes were examined – particularly in the preschool year, which emerged in Study 1 as more closely associated with preschool school-family partnership practices, relative to skills measured at later (i.e., kindergarten) time points. As noted in Chapter 1, decoding involves the coordination of a number of processes, including letter recognition and sound awareness (Teale & Sulzby, 1992). Thus examining not just vocabulary and decoding, but also the component processes of the latter skill set, might well provide a more comprehensive and sensitive assessment of children’s progress toward fluent reading, and thus a more precise estimate of the role of school-family partnership in this progress.

Exploring a More Extensive and Specific Battery of Social Skills

The FACES data included information about approaches to learning and general classroom social behavior. However, as detailed in Chapter 1, these are broad composites of specific social skills that may obscure important distinctions between component skills. Therefore, the FACES data did not permit examination of school-family partnership and particular core skills such as self-regulation. There are at least two reasons for which more extensive exploration of the link between self-regulation and school-family partnership might be productive. First, self-regulation (or the more colloquial self-control) is a topic of much discussion in the popular media, a resource that often shapes ideas among ordinary families about what aspects of child development are important and how they should be addressed, from magazines such as *Parenting* to television shows such as *Super Nanny*. Similarly, a lack of self-control among children was a serious concern for the teachers surveyed by Pianta and colleagues (1999). Thus it may figure into the content about which schools and families communicate in the early

years of school. Second, self-regulation underlies cooperation and compliance as well as sustained attention to instruction, hence understanding the potential contributions of school-family partnership to this skill might generate important and practically useful information regarding additional pathways through which parents and educators could foster school readiness.

Diversity of Participants

The FACES study provides important information about low-income children and families and the centers that serve them. This population is an important part of the nation's citizenry, particularly because children in this group are at particularly high risk for reading difficulty and even failure (Lee & Burkham, 2002). However, this sub-sample of the American community not representative of American preschoolers and educators more generally, thus conclusions drawn regarding analyses in the context of the Head Start program are not necessarily generalizeable to the broader population. Exploring these same issues of the nature of school outreach and family involvement, and their effects on early literacy and social skills, in a more sociodemographically diverse sample might provide an interesting test of the relations found in Study 1.

The second study of this dissertation addresses these issues by posing more specific questions about family involvement and school outreach to parents and educators in a sociodemographically diverse community and examining their associations with a wider variety of literacy and learning-related social skills.

CHAPTER III:
A CLOSER LOOK AT SCHOOL-FAMILY PARTNERSHIP
AND EARLY LEARNING
IN SOCIOECONOMICALLY DIVERSE PRESCHOOLS

The second study narrows the focus to the key preschool year and addresses several of the most significant limitations of Study 1. Teachers and parents of preschoolers were asked about the frequency with which they implemented a variety of school-family partnership practices focused on the home (e.g., sending and reading newsletters), the school (e.g., holding and attending workshops) and personal communication (e.g., making phone calls, attending conferences). Moreover, a subsample of teachers and parents were asked to note the child outcomes or content (e.g., literacy, social skills) upon which these practices focused. Findings clarify how parents and teachers of preschoolers in a diverse but largely middle-class community share information about children's schooling, as well as how these school-family partnership practices are related to children's learning.

RESEARCH QUESTIONS AND HYPOTHESES

Research Question 1

What is the nature and extent of family involvement at home, in preschool, and through communication in sociodemographically diverse preschools? Further, for the

sub-sample of families who specified the content (literacy or social skills) upon which their involvement focused, what skills did they target through this involvement?

Families were expected to differ widely along all three dimensions in the frequency with which they engaged in particular practices. As little research has explored the issue of skill or content focus of family involvement, predictions were largely based on previous work from the Pathways to Literacy study (Hindman & Morrison, 2007). It was expected that families would vary in the focus of home- and school-oriented involvement, but that communication practices would likely involve both social and literacy foci.

Research Question 2

What is the nature and extent of preschool teacher outreach in these diverse preschools? Further, for the sub-sample responding to these questions, upon what child skills or content (e.g., literacy or social skills) do these outreach practices focus?

As with family involvement, variation between teachers was expected in the frequency of outreach to families. As little research has explored the issue of skill or content focus of teacher outreach, predictions were largely based on previous work from the Pathways to Literacy study (Hindman & Morrison, 2007). It was expected that teachers would vary in the focus of home- and school-oriented involvement, but that communication practices would likely involve both social and literacy foci.

Research Question 3

How do teacher and parent partnership practices relate to children's code, vocabulary, self-regulation, and interpersonal skills from the fall to the spring of the preschool year? More specifically, controlling for children's skills on the target outcome

at the beginning of preschool, and accounting for key social background factors as well as for aspects of the home and school environment, how are family involvement and center-based outreach related to spring skills? Moreover, given the degree to which instruction at home and school is not one-size-fits-all, to what extent might effects of teacher outreach and family involvement vary with children's initial levels of skill on the target outcomes?

Results were expected to show that both family involvement and teacher outreach have unique effects on children's early code- and vocabulary-related skills, and that these effects vary with children's levels of skill. Specifically, stronger effects were expected for children with initially low levels of skill.

Research Question 4

Finally, as in Study 1, it is possible that teacher outreach is not only directly related to child skills, but also indirectly related through its associations with family involvement. Research Question 4 explores the links between teacher and family partnership practices.

Results are expected to show direct links between teacher outreach and family involvement at home, in school, and through communication.

METHODS

Procedures

Participants were recruited into the Pathways to Literacy study at the University of Michigan, a five-year longitudinal study of reading development that followed children from preschool into first or second grade. Children and families were recruited from two urban fringe districts including public fee-based, Michigan School Readiness,

and Head Start programs, at back-to-school workshops at the start of preschool. In addition, letters explaining the study and inviting enrollment were sent home to families in children's backpacks at the start of the year. Participating families agreed to complete a battery of questionnaires each spring (requiring about 45 minutes in total) and to participate in two videotaped home visits. Each family received a consent form and a business reply envelope in which to return the form, free of charge, to the Pathways office. As an incentive, families received fall and spring updates on children's literacy skills and a \$20 gift card to a local book store each year. Further, for participation in all 5 years of the study, families were offered an additional \$100 gift card. Approximately 30% of all eligible families completed and returned their consent forms. Three waves of preschoolers were recruited in this fashion, in the fall of 2002, 2003, and 2004.

Preschool teachers were asked to participate only after children assigned to their classrooms became enrolled in this study. Of teachers, 100% of those invited into the study agreed to have annual videotaped observations of their classrooms and to complete a battery of surveys on participating students (including the School-Family Partnership survey involved in this dissertation). As an incentive, teachers were offered a \$20 gift card to a local bookstore for completing the observation and questionnaires.

Children's literacy skills were assessed at the beginning and end of the preschool year using alphabet flashcards, as well as the Letter-Word, Sound Awareness, and Picture Vocabulary subtests of the Woodcock-Johnson III Tests of Achievement (Woodcock, McGrew, & Mather, 2001). In fall and spring, children were individually assessed in a quiet hallway or room of their schools by trained researchers for two sessions of about 25 minutes (i.e., 50 minutes total each season).

Social skills were also assessed. Self-regulation was evaluated in fall and spring using the game-like Head to Toes measure (McClelland, Cameron, et al., In press). In the spring only, parents completed the Social Skills Rating System (Gresham & Elliot, 1990), tapping children's self-control, assertiveness, responsibility, and cooperation.

Both parents and teachers also completed the School-Family Partnership Questionnaire in the spring or early summer of the school year. Given precedent in the literature (Fantuzzo et al., 2000; Pianta, Kraft-Sayre, Rimm-Kaufman, Gerke, & Higgins, 2001; Schulting et al., 2005) and demands on their time, teachers completed one form for each classroom (including teachers who taught two half-day classes). Finally, in addition to the School-Family Partnership Questionnaire, families and teachers completed background surveys about sociodemographic characteristics, as well as surveys about children's learning environments at home or school, including the instruction, warmth/responsivity, and management/discipline that characterized each context.

Figure 3.1 depicts this data collection timeline. Questionnaires were hand-delivered to families and teachers and were returned using pre-paid business reply envelopes. Families and teachers not returning surveys by the end of the summer were sent a reminder letter in September. Data included in this dissertation were collected in the second, third, and fourth waves of the study, including the 2003-2004, 2004-2005 and 2005-2006 school years.

Participants

In the larger Pathways study, three waves of approximately 100-130 children were recruited. This particular School-Family Partnership study includes children whose parents *and* teachers completed and returned a School-Home Partnership survey during

their preschool year. Overall, this group comprised approximately 40% of the entire Pathways sample.

Sample Sizes

Over the three years of data collection, 101 teachers returned School-Family Partnership Questionnaires at least once, of whom 25 taught preschool. Regarding families, 249 parents returned the Questionnaire at least once, including 173 parents of preschool children. However, the portion of this sample for whom *both* parent and teacher School-Family Partnership Questionnaire data were available was smaller. Specifically, the first wave of data collection for this school-family partnership study included 107 preschoolers whose parents ($n = 107$) and teachers ($n = 20$) completed both surveys. The second wave included 24 additional preschoolers with both parent ($n = 24$) and teacher ($n = 12$) survey data, and the third wave brought the addition of one additional preschooler with parent ($n = 1$) and teacher ($n = 1$) survey data. In total, collapsing these waves together, this study included family survey and child assessment data on 133 preschoolers, as well as 33 teacher School-Family Partnership Questionnaires. It is important to note that Questionnaires were actually provided by 25 teachers, although a few teachers ($n = 8$) participated during two different waves (and thus completed two sets of School-Family Partnership and other Questionnaires).

No differences on family or teacher background factors or on fall skills were detected between children who had only one (whether teacher or family) School-Family Partnership Questionnaire relative to those for whom both pieces of data were available.

Sample Demographics

Children participating in this study had a mean age of 4.11 years ($SD = 0.63$) at

the start of their participation. Of children and families, 15% were of minority ethnicity (8% Asian-American, 5% African-American, 2% Arab-American), and 98% spoke English in the home. Overall, 51% of children were female. On average, both mothers and fathers had 16 years of education, equivalent to a bachelor's degree ($SD = 1.87$, ranging from high-school to graduate-level education). All but one father worked full-time, while just over half of mothers (57.6%) were employed. Of these, half worked full time (i.e., more than 30 hours per week) while the other half worked part-time. See Table 3.1 for summaries of child and family demographic variables described herein.

Of preschool teachers, 98% were European-American and 98% were female (i.e., one teacher reported her ethnicity as Asian-American, and one teacher was male). All held bachelor's degrees and teaching credentials, and an additional 25% held master's degrees. Preschool teachers had, on average, 6 years of experience teaching, 5 years of which was in the preschool grade.⁴ See Table 3.2 for summaries of teacher and classroom background variables described herein.

It is important to note some logistical differences between children in this sample and to those in Head Start who participated in Study 1. In the FACES study, all participating children were in their first year of the Head Start program. In this study, some children were in their first year of preschool at the beginning of the study, while others were in their second years; some were destined for kindergarten in the following year, whereas others were planning to attend a second year of preschool. Given the

⁴ Of these preschool teachers, 4 actually taught junior kindergarten, which is a more academically rigorous, full-day pre-kindergarten program. Because they were few in number, these teachers were collapsed into the same category as preschool teachers. Analyses of differences in family involvement and teacher outreach across these two somewhat different programs showed no disparities, except that, relative to those in preschool, families with children in junior kindergarten classrooms more frequently contacted the school ($M = 1.02$ and 1.98 , respectively, $t(130) = 3.61$, $p < .001$). The present sample does not permit much in-depth exploration of these distinctions, however future research might return to this issue.

relatively small sample sizes in this study, it was not feasible to evaluate only those children in their first year of preschool. Thus analyses year involve children in both their first and second years of preschool but control for both child age and for previous educational experience (e.g., preschool, daycare, and in-home care).⁵

Measures

Literacy Skills

Code-related Skills

Alphabet. Letter recognition was gauged using a deck of lowercase alphabet flashcards. Cards were randomly ordered, and children were asked to identify each one. Possible scores ranged from 0 to 26.

Sound awareness. In addition, several subtests of the Woodcock-Johnson III Tests of Achievement (WJ, Woodcock et al., 2001) were used. Basic phonemic and phonological skills were measured using the Sound Awareness measure. Sections of this assessment increase in difficulty, from rhyming to consonant stripping. Split-half reliability on this measure is 0.71 for four-year-old children.

Decoding. The Letter-Word Reading WJ subtest involves basic decoding. In this measure, children are initially prompted to identify letters of the alphabet, then to read simple, two-letter words, and then to read longer and more complicated words. Split-half reliability on this measure is 0.98 for preschool-aged children.

Meaning-related Skills

⁵ It should be noted that longitudinal analyses of children's experiences in preschool and kindergarten were not conducted with this sample as was initially proposed, because approximately half ($n = 75$) of children involved spent one year in preschool and then moved on to kindergarten, while the remainder spent two years in preschool and then attended kindergarten. Critically, only 24 children had both parent and teacher partnership data in preschool and kindergarten. These sample sizes were simply too small to conduct robust growth analyses, although some preliminary findings of longitudinal growth or repeated measure ANOVA analyses will be noted in the Discussion section to help make sense of findings.

Expressive vocabulary. The Woodcock-Johnson III Picture Vocabulary subtest measured expressive language. In this assessment, children are shown a set of pictures and asked to name each one. Split-half reliability on this measure is 0.81 for preschool-aged children.

These literacy measures were administered back-to-back and required approximately 20 minutes. See Table 3.3 for mean values and distributions of scores on these variables.

Learning-related Social Skills

Self-Regulation – Behavioral Inhibition and Attention Regulation

Researchers objectively assessed children's self-regulation with the Head to Toes measure (McClelland, Cameron, et al., In press), a game-like task largely tapping behavioral inhibition and regulation of attention. Children were first asked to stand up, touch their toes, and then touch their heads. Then they were asked to "do the opposite, or the different thing," so that when the experimenter said, "Touch your toes," he/she really meant, "Touch your head." An alternate but psychometrically equivalent version involved prompting children to touch their shoulders and knees rather than their heads and toes. After several practice trials, children were given ten prompts. In both versions, each accurate, rapid, smooth response received two points. Children received only one point if they began to make the incorrect response but ultimately corrected themselves and responded appropriately. Thus the lowest possible score was 0, and the highest possible score was 20.

This measure was given in the fall and spring of preschool (alternating in fall and spring between the Head/Toes and Knees/Shoulders versions). Psychometric evaluations

of the measure reveal that it has concurrent validity with the self-regulation subscale of the Child Behavior Rating Scale (Abt Associates, 1998) and predicts children's literacy skills using the Woodcock-Johnson assessment (Woodcock et al., 2001). The Head to Toes measure required approximately 5 minutes to complete.

Self-Regulation – Behavior in Context

In addition, parents completed the Social Skills Rating System (SSRS; Gresham & Elliott, 1990) assessment of self-control. In this measure, parents identified how often, on a three-point scale (i.e., never, sometimes, and often), children demonstrated particular behaviors at home or in other contexts, such as following rules. Ten items tapped self-control. Parents completed the Preschool form for children between the ages of 3 and 5 years. The psychometric properties of this measure are well established (Gresham & Elliot, 1990). Internal consistency of the parent report measure for preschool children is acceptable for the self-control subscale (Cronbach alpha reliabilities of 0.81 for female children and 0.83 for male children). In addition, high associations with parent ratings on the Child Behavior Checklist (CBCL) support validity of the parent-report SSRS assessment. The SSRS required approximately 10 minutes to complete.

Assertiveness, Responsibility, and Cooperation

These three social skills were also measured using the SSRS. Here, as in the self-control subtest, parents rated how often, on a three-point scale, children demonstrated particular behaviors such as beginning conversations with others (assertiveness), participating in group activities (cooperation), and asking permission before using others' belongings (responsibility). Ten items tapped each of these skills. Parents completed the Preschool form for children between the ages of 3 and 5 years. Internal consistency of the

parent report measure for preschool children is acceptable for each of these subscales, including assertiveness (0.78 for females and 0.73 for males), responsibility (0.78 for females and 0.70 for males), and cooperation (.82 for females and 0.79 for males). As above, concurrent validity between these subscales and aspects of the CBCL has been identified.

Distinctions between Outcomes

Although this study includes a fairly large number of outcomes ($n = 9$) which fall into two categories (literacy and social skills), these skills are distinct from one another and may well be differentially predicted by teacher outreach and family involvement as well as the covariates under examination. See Table 3.4 for the correlations between these outcomes during the preschool year.

Sociodemographic Background Variables

Parents and teachers completed a background questionnaire about their own age, ethnicity, native language, education and employment. Families also noted their children's age and ethnicity, their marital status, and other household variables including income and number of children in the home. This questionnaire required approximately 10 minutes to complete.

Instructional and Affective Quality of the Home and Classroom Environment

As in the previous study involving Head Start preschoolers, families, and teachers, analyses controlled for the cognitive and affective stimulation available in the home and school environments.

Parenting Questionnaire. In the spring of the preschool year, parents completed the Pathways Parenting Questionnaire, which gathered information on the home learning

environment (specifically, the frequency with which parents engaged children in academic activities), parents' warmth/responsivity/autonomy support (i.e., demonstrations of affection toward children, awareness of children's ideas and opinions, support for children's independence), and management/discipline (i.e., creation and enforcement of rules and regulations). On this 50-item measure, parents rated the degree to which particular behaviors, such as "I work on letters with my child," "I encourage my child to explore the world," and "When I threaten discipline, I always follow through" characterized their own behavior on a scale from 1 (not at all like me) to 5 (very much like me). Previous investigations of the questionnaire (see Hindman & Morrison, 2007; Morrison & Cooney, 2001) showed that the measure produces a reliable 9-item home learning environment scale, a 6-item responsivity/support scale, and a 4-item management/ discipline scale among parents of preschoolers (Cronbach alphas = 0.82, 0.72, and 0.66, respectively). In this study, only the warmth/responsivity and management/discipline factors were used as covariates, as the instructional dimension tapped the same behaviors as the at-home involvement measure did (see below). See Table 3.1 for mean values and distributions of scores on these three dimensions. The Parenting Questionnaire required about 10 minutes to complete.

Teacher Instruction Questionnaire. Teachers also completed the Pathways Teacher Instruction Questionnaire. Designed to be parallel to the Pathways Parenting Questionnaire, the Teacher Instruction Questionnaire tapped aspects of instructional focus on academic skills including literacy and math, as well as warmth/responsivity/support and management/discipline in the classroom. The Academic Instruction subscale involved 11 items reflecting the frequency, measured on a 5-point

scale (either from monthly to daily or from not at all like me to very much like me), of working on particular skills (e.g., “I encourage invented spelling”) or using particular materials (e.g., “I provide my students with math workbooks”). The Warmth/Responsivity/Support scale included 8 items tapping teacher demonstrations of affection and promotion of independence (e.g., “I encourage my students to be curious, to explore, and to question things”), rated on a 5-point scale from not at all like me to very much like me. Finally, the management/discipline scale featured 14 items addressing teachers’ ideas and practices regarding the setting, explaining, and enforcing of rules and regulations in the classroom (e.g., “I devote a lot of time early in the school year to reviewing classroom rules and procedures” and “I yell or threaten punishment when my students misbehave”), again rated on a 5-point scale either from not at all like me to very much like me.

Reliability analyses (as sample sizes were not sufficient to afford confirmatory or principal components factor analyses) revealed that teachers’ responses to the 57 items of the Teacher Instruction Questionnaire did coalesce along the three hypothesized factors among preschool teachers (0.76 for instruction, 0.62 for warmth/ responsiveness/ support and 0.62 for management/discipline). The Questionnaire was designed to be completed in about 10 minutes.

See Table 3.1 for mean values and distributions of scores on these three dimensions.

School-Family Partnership Practices

Finally, parents and teachers completed the School-Family Partnership Questionnaire. The Questionnaire drew on prior work (Fantuzzo et al., 2004; Kohl et al.,

2000) and involved parallel forms for parents and teachers tapping the frequency of home-, school-, and communication-focused partnership practices. Parents were asked to rate their frequency of involvement in children's learning at home, in school, and through communication with teachers and the school, whereas teachers were asked about the frequency with which they distributed information (e.g., newsletters, activities) to the home, invited families to the school, and communicated personally with families. Families and teachers rated the frequency with which they implemented partnership practices on a seven-point scale including never, once/year, two-three times/year, once/month, twice/month, once/week, and daily. One exception, however, involved family at-home involvement, which parents rated on a five-point scale including rarely, weekly, every other day, daily, and more than once per day. In addition, a subset of teachers and parents participating in the second wave of the study ($n = 12$ teachers and 24 families) were also asked to indicate which child skills or content they targeted with each partnership practice, choosing from literacy, social skills, both equally, concerns about school policies or schedules, and other skills or matters (with space to specify).

Descriptive Analyses of the Questionnaire

Descriptive statistics for parent and teacher questionnaire responses are presented in Table 3.5. For both parent and teacher responses, very little variability was apparent on the frequency of conferencing (nearly all respondents reported inviting others to/attending two conferences per year) or home visits (only one teacher, a Head Start preschool instructor, conducted home visits). These two aspects of personal communication were therefore removed from further analyses. Variation in frequency of implementation was apparent on all other School-Family Partnership variables. (More

detailed descriptive analyses are discussed in the Results section). Correlations were apparent between some, but not all, items on the Family version of the questionnaire; similarly, there were correlations between items on the Teacher version (see Table 3.6). However, patterns of relations, or the dimensional structure of these questionnaires, was more precisely examined through factor analyses or reliability analyses.

Factor and Reliability analyses for the Parent Version of the Questionnaire

Exploratory factor analysis of the parent questionnaire was possible, given the sample size. Principal components analysis with a varimax rotation to generate orthogonal factors was conducted using responses of preschool and kindergarten families who had returned school-family partnership questionnaires at least once. Confirmatory analyses using SEM would have been a preferable approach, however sample sizes were simply too small. Reliability analyses were conducted using data from all parents and teachers of preschoolers who returned questionnaires at least once. This strategy permitted a larger sample size and thus helped to stabilize parameter estimates. Notably, there were no differences between the outreach or involvement of families and teachers of children who had both pieces of data (and thus are included in subsequent analyses) and the outreach or involvement of families and teachers who are not included. However, in some instances, parents returned questionnaires in multiple years, for example during a child's first and second year of preschool, or during both preschool and kindergarten. Similarly, many teachers returned questionnaires during two years. In both of these situations, only the first questionnaire that was returned by any participant was used. This practice helped to ensure that, in examining the factor structure of these constructs, the

partnership practices of any particular teacher or family who returned multiple questionnaires were weighted equally with all others.⁶

The four home-involvement variables were not included in factor analyses because parents used a 5-point scale when rating their engagement in these behaviors, rather than the 7-point scale used for in-school and communication practices. Reliability of the home involvement variables was acceptable (Cronbach alpha = 0.61). Of the remaining items, two factors emerged (see Table 3.7). The first, explaining 31% of the variance, involved in-school practices, while the other, explaining 19% of the variance, involved communication through calling and writing. Reliability of the in-school scale (with 6 items) was 0.68, while the 2-item communication scale had a reliability of 0.65. The total scale reliability including all sub-scale items was 0.68.

Reduction of family partnership data. Family involvement data were thus reduced to three sub-scales: At-Home, In-School, and Personal Communication. Means on each were calculated.

Reliability Analyses for the Teacher Version of the Questionnaire

Given the substantially smaller sample of teachers, factor analysis was not appropriate. Instead, the two different factor structures discussed in the literature review (i.e., three-dimensional and one-dimensional) were tested by evaluating the Cronbach reliability of items reflecting those factors.

⁶ One additional issue encourages the use of just one survey from any particular family or teacher, rather than multiple surveys completed over time, in calculating reliability. Although not a central focus of the present study, it is interesting to note that there were significant correlations between parent involvement from one year to the next. For example, among parents who returned the Partnership Questionnaire for two years in a row, home involvement in one year was linked to home involvement in the next ($r = 0.71, p < .001$) as was in-school involvement ($r = 0.67, p < .001$). Frequency of personal communication was slightly less correlated from one year to the next ($r = 0.35, p = .001$). A similar pattern was apparent for teachers, with outreach in one year closely linked to outreach in the next ($r = 0.50, p = .020$).

Among preschool teachers, the two home-oriented practices, sending out activities and newsletters, had a reliability of 0.12 together; while the four in-school practices, including inviting parents to attend class-related events or parties, to attend social events, to donate materials, and to volunteer had a reliability of 0.63. Calling and writing communication practices had a reliability (i.e., bivariate correlation) of 0.67. All together, the comprehensive scale including all the items was more reliable than any of the sub-scales (Cronbach alpha = 0.67).

Reduction of teacher partnership data. Considering the low reliabilities of two of the three hypothesized teacher outreach subscales and the precedent in the literature for a uni-dimensional conceptualization of school/teacher outreach, collapsing all items into one composite variable and calculating an overall mean was the most appropriate way to consider these data.

Missing Data: Nature of Missing Data and Imputation Strategies

Child Literacy Skills

As detailed above, only one child was missing literacy skill data in the fall of preschool, while nine were missing data in the spring. Given that only a small percentage of children were missing data, and that many child- and family-level variables correlated with these skills were available, data were imputed. After imputation, means and standard deviations on these variables were equivalent to those in the original data.

Child Social Skills

In total, only six children were missing Head to Toes skill data in the fall of preschool, while 10 were missing data in the spring. Given that only a small percentage of children were missing data, and that many child- and family-level variables correlated

with these skills were available, data were imputed, resulting in means and standard deviations on these variables equivalent to the original data.

Overall, just five children were missing SSRS social data (each of these children was missing all subscales) in the spring of preschool. As only a few children were missing data, and many available child- and family-level variables were correlated with these skills, data were imputed and resulted in means and standard deviations on these variables equivalent to those of the original data.

Home and School Learning Environment Data

Overall, all but three parents completed the Parenting Questionnaire in the preschool year, and five families were missing Background Questionnaire data. Only one preschool teacher was missing data on the Teacher Instruction Questionnaire, and seven were missing background data. As above, because the amount of missing data was small, and these variables were correlated with other available data, missing information was imputed, yielding similar means and standard deviations.

School-Family Partnership Questionnaires

This study includes children participating in the Pathways to Literacy project whose parents and teachers completed and returned a school-family partnership questionnaire in the spring of the child's preschool year. Given the exploratory nature of this study (in that we do not know much about the frequency with which parents and educators engage in these practices and the degree to which these practices are linked to children's outcomes), data were not imputed.

To account for possible selection bias, differences between teachers and families of children who had both parent and teacher School-Family Partnership Questionnaire

data were conducted. Families who returned the Questionnaire were not significantly different from those who did not return the Questionnaire on variables including maternal education ($t(275) = 0.288, p = .77$) or employment ($t(275) = 1.44, p = .15$), nor did they differ on child ethnicity ($t(286) = 1.73, p = .09$)

Analysis of differences between teachers who did and did not return the School-Family Partnership Questionnaire found that teachers returning the Questionnaire did not differ from their peers on the level of academic instruction ($t(110) = 0.81, p = 0.42$), warmth/ responsiveness/ support ($t(110) = 0.38, p = 0.71$), or management/discipline ($t(110) = 0.14, p = 0.91$) in their classrooms. There were also no differences in teachers' levels of education $t(70) = 0.77, p = 0.44$. However, those returning School-Family Partnership Questionnaires were significantly more experienced in the field of education ($t(80) = 2.77, p = .007$). Consequently, subsequent analyses controlled for teacher experience in education.

There were also some differences in child skills between those who did vs. did not have complete parent and teacher School-Family Partnership Questionnaire data. Specifically, children in the sub-sample with School-Family Partnership Questionnaire data had lower alphabet scores ($t(303) = 6.26, p < .001$) and Letter-Word scores than their peers ($t(308) = 3.62, p < .001$), as well as lower Head to Toes self-regulation skills ($t(289) = 3.92, p < .001$). However, while statistically significant, it is important to note that these differences are quite small, amounting to just a few points on each outcome. Consequently, interpretation of findings must be shaped by the understanding that they pertain to a particular population with slightly lower literacy and social skills relative to other children in this community (but, as is apparent from descriptive statistics, had mean

scores on literacy measures higher than the national average and social skills near the ceiling of measures). Findings from this single study should not be generalized to children with different levels of skill, whether higher or lower.

Data Imputation Strategies in the Present Study

Decisions about missing data imputation were grounded in the review of the missing data and imputation literatures in Chapter 2. As a) missing data were generally MCAR or MAR, b) the percentage of missing data relative to observed data was small, and c) the overall sample size was small, single imputation was an appropriate and parsimonious strategy for this dataset (Allison, 2002). Single imputation was handled through maximum likelihood imputation using STATA. As in Study 1, a separate imputation was conducted for each level of the multilevel model (i.e., imputation of child/family variables, imputation of teacher/classroom variables, and imputation of school-level variables). All hypothesized variables (i.e., all those detailed above) were retained in the datasets for imputation, so that missing values would be imputed using all possible information. Unlike IVEware, which imputes all variables simultaneously, STATA allows for the imputation of one variable at a time. Each variable was imputed using all other observed variables (i.e., no imputed variables were used to impute other variables). Means and standard deviations of variables including imputed data were, as expected, identical to those of the original, observed data.

ANALYTIC STRATEGY AND RESULTS

Research Question 1

The first research question involved the nature and extent of family involvement at home, in preschool, and through communication in this community.

Frequency of Involvement

At-Home Involvement

Regarding home involvement, families reported on the frequency of book reading, writing, going to the library, and playing games with children. Of these four variables, families were, on average, most frequently involved through reading books, doing so nearly every day ($M = 3.95$, $SD = .79$), although responses ranged widely from rarely (2 families, or 1.5% of the sample) to weekly (3 families, or 2.3% of the sample), every other day (24 families, or 18.2% of the sample), every day (73 families, or 55.3% of the sample), and more than once per day (30 families, or 22.7% of the sample).

A significantly less frequent feature of children's home environments ($t(130) = 9.61$, $p < .001$) was game-playing with their parents. This activity occurred an average of every other day ($M = 3.07$, $SD = .97$) but ranged from rarely ($n = 4$ families, or 3.1% of the sample) to multiple times per day ($n = 9$ families, or 6.9% of the sample).

Parents wrote with their young children about as often as they played games together ($t(129) = 1.40$, $p = .163$), on average every other day ($M = 2.92$, $SD = .98$). In contrast to book reading, far more families ($n = 51$, or 38.9% of the sample) were involved with writing either rarely or just once per week. Of the remainder, 41 families (or 31.3% of the sample) wrote with children every other day, while about as many (32 families, or 24.4% of the sample) did so every day. Just 5.3% of respondents (7 families) reported writing on children on multiple occasions throughout the day. Overall, writing with young children occurred significantly less frequently than book reading ($t(130) = 12.23$, $p < .001$).

Finally, parents reported taking children to the library about as often as writing and game playing ($M = 2.83$, $SD = 1.89$). Few families visited the library only rarely ($n = 16$, or 12.1% of the sample) or as often as multiple times per day ($n = 3$, or 2.3% of the sample), whereas families were about equally likely to visit once per week, every other day, or every day. On average, library visits occurred significantly less frequently than book reading at home ($t(131) = 11.91$, $p < .001$), but were statistically equivalent in frequency to playing games ($t(130) = .78$, $p = .44$) and writing ($t(130) = -1.97$, $p = .051$).

It is interesting to note that inter-correlations between these home involvement variables (see Table 3.6) were significant but small (from about .2 to about .4), indicating that using more of one involvement strategy was linked to using more of another, but that these practices are not wholly identical to one another.

On average, considering all four home-involvement variables together as one reliable composite, families implemented each of these activities every other day ($M = 3.19$, $SD = .65$), although mean scores on this composite variable ranged widely, from 1.56 to 4.75.

In-school Involvement

Of in-school involvement practices, the most frequently implemented was attending social or other non-academic events at the school, which occurred between once and twice per month ($M = 3.83$, $SD = 1.74$), with some families reporting no attendance at such events ($n = 8$, or 6.7% of the sample), while others reported daily attendance ($n = 27$, or 20.5% of the sample).

Approximately as often ($M = 3.57$, $SD = 1.89$) were visits to the school to informally talk with the teacher (which, according to comments volunteered by parents

and written in the margins of the survey, indicated sometimes included incidental conversations upon picking children up). Similar to social activity, visit frequency varied substantially, as some parents ($n = 9$, or 6.8% of the sample) reported never visiting the school for this purpose, while others ($n = 26$, or 19.7% of the sample) did this everyday. Distribution of this variable was bimodal, with responses spiking at the value of 2, representing two to three times per year (characterizing the visits of 29 families, or 22% of the sample), as well as the value of 5, representing daily visits. The average frequency of visiting the school was no different than the frequency of attending social events ($t(131) = 1.35, p = .181$).

Attending events and performances at the school occurred, on average, just less than once per month ($M = 2.63, SD = .71$). Variability in responses on this item was rather restricted, as more than 90% of respondents ($n = 119$) noted taking part in events either 2-3 times per year or once per month. As such, families implemented this involvement practice significantly less frequently than either attending social events ($t(129) = 7.96, p < .001$) or visiting the school ($t(129) = 5.49, p < .001$).

Families reported volunteering in the school or classroom approximately 2-3 times per year ($M = 2.24, SD = 1.21$). Responses ranged from never ($n = 12$, or 9.2% of the sample) to daily (just 1 family, representing less than 1% of the sample) and were fairly smoothly distributed between those extreme values. Volunteering took place less often, on average, than attending social activities, visiting the school, or participating in school events/performances ($t(130) = 11.02, 7.56$, and 4.30 , respectively, $p < .001$).

Donation of materials occurred, on average, 2-3 times each year ($M = 2.08, SD = 1.11$), but some families never did this while others donated materials every day. Families

made donations less frequently than they attended social occasions, visited informally, and participated in events/performances ($t(131) = 10.99, 8.75, \text{ and } 5.31$, respectively, $p < .001$), but about as often as they volunteered in the classroom ($t(130) = 1.24, p = .22$).

Finally, parents worked with organizations such as the PTA or policy councils an average of two to three times per year ($M = 2.00, SD = .37$). Although responses ranged from never to daily, the distribution of this variable differed from those discussed above, in that fully 55 families (or 42% of the sample) never volunteered with a parent organization, while only 2 parents were involved more than twice per month. Not surprisingly, in-school involvement through participation with parent organizations was significantly less frequent than was involvement through any of the other in-school opportunities ($t(130) > 6.00, p < .001$ for each comparison).

As with the home involvement variables, correlations between these in-school involvement practices were generally significant but small to moderate in size (from about 0.1 to 0.5) (see Table 3.6). There were few correlations between at-home and in-school involvement variables.

As a composite, in-school involvement activities occurred between several times per year and monthly ($M = 2.57, SD = .81$), although mean scores ranged from 1 to 5. Thus some families implemented practices of this nature only once per year, while others engaged in these weekly.

Personal Home-School Communication

As in Study 1, both calling and writing took place relatively infrequently, compared to home- and school-based involvement. Families called the school/teacher between one and three times per year ($M = 1.22, SD = 1.48$), although some never called

educators and some called daily. Writing took place just as frequently ($M = 1.19$, $SD = 1.43$, $t(130) = .23$, $p = .815$), with similar variability around the mean. In both cases, about 50% of parents never called or wrote, while fewer than 10% did so more than once per month.

The composite variable demonstrated small, significant correlations to home- and school-based involvement. The average frequency of this personal exchange of information composite ($M = 1.20$, $SD = 1.25$, range from 0 to 5) was significantly lower than either the at-home involvement ($t(131) = 30.33$, $p < .001$) or in-school involvement composites ($t(131) = 36.04$, $p < .001$). Calling and writing (as indicated in Table 3.6) were moderately and significantly correlated with other ($r = 0.48$, $p < .01$).

Content of Family Involvement

Upon what issues did parent involvement focus? Parents of preschoolers who completed the questionnaire in the second wave of the study only ($n = 52$) were asked to choose whether personal communication – including calling, writing, visiting and conferences – as well as visiting focused upon academic skills (e.g., literacy, numbers), individual social development (e.g., self-control, following directions), interpersonal social skills (e.g., making friends, dealing with peers), both academic and social development, policy or schedule issues, or something else entirely.

The most fundamental finding of note relevant to these items is that there was substantial missing data on some, even within the population of parents who completed the questionnaire. Overall, 24 parents responded to the content-specific prompt about phone calls while 28 did not, and just 20 parents specified the content of their written communication with teachers while 32 did not. Response rates were higher for

conferencing and visiting, with the majority of parents responding to each of those ($n = 49$ and 47 , respectively). Data were not imputed, given the small sample size and high rate of missingness on some variables.

Responses did, however, illuminate the nature of parents' interactions with teachers and the school. Consistent with hypotheses, there were distinct variations in focal skills both across involvement techniques and families (see Table 3.9).

Visiting the School/Teacher

The majority of families (46.8%) reported combined academic/social goals for the informal visits to their child's school or classroom. An additional 6.4% of families focused interactions during these visits on academics exclusively, 10.6% highlighted their child's self-control, and 19.1% emphasized interpersonal competence. The remainder focused upon policy (9.6%) or other concerns (2.1%), and a few (4.3%) focused upon all of the above.

Calling the School/Teacher

The modal response regarding the content of phone calls, selected by 44.4% of participants, was a focus on both academic and social skills. Approximately equal numbers of respondents chose solely academic, self-control, or interpersonal skills or policy/scheduling issues as the focal content of their phone calls.

Writing to the School/Teacher

Families implemented communication through writing for somewhat different reasons, with 40% reporting a focus on policy/scheduling concerns and 60% reporting skill-related issues. Of the latter group, skills of focus were most often academic skills or

an academic/social combination (50% of the sample). Self-control skills were focal for just a few families (10%), and none focused on interpersonal skills.

Conferencing with the School/Teacher

Families were more uniform in content upon which their conferences focused than they were for any other form of involvement. More than three-quarters of respondents identified comprehensive social and academic goals for their conferences. A small minority targeted academic skills (10.2%), with a few highlighting interpersonal and self-control skills (6.1% and 2.0%, respectively). Still others (6.1%) focused on all skills as well as policy/scheduling issues.

In sum, these reports of involvement children's learning and schooling from families in this relatively middle-class community add to findings from Study 1 by illuminating (in greater detail) the frequency with which particular practices take place and the content upon which they focus. On average, families read books with young children every day, and worked with them through games, writing, and library visits every other day. In-school involvement practices took place several times per year. Less frequent was personal communication, which typically took place just once or twice per year. In general, in-school and communication practices were focused on both academic and social skills, or on academic skills alone, however written notes or emails often focused on administrative matters, such as school policies or schedule issues.

Research Question 2

Teachers responded to survey items regarding their outreach to the home, including the frequency of providing activities and newsletters; in-school involvement opportunities (e.g., social events, volunteering, events/performances, and donation); and

the personal communication in which they engaged, such as calling and writing. They also specified the child skills, or content, upon which some of these practices focused.

Frequency of Teacher Outreach

Outreach to the Home

Preschool teachers reported sending newsletters home between once and twice per month ($M = 3.82$, $SD = .85$); indeed 85% of the sample implemented newsletters on a monthly or bi-weekly basis. No teachers reported sending activities less frequently than two to three times per year, however a very few ($n = 2$, or 12.2% of the sample) sent home information nearly every day. Teachers sent activities home slightly less often ($M = 3.45$, $SD = 1.43$, $t(30) = 1.22$, $p = .231$). Frequency ranged widely, from once per year ($n = 4$ teachers, or 12.9% of the sample) to every day ($n = 2$, or 6.5% of the sample).

In-school Involvement Opportunities

Teachers provided opportunities to volunteer about once per month ($M = 3.25$, $SD = .84$), ranging from once per year to twice per week but normally distributed between those extremes. Parties, events and performances were offered approximately monthly as well ($M = 3.06$, $SD = .86$). Indeed, there were no significant differences in the frequency of implementation of these strategies ($t(31) = .87$, $p = .393$); further, they demonstrated nearly identical patterns of distribution, such that nearly 90% of teachers implemented party and volunteer opportunities approximately monthly.

Teachers asked families to donate materials nearly monthly ($M = 2.45$, $SD = 1.42$), but less often than they called for volunteers ($t(31) = 2.95$, $p = .006$) or invited families to events or performances ($t(32) = 2.55$, $p = .016$). The distribution of teacher

responses on this variable was wider than that of the volunteering and event variables, with at least two teachers reporting each possible response.

Finally, teachers invited families to engage in social activities at the school two to three times per year ($M = 2.05$, $SD = 1.15$), less often than they called for volunteers or for attendance at events ($t(29) = 5.41$ and 5.02 , respectively, $p < .001$), but approximately as often as they asked for material donations ($t(30) = 1.17$, $p = .251$). No teachers sponsored opportunities for parents to socialize with one another more often than twice per month.

Personal Communication

Teachers provided written notes or emails – personalized information for individual families – nearly monthly ($M = 2.72$, $SD = 1.61$), ranging along all possible responses. Four teachers (12.5% of the sample) implemented no communication through writing, whereas an equal number provided written communication on multiple occasions each week. In addition, teachers called families several times per year. There were no significant differences in the frequency with which teachers called or wrote to families ($t(30) = 1.65$, $p = .109$), and the distribution of responses regarding both practices was very similar, with a mode response reflecting calling families 2-3 times per year.

Content of Teacher Outreach

As with families, a sub-sample of preschool teachers completing the School-Family Partnership Questionnaire in the second wave of the study ($n = 20$) were asked about the content upon which outreach practices focused. Specifically, teachers chose the primary focus of their newsletters, activities, phone calls, personal written messages, and conferences. Largely in parallel to the School-Family Partnership form that families

received, options included academic skills, social skills (both self-control and interpersonal), both academic and social skills equally, policy/scheduling issues, and other concerns. Consistent with hypotheses (and with findings for family involvement), there was variation in focal content both between teachers and across outreach strategies. Data presented in this section are summarized in Table 3.9.

Newsletters

Newsletters most frequently focused upon academic and social skills equally (50%), with equivalent minorities of teachers reporting an emphasis on academic skills only (22.2%) and policy/scheduling issues (22.2%). Interestingly, none reported a primary emphasis on social skills.

Activities

Equal numbers of teachers reported sending home activities targeting academic skills and a combination of academic and social skills. None, however, focused upon social skills alone.

Phone Calls

Consistent with the reported emphases of newsletters and activities, most teachers employed phone calls to address both social and academic issues (77.8%). However, a substantial minority of teachers also called families to talk exclusively about social skills (22.2%), while none made calls to address academic skills alone.

Written Notes

Similarly, teachers largely wrote notes to families to address a combination of academic and social skills (63.2%), or social skills alone (21.1%). The remaining portion

of the sample highlighted policy/scheduling concerns (5.3%) or other matters altogether (10.5%).

Conferences

Finally, the vast majority of teachers (90%) reported dual (academic and social) goals for conferences, with 10% identifying academic-only objectives.

In sum, preschool teachers sent activities and newsletters home to families between once and twice a month, provided a variety of in-school involvement opportunities about once a month, wrote notes or email about that often as well, and called families on the phone several times per year. Similar to family involvement, most teacher outreach focused largely on both academic and social skills together.

Research Question 3

How are teacher outreach and family involvement related to children's learning over the course of the preschool year about a variety of literacy and social skills?

Analytic Strategy

Given that children and families are nested within teachers/classrooms, and that teachers are nested within schools, multilevel models were used to examine family and teacher effects on child skills. In the first step of this process, a three-level fully unconditional model was run for each outcome in order to partition variance in the outcome into between-classroom and between-school components. In all cases, results showed that there was no significant variance between schools, likely reflecting the fact that all six of the participating schools were located in the same district and served the same communities, thus would not necessarily be expected to differ substantially from one another in preschoolers' spring skills.

As a result, two-level models, featuring, teacher effects at level 2 (notably, not classroom-level effects because all teachers, even the six who taught two classrooms rather than one, completed one form each year rather than one form per class) and family/child effects at level 1, were tested instead. The same partitioning of variance was repeated, and for outcomes that demonstrated significant variance at the teacher level, the unique effects of teacher outreach and family involvement were evaluated using hierarchical linear models. However, for outcomes for which no significant between-teacher variance was found (or, in other words, for which there was no systematically shared variance in children's target skills at the end of the year within teachers/classrooms), OLS regression was used. Details about which technique was used with each outcome are provided both in the text below and in Table 3.10.

One model was created for each outcome, thus in all, 9 models were run. In both the OLS and HLM regressions, variables were entered in blocks. For literacy skills, these included child background factors (child age, gender, minority ethnicity, prior care experiences, fall skill on the target outcome, and fall social skills), maternal/family background factors (maternal education, maternal employment, warmth/ responsiveness/ support and management/ discipline), family involvement (at home, in school, and through communication), teacher background factors (education and experience), teacher school/instruction factors (Title I status of school, academic instruction, warmth/ responsiveness/ support, and management/discipline), and teacher outreach to families.

Models examining Head to Toes were quite similar to those focused upon literacy skills, although, given the relations between literacy and social skills outlined in Chapter 1, literacy skills were not included as possible predictors of Head to Toes social skills. A

similar strategy was used in analyzing parent-reported social skills, although because these were measured just once during the year, no pre-test was included as a control.⁷ Involvement/outreach variables of interest were retained in models regardless of their levels of significance, while other covariates that were not at least marginally significant ($p < .1$) were trimmed from analyses in the interests of power. However, to control for bias in the sample of teachers, teacher experience in education was retained in all models. Interaction effects between involvement/outreach and fall skills were tested one at a time and in combination and were removed if they were not significant.

Results

Alphabet Recognition Skills during Preschool

The fully unconditional model for this outcome revealed significant variance between teachers/classrooms ($p = .003$). Specifically, 17.7% of the variance in spring letter knowledge was between classrooms (variance component $U_0 = 9.34$), while the remaining 82.3% was between individual children (variance component $R = 43.36$). A multilevel model was thus constructed (see Table 3.11).

On average, children in this sample could identify 16 letters in the spring of the preschool year. The strongest predictor of this spring skill was fall letter knowledge ($B = 0.77, p < .001$), explaining 95% of the variance at level 2 and 58% of the variance at level 1. At the child/family level, higher levels of management/discipline at home were inversely related to letter knowledge ($B = -0.36, p = .030$), while children of employed mothers had stronger spring skills ($B = 1.34, p = .083$), albeit to a marginally significant degree. Personal communication by families with teachers/schools was not significantly

⁷ Although some children involved in this dissertation study had participated in Pathways to Literacy study one year prior to the data collection presented here, fewer than half of this particular sample had any prior measures of social skills that could be used as control variables.

associated with letter learning over the course of the year, nor were at-home and in-school involvement. In addition, communication was particularly strongly related to alphabet skills for children with employed mothers ($B = 1.61, p = .005$), an effect which explained 11.7% of the variance between classrooms but less than 1% of the variance between children. Fully 89.2% of the teacher-level variance (indeed, all significant variance, $p = .282$) was explained by the final model, as was 67.0% of the total variance between children.

Sound Awareness Skills in Preschool

Sound Awareness outcomes in spring did not vary significantly across teachers/classrooms ($p > .500$), thus OLS regression was used (see Table 3.13 for results of the final model). The average spring score among children in the sample, controlling for everything else in the model, was 460 points on the IRT scale, which is substantially higher than the national average for children of this age ($M = 433, SD = 16.5$). Of the variables in the model, fall Sound Awareness skill made the largest contribution to the spring outcome ($B = 0.38, p < .001$). In addition, home involvement was inversely associated with spring skills ($B = -5.13, p = .041$). None of the child, family, or teacher/classroom background variables was associated with Sound Awareness, nor were teacher outreach or family in-school or communication involvement. Overall, the model explained 20.9% of the variance in the outcome.

Decoding Skills during Preschool

The fully unconditional model for Letter-Word (decoding) skills found no significant variance between teachers/classrooms ($p = .392$), thus OLS regression was used. The final model (see Table 3.12) showed that children's decoding skills in the

spring were predicted most substantially by their levels of skill in the fall, with each additional W-score point on the Letter-Word assessment at the start of the year associated with a gain of three-quarters of a point, relative to the sample mean, on the decoding assessment in the spring ($B = 0.75, p < .001$). In addition, holding everything else in the model constant, children with better-educated mothers marginally outperformed their peers in the spring ($B = 1.60, p = .071$). None of the family involvement or teacher outreach variables was associated with decoding. The R^2 value for the final model was 0.72.

Picture Vocabulary Skills during Preschool

The fully unconditional model identified significant variance in spring expressive vocabulary between classrooms ($p = .005$), with 17.8% of the variance at level 2 (variance component = 28.77) and the remaining 82.3% of the variance at level 1 (variance component = 133.02), thus a two-level HLM was tested (see Table 3.14). On average, children scored 474 points on the IRT scale, which was above the national average ($M = 460, SD = 17.5$). As in the previous literacy skill models, the strongest predictor of spring score was fall score ($B = 0.61, p < .001$), explaining 36% of the variance at level 1 and 7% of the variance at level 2. Of the school-family partnership variables of primary interest, only personal communication between schools/teachers and families was positively associated with children's skills ($B = 1.49, p = .003$), accounting for 1.8% of the between-classroom variance and 4.4% of the variance between children. Conversely, children who experienced greater family involvement at home had lower spring expressive vocabulary scores than did their peers in homes with fewer book learning-related activities such as book readings and library visits, controlling for their

entering skills ($B = -3.07, p = .045$). This variable explained 1.7% of the variance between teachers and 3% of the variance between children. Similarly, frequency of family in-school involvement was marginally inversely linked to children's vocabulary learning ($B = -1.44, p = .077$).

In addition, children who had attended preschool at least once before the current school year had stronger spring vocabulary skills, controlling for other variables in the model ($B = 5.30, p = .002$). Finally, children whose mothers worked outside of the home had lower spring scores, ($B = -4.62, p = .002$). The final model explained 41.7% of the variance between children and 84.2% of the variance between teachers/classrooms, leaving no significant variance at level 2 to be explained ($p = .174$).

Self-Regulation (Head to Toes) during Preschool

The initial fully unconditional model revealed significant between-teacher variance in children's self-regulation skills (as measured by the Head to Toes task) in the spring of the preschool year ($p < .001$). In total, 25% of the variance in behavior self-regulation and attention management lay between schools, while 75% of the spring Head to Toes variance lay between individual children. In the HLM that followed (see Table 3.15), fall Head to Toes skill accounted for a greater percent of variance in spring skills than did any other predictor ($B = 0.34, p < .001$, explaining 9.1% of the spring variance at level 2 and 57.9% of the variance at level 1). Of the school-family partnership variables, teacher outreach predicted children's social development, although inversely ($B = -1.15, p = .004$), explaining 2.2% of the variance at level 1 but less than 1% of the variance at level 2. None of the family involvement variables was significantly associated with self-

regulation, although in-school involvement was a marginal predictor ($B = 0.81, p = 0.080$).

In addition, older children had stronger spring skills than their younger peers ($B = 3.51, p < .001$), without regard to prior experience in preschool or daycare settings. Children learned more in classrooms with more experienced teachers ($B = 0.32, p < .001$) and with more consistent and appropriate management/discipline strategies ($B = 0.18, p = .005$). The final model explained more than 99% of the variance between teachers in the outcome ($p > .500$) and 29.5% of the variance between children.

Self-Regulation in Context at the End of Preschool

The FUM identified significant variance between teachers/classrooms ($p < .001$) in spring self-control skills, as rated by parents with a focus on a child's management of his/her attention, emotion, and behavior in the context of family activities, with 24.2% of the variance at level 2 and the remaining 75.8% at level 1. In the subsequent HLM (see Table 3.16), the intercept of just below 15 points was (as would be expected) nearly identical to the mean score across children found in prior descriptive analyses. Of the variables of interest, teacher outreach was a marginally significant inverse predictor of self-control ($B = -0.84, p = .067$), explaining 2.5% of the variance at level 2 and less than 1% of the variance at level 1), echoing the pattern of association found in the previous model that traced change in Head to Toes skill over the preschool year. Parent involvement at home also predicted spring self-control ($B = 0.83, p = .036$, accounting for 27.9% of the variance at level 2 and less than 1% of the variance at level 1). In addition, higher spring self-control, as evaluated by parents, was associated with previous preschool attendance ($B = 1.45, p = .005$) and with higher levels of maternal education (B

$= 0.37, p = .023$), as well as with more classroom instruction on academic skills (i.e., literacy and numeracy) ($B = 0.09, p = .083$). The final model explained 56.9% of the variance at level 2, leaving significant between-teacher variance to be explained ($p = .033$), and also explained 7.7% of the variance at level 1.

Assertiveness at the End of Preschool

As there was no significant variance between classrooms in children's assertiveness ($p > .50$), as measured by parents at the end of preschool, OLS regression was conducted. The final model (see Table 3.17), which explained 19.9% of the variance in the outcome, revealed that, on average, children's assertiveness right before the start of kindergarten was represented by a score of 15.5 points on a scale ranging from 0 to 20. Assertiveness was predicted by family in-school involvement ($B = 1.22, p < .001$), although not by any other aspects of school-family partnership. In addition, the level of management/discipline in the household was inversely associated with children's assertiveness ($B = -0.21, p = .037$). The final model explained 18.0% of the variance in children's assertiveness at the end of preschool.

Responsibility at the End of Preschool

With no significant variance between classrooms in children's responsibility at the end of preschool ($p = .129$), predictors of this skill were investigated using OLS regression. Results (see Table 3.18) showed that the average spring responsibility score was, as expected, 12 points. Children whose parents reported more home involvement had higher responsibility scores at the end of the year ($B = 0.96, p = .010$), as did children who were older ($B = 0.83, p = .028$), and those whose teachers had less experience in the

field of education ($B = -0.17, p = .002$). The final model explained 22.7% of the variance in the outcome.

Cooperation at the End of Preschool

With no significant variance in cooperation between classrooms ($p = 0.405$), an OLS model was created (see Table 3.19). Among the variables contributing to the average spring score of 12 points was family involvement at home ($B = 0.88, p = .006$). In addition, in-school involvement ($B = 0.49$ and $p = .051$) and communication ($B = 0.29, p = .083$) were marginally significant predictors. In addition, maternal education was related to cooperation ($B = 0.28, p = .010$). The model explained 19.2% of the variance in the outcome.

Research Question 4

The models above investigate whether teacher outreach and parent involvement have direct effects on child skills. However, as outlined in the introduction (Chapter 1) and investigated in Study 1 (Chapter 2), it is plausible that teacher outreach operates on child skills through parent involvement. Thus this series of analyses explored associations between teacher outreach and family involvement at home, in school, and through communication, accounting for key school, teacher, and family background factors.

Analytic Strategy

As with child outcomes, the degree to which family involvement was nested within classrooms was examined through fully unconditional multilevel models that partitioned variance in family involvement into between-teacher and between-family components. If significant variance between teachers was discovered, then hierarchical

linear models were constructed, but in the absence of significant variance at level 2, OLS regression analyses were conducted.⁸

Results

At-Home Involvement

The FUM revealed no significant variance between the level 2 classroom units ($p = .056$), hence OLS regression methods were employed to investigate the predictors of parents' involvement at home (see Table 3.20). The sole predictor of family involvement at home was maternal employment, in that mothers who worked full- or part-time reported less involvement ($B = -0.22, p = .060$); teacher outreach did not predict involvement at home. The final model explained only 4.5% of the variance in the outcome.

In-School Involvement

Family in-school involvement did vary significantly across classrooms ($p < .001$), with 20.9% of the variance at level 2 and 79.1% at level 1. Thus HLM was used to investigate predictors of this form of involvement. The final model (see Table 3.21) showed that teacher outreach was the sole significant predictor of in-school involvement ($B = 0.27, p = .047$), explaining 14.3% of the variance at level 2 and none of the variance at level 1. Parents of girls were marginally more involved in the school ($B = .23, p = .066$). The final model explained just 1.9% of the variance at level 1 and less than 1% of the variance at level 2, with significant variance remaining ($p < .001$).

Personal Communication

⁸ Although it would seem somewhat circular to employ child skills as predictors of family involvement, which has been used in previous analyses as a predictor of child skills, I did test those associations and found them to be nonsignificant.

Families' personal communication with the school or teacher through calling and writing did vary significantly across classrooms ($p < .001$), with 26.6% of the variance between classrooms and 73.4% between individuals. The final HLM (see Table 3.22) revealed that minority families communicated more frequently with their children's schools and teachers ($B = 0.73, p = .001$), as did families reporting higher levels of warmth/ responsiveness / autonomy support ($B = 0.08, p = .042$). However, teacher outreach did not predict communication. After the addition of these variables, significant variance remained in the outcome ($p < .001$), although 13.6% of the variance at level 2 and 4.3% of the variance at level 1 were explained.

DISCUSSION

Summary of Results

Following up on Study 1, a primary purpose of Study 2 was to examine in greater depth the frequency of a variety of family and educator partnership practices in preschool and their associations with children's literacy and social skills. Fundamentally, results from descriptive analyses indicated that families and teachers of preschoolers in this community shared information in a variety of ways and with some regularity (i.e., on average, more than just once per year). As in Study 1, families reported regular home involvement, implementing each of the four strategies under investigation at least every other day. Of these, book reading was the most frequent, although there was variability on each of these practices among families. In addition, families were involved in the school in multiple ways (e.g., volunteering, visiting), most frequently by attending social events with other parents and visiting the school informally, but engaging in each on (approximately) a monthly basis.

Finally, most families communicated occasionally with the teacher or other school personnel through calling and writing. However, similar to the results in Study 1, parents engaged in communication less often than either at-home and in-school involvement, employing each strategy about three times per year. Apart from central tendency and average frequency of implementation, analyses of distributions around mean values showed substantial variation among families in the frequency with which they engaged in these practices.

On the other side of the home-school gap, teachers disseminated information to the home in approximately twice per month and provided monthly opportunities for families to be involved in the school in a variety of ways (e.g., volunteering, attending parties/performances). Teachers, like parents, called and wrote just a few times per year. Finally, as with families, variability between teachers in this outreach was apparent. The more detailed frequency scales used in this study revealed that, in comparison to the daily transitions that children make between the home and the school, teacher outreach and family school and communication involvement practices took place rather infrequently.

The content or skill focus of family involvement and teacher outreach were largely parallel. In general, families employed home- and school-based involvement to target a combination of literacy and social skills, with few families reporting an exclusive focus on social skills. Similarly, teachers' designed newsletters and activities, as well as phone calls and written notes, to feature academic skills in isolation or in combination with social skills. However, both families and teachers used phone calls and written notes for a wider variety of purposes, including policy or schedule issues or, among some teachers, social development alone.

Results from this study also illuminate how teacher outreach and family involvement were uniquely associated with children's development of school readiness skills. Family involvement at home was positively related to several parent-rated social skills at the end of preschool, including self-regulation, responsibility, and cooperation. Home involvement was also inversely related to sound awareness and expressive vocabulary skills. Family in-school involvement was marginally associated with several outcomes but significant related only to children's assertiveness at the end of preschool. Finally, family communication with the school through calling and writing was marginally associated with children's letter recognition and significantly linked to their expressive vocabulary learning during the preschool year. For alphabet skills only, an interaction effect was apparent, such that personal communication between families and teachers was most associated with learning for children whose mothers worked outside of the home.

Effects of teacher outreach were also specific rather than universal and, notably, often inverse. For example, teacher outreach was inversely associated with both spring performance on the Head to Toes task (controlling for child skills in the fall) and, to a marginal degree, parent-rated self-regulation in the spring of preschool. However, a positive association between teacher outreach and family involvement in school emerged as well.

Taken together, results from this study provide empirical data about the much-touted but little-researched construct of school-family partnership in early childhood education. Findings illuminate both how these practices are implemented by families and teachers in one diverse but largely middle-class community, and the degree to which

teacher outreach and family involvement make unique contributions to critical literacy and social school readiness skills. In combination with the findings of Study 1, results show that – over and above a host of other aspects of children’s backgrounds and their learning environments at home and school – family involvement and teacher outreach do relate to children’s literacy and learning-related social skills, but that effects typically do not depend on children’s initial levels of skill, as was hypothesized. Also consistent with Study 1 are signs that school-family partnership efforts, and particular those related to teacher outreach, are not always successful (i.e., inverse effects). Thus a complex story emerges, suggesting that most aspects of school-family partnership are not central to most parents’ or teachers’ practices, but that even so, some positive associations of these practices with child skills are apparent.

Variability in Family Involvement and Teacher Outreach

Descriptive analyses highlighted the diversity among families in their involvement practices. On a fundamental level, given the relatively middle-class SES of the families involved in this study, this finding is important because it indicates that asking families about the frequency with which they engage in these practices is actually an effective way to gather information about these practices, despite potentially high levels of knowledge among families about the import of this kind of involvement. By extension, these results somewhat complicate assumptions about uniformly high levels of home and school involvement among middle-class families. Indeed, considerable variability in parents’ reports of the frequency of implementation is apparent on nearly every practice addressed in these surveys. For example, data show that some families read with their children just once per week, while other families read multiple times per

day. Although not a central focus of this study, future work might explore in greater depth the factors that influence this variability. Hoover-Dempsey and Sandler (2005) would suggest that further questions might tap into the kinds of involvement parents perceive to be important for their children's learning, the specific involvement or outreach practices that they feel sufficiently skilled to undertake, and the practices that are possible and practical within the structures and constraints of their daily lives. The role of children's interests and skills – and parents' perceptions of these interests and skills – in this equation might be particularly important to address.

Similarly, substantial variability in teacher outreach is apparent. The contrast between the highly consistent biannual practice of inviting families to participate in conferences and the other aspects of teacher outreach has implications for the tremendous power of school policy to shape teacher practices in this area; this disparity also suggests that policies leave to teachers many of the decisions about how and how often to send materials home, invite families to the school, and communicate personally. Given the relative paucity of research on this topic, this finding is, in and of itself, intriguing, raising questions about what factors might shape variability in how teachers share information with families. All indications in the notable absence of empirical research on the topic (see Epstein, 2001) are that little pre- and in-service teacher training in the K-12 grades systematically focuses on defining school-family partnership, fostering effective implementation of outreach to the home and invitations for in-school involvement and troubleshooting these practices, and evaluating the efficacy of these practices. Future research might gather more data on this topic, with a particular focus on early childhood teachers. Research could employ more detailed self-report surveys or interview protocols

to explore the goals that early childhood teachers bring to bear on their outreach to families and the ways in which they monitor and evaluate this outreach, as well as to catalog the sources of information upon which teachers draw in their decision-making on this topic.

Alignment of Teacher Outreach and Family Involvement

Findings illuminated several issues related to the degree to which teacher outreach and family involvement are aligned (i.e., involve the same kinds of practices focused on the same child outcomes with similar frequency).

Nature and Frequency of Family Involvement and Teacher Outreach

Gathering data from teachers and families working with the same children facilitates some investigation of the alignment between the involvement/outreach practices implemented by each party during preschool and the child skills upon which these practices focus. Findings raise questions about why personal communication – including writing notes or emails, which does not involve the coordination of schedules in the way that phone conversations do – happens rather infrequently (i.e., just a few times per year). Some have hypothesized (see Hoover-Dempsey and Sandler, 2005) that personal communication is undertaken largely to address problems or concerns about a particular child or situation, and thus is likely to take place infrequently for most children. However, given the positive effects of communication on both constrained (e.g., alphabet knowledge) and unconstrained (e.g., expressive vocabulary) skills during preschool, it is possible (although by no means certain) that more communication would be better. Moreover, that communication was more strongly related to fall-to-spring growth in letter knowledge for children with high levels of initial skill, perhaps restricting communication

to times of challenge problems limits its potential efficacy. Future research might more carefully explore the objectives of and obstacles to communication between parents and teachers of young children.

However, one potential misalignment concerns school-based social activities for families, which teachers rated as the least frequently implemented in-school involvement opportunity but families reported as the in-school opportunity of which they most frequently took advantage. On a practical level, if families are accurate in reporting that they attend such events approximately once per month, which is more often than the average teacher reported holding such an activity, then families must be attending events in addition to those provided by teachers. These might well include school-wide gatherings sponsored by school officials or by parents themselves. Future research might ask about the nature of social events for families and perhaps collect data from both classroom teachers and school principals/program coordinators in order to capture information about the full range of opportunities provided to families by an early childhood program.

In any event, the fact that families reported attending social events with relatively great frequency – even though other in-school involvement opportunities were available and none of these opportunities were mandatory – may suggest that they enjoyed these gatherings and consequently sought them out. In theory, social events offer parents the chance to chat with others who share many of their own experiences, including topics of excitement and concern, related to the development and learning of young children, and perhaps to gain information and support, although future work might venture beyond theory to more closely investigate precisely why parents choose attend these events and

what they find the benefits to be. That teachers provide relatively few of these social events might indicate that teachers do not fully appreciate the things that families value about in-school involvement and might benefit from learning about the results of more in-depth exploration of this issue.

Content Focus of Outreach and Involvement

In addition, a somewhat surprising finding was the general absence of exclusive focus by both parents and teachers on early social skills. Not only has preschool long focused on social competence, over and above emphases on academic skills (Zigler & Muenchow, 1994), but recent work (Pianta et al., 1999) strongly indicates that kindergarten teachers overwhelmingly find that many children lack basic social competence skills (e.g., following directions, making friends), to a degree that impairs individual and classroom functioning. This largely academic or combined academic/social focus may characterize only this particular sample, however it might also reflect the dissemination of discussion begun in the research literature about the nature of early years as learning years to the broader public domain. In fact, this very point is a central focus of many parent- and practitioner-oriented websites, including those sponsored by NAEYC (see <http://www.naeyc.org/ece/eyly/>) and by media outlets such as *Parenting* magazine (www.parenting.com/preschoolers/learning). A similar trend may underlie the finding that book reading is the most frequently implemented form of family involvement at home, likely at least in part related to the great public emphasis on book reading in the media during the 1980s and 1990s. Together, then, these findings imply that public practice may indeed be affected by the dissemination of research findings. As

research on what works in school-family partnership continues, efforts to more accurately map out the pathways from research to practice will be important.

That said, it may be (given the work of Pianta et al., 1999) that social development is not receiving the focus that it deserves, and that some children in particular might benefit from greater focus on social skills might be helpful. At present, then, both the amount of attention that school-family partnership *should* devote to social skills in order to facilitate optimal development for all children, as well as the particular techniques through which social skills could be targeted, remain unclear.

Variability and Alignment Aside, Not Much Partnership

Apart from the apparent variability in and relative degree of alignment between family involvement and teacher outreach, both of which raise important questions about the reasoning behind teachers' and families' choices about partnership, the more detailed scales used in Study 2 (as compared to Study 1) permit absolute statements about the frequency with which families and teachers bridge the home-school gap. As noted in Chapter 1, children travel between these two environments every day, yet these data suggest that families and teachers exchange information – not to mention personalized information through communication – far less often. Critically, these findings are consistent with prior work focused specifically upon high-poverty populations (see Fantuzzo et al., 2000; Rimm-Kaufman & Pianta, 2005).

Two relevant questions thus emerge: first, what does it mean about the nature of this phenomenon that there so few partnership exchanges between parents and teachers, in this sample and in others? One obvious implication is that, for the most part, families and teachers are not updating one another constantly (or even weekly) on children's

learning about the content or skills targeted in curriculum or about children's behavior. Thus, on a daily basis, each caregiver is operating fairly independently of the other. This would seem to seriously complicate coordinated activities between the home and the school, which (at least in theory) might promote children's skills. Why might this be the case? It does not seem, in this sample, that parents and teachers have vastly different goals for their interactions, as has been proposed in some past work (although much of that research has focused on families from minority and/or immigrant backgrounds, where family goals and philosophies about learning and schooling often differ in important ways from those of school institutions). Alternatively, perhaps parents and teachers have little time to make contact. However, as both 90% of families and teachers in this sample reported high levels of satisfaction with the involvement and outreach they had experienced partnerships, it appears that each party is content with this situation, rather than longing for less constricting schedules. Thus it seems that parents and teachers have little motivation to exchange information more often than they do.

A second critical question is: does this generally low rate of partnership actually reflect important missed opportunities to promote early learning? On average, in this study, children began the school year ahead of the national mean on literacy skills and close to the ceiling on social skill measures, and on average, children's skills grew over the course of the year. Thus, overall, it seems that the status quo in school-family partnership in this community is occurring against a backdrop of success for most young children. However, closer review of the empirical relations between children's skills and both teacher outreach and family involvement highlight several areas where school-

family partnership did make a unique contribution to children's learning, and thus where more might possibly be better.

Contributions of Family Involvement at Home to Child Skills

Social Skills

Family engagement in children's learning has traditionally been one the strongest predictors of children's skills (Brooks-Gunn & Markman, 2005; Coleman, 1966). In this sample, controlling for a variety of covariates and examining the influence of a specific set of activities such as book reading, games, and library visits, home involvement was positively associated with parent-rated social skills including self-regulation, responsibility, and cooperation at the end of preschool. This finding, consistent with other work in the field (Grolnick & Farkas, 2002; Grolnick & Ryan, 1998) and with this particular sample (Hindman & Morrison, 2007), may indicate that these activities provide families with the chance to help children practice key components of self-control, including maintaining their attention toward a particular task, inhibiting inappropriate behaviors, and managing their emotions; as well as following through on plans (a hallmark of responsibility) and working well with others (emblematic of cooperation). This hypothesis is supported by the absence of effects of in-school involvement and communication on these skills, both of which are somewhat more distal from the parent-child interactions that are likely to relate to school readiness skills. In other words, in many cases, parents might learn things from in-school involvement and communication that they could subsequently implement in their one-on-one work with children.

Alternatively, as these results are correlational and do not control for children's competence in these skills at the start of the year, it might also be the case that families

engage in more at-home activities with children who demonstrate stronger self-control and pro-social skills because these children are more engaged or more rewarding to work with.

However, the dual measures of self-regulation in this study raise another important issue, in that family at-home involvement was related only to self-control skills assessed by parents (which included more items about self-regulation in context, such as following directions at home), and not to objective observations of self-regulation using the Head to Toes measure. Indeed, these self-regulation measures were not highly or significantly correlated at the end of preschool ($r = .16, p = .08$), even though one would expect that the basic attention management and behavioral inhibition skills assessed by the Head to Toes measure would underlie the self-control-in-context assessed by the parent report measure. This finding in turn raises questions about whether parents are truly accurate in their perceptions of preschoolers' skills, or whether their responses on the SSRS are colored by response bias due to recall failure of prior events, social desirability, or even general positive affect toward their preschoolers. Thus perhaps this effect in part shows that parents who are more involved with children at home tend to rate their children's self-control (and possibly responsibility and cooperation) skills more highly, irrespective of children's actual skills, because they have positive opinions of children generally or even because they have a sense what they *should* do and how children *should* behave.

Thus home involvement emerged as an important predictor of children's social skills at the end of preschool only, if for reasons, and through mechanisms, that remain

somewhat unclear and could perhaps be better understood through the implementation of intervention studies.

Literacy Skills

Controlling for everything else in the final models, family involvement at home was not associated with children's learning about letters or decoding during preschool. These results were in contrast not only to initial hypotheses but also to substantial prior work in the field (including Study 1 of this dissertation). One likely possibility has to do with the stringent analyses. Models herein explore effects of family involvement on learning over the year, holding constant children's skills at the start of the year. In reality, much of a family's contribution to children's learning may be present in children's skills in the fall. Thus it would be inappropriate to assume that family involvement does not matter for child skills, but rather that its unique contribution to children's skills over the course of the year may not be large.

Yet this clarification still leaves open the question of why family involvement is not associated with growth in decoding during preschool, as prior investigations have found it to be (Hindman, Connor, Jewkes, & Morrison, In press; Justice, Weber, Ezell, & Bakeman, 2002; Yaden, Smolkin, & MacGillivray, 1993). One issue is that, although combining these four home-involvement strategies into one reliable scale affords more robust analyses that draw on multiple parent practices rather than just individual behaviors, this combined scale may obscure some specific associations between particular practices and skills. That said, follow-up analyses with this sample did not reveal any significant associations between specific home-involvement items and literacy or social outcomes. This finding is consistent with past work (Hindman, Connor, Jewkes,

& Morrison, In press; Justice et al., 2002; Sénéchal & LeFevre, 2002) indicating that the frequency of home activities such as book reading or game playing may, for normatively developing children, be less important than the specific information that parents and children discuss in the context of these activities. Gathering more information about what parents and children say to one another in the context of home activities will likely be critical for future research in this field.

A second issue relates to the fact that these four home involvement practices are not entirely representative of the numerous behaviors that families might implement with children. For example, a notable omission involves working on rhymes and alliteration, or on decoding, with young children. Future work must incorporate more code-specific items so as to obtain a more comprehensive sense of how families work with children at home and how these efforts may be associated with increases in child skills during preschool.

Expressive Vocabulary

One critical departure from this trend in the data concerned expressive vocabulary, which was inversely linked to home involvement in preschool. As children continue to develop their expressive language skills throughout childhood and adulthood, a ceiling effect is unlikely. However it is also highly improbable that family involvement actually depresses children's skills. More likely, as above, is the possibility that families work more during preschool with children who are struggling, but that these effects are not linked to skill increases by the end of preschool.

To explore the nature of this effect, several follow-up analyses were conducted. First, in an effort to determine whether this inverse effect emerged during the preschool

year, a separate HLM was run to explore predictors (including at-home involvement and other child and family background factors) of fall vocabulary. Findings showed that only three of the available variables predicted children's initial expressive vocabulary skills; older children outperformed their younger peers ($B = 11.16, p < .001$), children of European-American ethnicity had higher scores than those of minority ethnicity ($B = -9.48, p = .003$), and children whose parents engaged in more home learning activities had higher scores ($B = 3.58, p = .044$). Thus this inverse relation between home involvement and vocabulary appears over the preschool year, possibly suggesting that families work more with children who are having difficulty, but that these efforts are not related to gains in children's skills, relative to their peers, by the spring assessment.

To investigate whether this inverse effect remains after the preschool year, an exploratory growth model was used to track the expressive vocabulary development of the 75 children who went to kindergarten immediately after preschool. Analyses showed that, in fact, after the spring of the preschool year, high levels of family involvement were positively related to growth over the summer, particularly for children with lower vocabulary scores at the end of preschool. For example, across the sample as a whole, children with above-average and below-average levels of involvement at home grew significantly over the summer between preschool and kindergarten, but children with high levels of involvement grew more ($t(31) = 2.91, p = .007$) than their low-involvement peers ($t(37) = 2.45, p = .019$). This pattern was especially true for children with the lowest initial levels of expressive vocabulary. Among children who began preschool in the lowest quartile of the sample on expressive vocabulary but experienced high levels of family involvement, growth over the summer between preschool and kindergarten was

significant ($t(14) = 2.50, p = .05$), whereas children with the same level of initial vocabulary skills who experienced low home involvement did not grow significantly over the summer ($t(13) = 1.37, p = .194$). For children who began preschool in the second (medium skill) tercile, the same trend was apparent, with growth from spring to fall not significant for those with low family involvement ($t(6) = 0.15, p = .88$) but marginally significant for those with high levels of family involvement ($t(7) = 2.22, p = .06$). This trend was not apparent among children with high levels of initial skill, for whom family involvement did not relate to growth.

Although exploratory, given the small numbers of children involved, these analyses raise questions about whether home involvement serves the same purpose for children with high levels of skill relative to those with low levels of skill, and also highlights the summer as a time when important learning and catching up can take place.

Sound Awareness

Sound awareness was also inversely linked to home involvement. As detailed in Chapter 1, phonemic and phonological awareness are constrained skills, but relative to skills such as letter recognition, are often difficult to learn because they involve an attention to the sounds in words beyond that required for the comprehension of speech. Thus sound awareness is trainable (and likely depends in part upon explicit instruction) but, for many children, quite challenging to master. It is unlikely that greater frequency of library visits and book reading actually depressed the growth of children's sensitivity to the sounds in words. Instead, it may be that families were more involved with children who were struggling, but that these efforts did not result in relative gains in sound awareness knowledge by the end of the preschool year.

Indirect evidence for this hypothesis comes from post-hoc analyses in which the sample was divided into terciles (i.e., low, middle, and high levels) of fall sound awareness. Indeed, this inverse association was driven by children who began the school year in the lowest tercile of sound awareness knowledge – most of whom had essentially no sound awareness skills. These children did make gains over the course of the year (on average, 31.8 points from fall to spring on the IRT scale), and although there were no differences between the groups in the fall, children with higher-than-average levels of family involvement had lower sound awareness scores than their low-involvement peers by the end of year ($t(47) = 1.77, p = .083$). Moreover, tracking children's development into kindergarten with a growth model, this inverse effect disappeared when considering this whole, two-year trajectory ($B = 1.08, p = .308$).

Home involvement, then, independent of other child-, family-, and classroom-level covariates, emerges in this study as an important predictor of parent-rated social skills, but an inverse predictor of sound awareness and expressive vocabulary during the preschool year alone. These inverse findings are particularly intriguing because they likely indicate that families are engaged but that their particular actions are not highly effective; this situation is ripe for intervention that would help identify what instruction is taking place in at-home involvement and how these practices might be improved. Future work might continue to focus on what families do over the course of the year and the summer to promote children's academic skills, and how effective these efforts are in light of children's prior levels of knowledge.

Contributions of Family In-school Involvement to Child Skills

In-school involvement was linked only to children's assertiveness at the end of preschool. Assertiveness involves understanding how to make friends and start conversations with others, as well as managing emotions around criticism. This finding may suggest that, through in-school participation in volunteering, parent organizations, or social activities with other parents and teachers, family members may learn particular techniques to help children develop assertiveness. Similarly, parents might have opportunities while being in the school to work directly with their children on behaviors linked to assertiveness, or to directly observe situations to which they could later draw children's attention. For example, a parent volunteer might note that his/her own child has difficulty joining groups of children who are playing together and might offer some direct instruction in asking to join either on the spot or later at home about how the child could politely ask to participate.

Alternatively, the link between these variables might actually work in the opposite direction. Research on family involvement with older children (Hoover-Dempsey & Sandler, 2005) has found that children's invitations to parents to be involved play an important role in parents' decisions to become involved. In this way, assertive preschoolers might be more likely to ask their parents to come to the school, a form of family involvement that many young children appreciate.

Finally, this association could be explained by a third variable. For example, parents of assertive children might be more socially competent and assertive themselves, and might thus appreciate the opportunity to interact socially with other parents, teachers, and even children in the school setting. Issues of parent perception might also be relevant

(as they may be in understanding the relation between home involvement and parent-reported child social skills); parents who are frequently involved in the school may have opportunities to see their children interact independently with others in this environment and might have higher evaluations of children's social competence as a result. Future work could investigate this issue using survey or interview protocols.

Contributions of Family Communication to Child Outcomes

Consistent with hypotheses and prior work (Hindman, Connor, & Morrison, 2007), family communication with the school through calling and writing was positively associated with children's letter recognition, and their expressive vocabulary during the preschool year. That communication is linked to these particular outcomes but not to other skills raises questions about what is "special" about alphabet and expressive vocabulary knowledge. As these variables are related but distinct (and not highly correlated in this dataset, $r = 0.50$), one possibility is that preschool teachers and parents perceive these content areas to be particularly important for preschoolers to learn about (see Stipek, Milburn, Galluzo, & Daniels, 1992; Hindman & Wasik, 2007), and thus their communication is focused upon these skills (within the broad constellation of skills termed "academic"). Another is that parents and teachers have received instruction in how to work on these skills with children, and thus communication ultimately results in effective practices for the outcomes. If teachers and parents are less focused upon and/or less pedagogically knowledgeable about decoding phonological awareness, then they may well a) not discuss it, or b) not translate discussions with one another into effective home or classroom instruction.

In either event, as briefly noted above, communication has relatively robust effects relative to letter and word knowledge but yet is infrequently implemented by families and teachers, as compared to both the frequency of implementation of other school-family partnership practices *and* the number of times that children travel back and forth from the home to the school. Although future work, ideally through randomized interventions, would be necessary to show that communication improves child outcomes, it might be the case that more communication would be better, not necessarily just for children who are having difficulty.

Contributions of Teacher Outreach to Child Skills

In general, few effects of teacher outreach during preschool were apparent, although this variable was inversely associated with both the parent-rated measure of self-regulation and the Head to Toes task (controlling for child skills in the fall). These two findings provide converging evidence that teachers reach out to families more when social skills are an issue of import in the classroom. (Notably, because teachers reported on their practices for the whole class, rather than for specific children, these data should not be interpreted to suggest that teachers reach out to particular families with greater frequency when they have concerns about the self-regulation of one child, however future work might investigate this strong possibility.) However, the fact that this effect is negative in sign indicates that teacher outreach is not always associated with gains in children's self-regulation skills, controlling for everything else in these models. These effects are potentially quite important to study further. Critical questions might include why teachers reach out to families (to determine whether or not child social skills at the classroom or individual level are a focal concern), how effective they perceive this

outreach to be, and what (if any) obstacles to sharing information and affecting positive change in child skills they typically encounter.⁹

Teacher Outreach and Family Involvement

Finally, this study explored the possibility that effects of teacher outreach on child skills were not necessarily direct, but might also operate through family involvement. Findings suggest that this is the case, but only for family involvement in the school. Given that the construct of teacher outreach was comprised of more in-school involvement items than home- or communication-based outreach items ($n = 2$ each), analyses in this study may be particularly sensitive to this relation. However, such sensitivity may be quite appropriate. The School-Family Partnership Questionnaire was comprised largely of in-school involvement opportunities because prior work (i.e., Fantuzzo et al., 2000 and Hoover-Dempsey & Sandler, 1997; 2005) suggests that these are among the primary ways in which teachers reach out to families. Still, greater focus on home- or communication-oriented outreach in future might be helpful. In the effort to identify practices over and above newsletters, activities, calling, and writing, focus groups with teachers might be critical.

⁹ However, growth models following children into kindergarten indicate that inverse associations between teacher outreach and parent-rated self-regulation disappeared, while teacher outreach in preschool was positively associated with the linear growth trajectory in Head to Toes skills through kindergarten. One possible explanation is that teacher outreach in preschool does make a unique contribution to self-regulation skills, but that this contribution is not manifested in children's behavior not realized until kindergarten. Through their outreach, preschool teachers may help children (and/or help families to help children) lay the foundation for basic skills related to the management of their attention, behavior and emotion, but perhaps the internalization or coordination of these basic processes takes more time than the 9 months of the preschool year. Alternatively, perhaps there is something about kindergarten – either the instructional environment in the classroom or the expectations that families hold for children – that provides an environment in which self-regulation skills flourish. Future research involving repeated interviews and observations of families, teachers and children over time would help to unpack the mechanisms at work in this effect.

In interpreting this correlational outreach-involvement connection, it is important to note that more outreach through in-school opportunities might encourage families to become involved in the school (i.e., a Field of Dreams-like “If you invite them, they will come” effect). Alternatively, perhaps teachers create more opportunities for involvement when they perceive the families of their students to be interested in becoming involved. More likely, though, is a combination of the two, given that exploratory analyses of School-Family Partnership Questionnaires from teachers who responded during more than one year (20 teachers with questionnaires in years 1 and 2 of the study and just 9 with questionnaires in years 1 or 2 and year 3) found that total teacher outreach from one year to the next is moderately but not perfectly related ($r = .50, p = .02$). Future work might more closely study how and why teachers make decisions about implementing particular kinds of outreach.

Finally, in understanding the implications of this finding, it is valuable to note that family in-school involvement was not as closely associated with children’s school readiness skills as were other aspects of involvement (e.g., home-based and communication-based). This result, in turn, calls into question precisely what families do during in-school involvement activities, and what kinds of opportunities they have to learn new things through observation or discussion that would help them work with children. It also highlights the need to move beyond children’s academic skills to look at other possible benefits of in-school involvement, such as increasing families’ comfort with the teacher or school, or even their knowledge of how to navigate the educational system.

Absence of Some Hypothesized Effects in Results

Of the outcomes under investigation, none is wholly unrelated to any of the school-family partnership variables under investigation, however it is important to note that the relations between of teacher outreach and/or family involvement on child outcomes are not as uniform as initial hypotheses anticipated. This mosaic of findings likely reflects important distinctions between both the various literacy and social outcomes and the different school-family partnership dimensions under examination. Together, these results indicate that school-family partnership in early childhood can be thought of as a multifaceted construct that is differentially related to a constellation of child skills. Drawing on this evidence, future work can undertake more detailed investigations of particular aspects of this complex pattern of effects.

Absence of Hypothesized Interaction Effects

Also in contrast to hypotheses (and, to some degree, Study 1), only one interaction effect (between family communication with the school and children's letter knowledge) was apparent. This pattern of results may indicate that, indeed, teacher outreach and family involvement are mostly one-size-fits-all, at least in this sample, and that associations between these factors and child skills do not vary substantially with children's levels of skill. It is conceivable, however, that this effect may have to do with the sample involved in this study. Much of the work on interaction effects with instruction has been focused on children with low levels of skill (Reese & Cox, 2000; Robbins & Ehri, 1994; Wasik, Bond, & Hindman, 2006), although children in this sample were largely within the range of normal scores on all outcomes. Gathering data at this level of detail in higher risk populations might yield somewhat more nuanced results.

However, another body of work (Connor, Morrison, & Petrella, 2004; Connor, Morrison, & Slominski, 2006) has focused largely on middle-class children, even from this same community, as has found interactions between child skills (on these same measures and in these same ranges of scores) with precise amounts of types of teachers' classroom instruction. That no such effects appear for instruction through teacher outreach and family involvement may be grounded in the much less precise measurement of these constructs, relative to measurement of instruction in the aforementioned research. For example, in this study, parents reported on how many times they read books with their children each week, not on the number of minutes that they spent reading each day, or on the kinds of books (e.g., storybooks, alphabet books) that they read (and, by extension, the kind of book-related conversation that was likely to ensue). Detecting interaction effects may involve much more specific assessment of teacher outreach and family involvement, in the tradition of assessing other kinds of home and classroom instruction, in a more diverse sample.

LIMITATIONS AND FUTURE DIRECTIONS

Several limitations in this study shape the interpretation of findings and highlight areas for future research.

Missing Data on Content of Involvement and Outreach

As in Study 1, missing data limited analyses as well as interpretation and generalizeability of results in Study 2. Many teachers and families enrolled in the larger Pathways study did not return School-Family Partnership Questionnaires, while a few did not complete the SSRS assessment child social skills. Further, particularly among families, including even those who actually completed the School-Family Partnership

Questionnaire, many did not respond to questions about the content upon which involvement focused. The larger issue related to missing questionnaires highlights questions about how best to encourage family and teacher participation.

The Pathways study was a 5-year investigation that included many incentives for families, including annual gift cards to a local bookstore and a \$100 gift card to be awarded to families who participated fully at the end of 5 years. In addition, families received updates on children's skills twice per year and were invited to participate in a home visit during the summer. Thus families had frequent, meaningful contact with and rewards from the Pathways project. Yet family participation flagged over the years. One possible explanation is that the incentives and rewards were not sufficient to offset the time and energy involved in completing a large battery of questionnaires and scheduling and participating in a videotaped home visit.

In general, it may be the case that a combination of clear explication of the study, including in-person consultations, frequent updates on children's progress as well as broader research findings, and sizeable financial incentives at regular intervals are necessary but not wholly sufficient. In addition, frequent check-ins with families after missed data to encourage data submission might be helpful.

Further, that families who returned questionnaires often did not respond to the content items suggests that these questions may not have made sense to families. Perhaps families had not considering the skill focus of their involvement before and were confused by available options. Some research (Hoover-Dempsey & Sandler, 2005) indicates that asking a more open question, for example prompting families to "consider a time when your child was having a problem at school" or otherwise cueing a

contextualized memory, might produce more detailed and accurate thoughts. Another possible advance would be providing more examples on the questionnaire of what sorts of information would characterize and “academic” focus, such as “learning letters, numbers, or new words.”

Finally, perhaps asking for one overall evaluation of what these parent-teacher interactions focused on is simply too reductionist. Another technique, such as asking parents to rate which of those content areas was most important for them to address in their interactions with teachers, or to assign percentages to each of three options – academic, social, and policy. In any event, focus groups of parents and teachers might permit exploration of the relative utility of various questioning strategies in order to identify optimal techniques to collect data of this nature through surveys or interviews.

Techniques for Managing Missing Data

As detailed above, missing data in Study 2 were imputed using single imputation methods. Although some advantages to this strategy were highlighted in Study 1, the potential benefits of multiple imputation may outweigh these costs (Sinharay et al., 2001). First, multiple imputation seems, at least in some simulation studies (see Widaman, 2006) to create estimates that are substantially closer to those derived from complete data; this could possibly make the difference between correct and incorrect conclusions about what school-family partnership practices work for particular young children and thus warrants closer inspection (see Acock, 2005 for more extensive explication). Moreover, the unwieldy aspect of working with four or more additional imputed datasets is largely irrelevant when using HLM, because the program easily executes multiple iterations and synthesizes the results. In this same vein, it is also

possible to use an “implicit” imputation (as referred to by Widaman, 2006) such as FIML direct imputation methods, which do not generate new values to fill in gaps in a dataset but rather leverage information about variables related to missingness and adjust parameter estimates in a model to compensate. Consequently, only one dataset is needed.

To compare results, future revisions of this study will repeat the data imputation using multiple imputation in IVEWare (or a similar program), generating five individual datasets, and re-run the models. Additional analyses might test the results of a FIML direct imputation adjustment; models will remain identical those in the present study, although for FIML methods to be maximally effective, all variables relevant to missingness must be included in analyses, so some small changes may be necessary.

Teacher Sample Size

In the present study, the sample of teachers was not sufficiently large to permit confirmatory factor analyses or even principal component analyses that would illuminate whether teacher outreach may indeed be a multi-dimensional construct. At present, there is little clarity about the factor structure of teachers’ ideas about outreach to families. Teachers may make decisions about outreach based on the home- and school-oriented dimensions that are frequently found to be relevant for family involvement. Alternatively, perhaps other aspects of outreach, such as personal interaction vs. dissemination of materials without interaction, are more salient to them. Future research might deliberately collect a large sample of teachers – even without collecting family or child data – to explore this crucial issue.

Family Involvement Variables

Family involvement variables might be improved in future surveys. As noted above, only four variables tap home involvement, omitting some critical issues related to code-related instruction in letters and sounds. In addition, few families are likely to go to the library daily; a better question might be, “How many books do you usually borrow each time you visit the library?” Similarly, communication is captured by just two variables. Additional items might separately address notes/emails and calls to teachers and other educators (e.g., aides, school psychologists). In addition, more schools and districts are building extensive websites that families can check for information about children’s classrooms (including homework and upcoming events); new items might address the use of these sites. Related to in-school involvement, the fact that some parents reported daily attendance at social events raises questions about precisely what kinds of events parents consider to be social events (and thus about the wording of this item on the School-Family Partnership Questionnaire). Finally, using the same rating scale for home-, school-, and communication-based involvement would allow analysis (ideally confirmatory factor analyses involving latent variable techniques) of all items and would provide stronger evidence for the hypothesized three-dimensional structure.

Teacher Outreach Variables

In much the same way, teacher outreach items could be clarified and enhanced. For example, as with families, asking about website postings might be helpful. Further, teachers’ satisfaction with outreach and involvement might be explored by explicitly asking teachers to rate their satisfaction. In addition, in this study, teachers were asked to report their outreach to children in their classrooms on average, rather than to report their

outreach to individual families. Because outreach may well be individualized, gathering more specific information about this issue will be important in future research.

Ceiling Effects on Social Skill Measures

As children age in this study, ceiling effects were apparent on the Head to Toes measure, as well as on the parent-rated SSRS subscales. Future work might employ different measures; indeed, the Head to Toes measure will soon be normed to connect to an expanded Head-Toes-Knees-Shoulders version with increased difficulty, delaying the ceiling until first or second grade.

Effects of Specific Content

of Teacher Outreach and Family Involvement

In this study, although exploratory data were collected on the content of school outreach and family involvement, analyses of the role of this content in children's learning during the preschool year were not possible because the available sample was quite small, as respondents from just one wave of the study were asked these questions, and also because many respondents in that wave simply skipped some of these questions. Given the work of Sénéchal and colleagues, it may be the case that, for example, communication focused upon social skills is related to social development but not to literacy development. However, the fairly general categories provided in the School-Family Partnership Questionnaire (i.e., "academic" vs. "social" skills) might be too broad. Instead, asking about the content of these partnership strategies by disaggregating code-, vocabulary-, and math-related foci and self-regulation and interpersonal social skills might be important.

CHAPTER IV:

GENERAL IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Studies 1 and 2 complement one another by revealing the ways in which teachers and parents of preschoolers in both low-income communities and more middle-class settings share information, as well as the ways in which these partnership practices can uniquely contribute to children's literacy and social learning. They also show that school-family partnership does, over and above a collection of covariates related to social background and both home and school learning environments, contribute to early literacy and learning-related social skills, albeit with fairly small effects. Further, they indicate that these effects are not universal, but rather vary across school readiness skills. Several concurrent findings between the two studies, as well as some divergent results, warrant particular discussion.

Variability in Teacher Outreach and Family Involvement in Head Start and Diverse Preschools

As noted above in the discussions of both studies, the full possible range of variability was discovered on most teacher outreach and family involvement items, both in Head Start preschools and in schools serving a more diverse community with many middle-class families. This variability indicates that, despite general agreement in public and academic circles, parent involvement and/or parent-teacher collaboration in early

education are important (Hill & Taylor, 2004). Substantial differences remain among families and educators in either (or both) what practices they think are appropriate or what practices they are able to undertake. Particularly in programs like Head Start, which place high value on (and commit a good deal of funding to) school-family partnership, it seems that there is room for increase in some families.

At present (as noted in Chapter 1), research is currently exploring how parents – not just of young children – construe their roles as educators and partners with teachers, and particularly how those ideas might vary with family characteristics including race, ethnicity, education, or even parent-child relationship (Simpkins, Weiss, McCartney, Kreider, & Dearing, 2006; Taylor, Clayton, & Rowley, 2004; Waanders, Mendez, & Downer, 2007). Study of teachers' ideas has begun (Graue & Brown, 2003; Graue, Kroger, & Prager, 2001), but to date this work has focused largely on kindergarten teachers. Given their typically different backgrounds, often characterized by lower levels of education and certification, preschool teachers may have very different views. Better understanding of how families and teachers develop dispositions and practices that either facilitate or impede collaboration is critically important, if we are to understand the nature of this aspect of education and, ultimately, help families and schools tweak practices to optimize children's learning.

However, findings from these studies also clearly show that not all outreach and involvement is equally related to children's skills, hence calling for more of both on the grounds that "more is better" would be ill advised. Instead, careful view of which aspects of school-family partnership were found in these studies to be associated with particular child skills is in order, which carries implications for future research.

Family Involvement at Home

In both studies, family involvement at home (and, in Study 1, book reading in particular) was positively associated with vocabulary, albeit in different ways. In the FACES data, book reading was positively associated with vocabulary during preschool, although this effect was reduced by the end of kindergarten. In Study 2, the effect was somewhat more nuanced, in that effects were inverse in preschool. Why do we see these different patterns of effects across these two studies of preschool children? One reason may lie in the fact that Study 1 measured receptive vocabulary while Study 2 investigated expressive vocabulary. The store of words in a child's receptive vocabulary is always larger than their expressive vocabulary, because receptive vocabulary includes words that children can produce by themselves (i.e., expressive vocabulary) as well as those that they perhaps know less well and simply recognize when used by others. Thus research often finds that receptive vocabulary is more readily promoted by instruction (Hindman & Wasik, 2007; Wasik, Bond, & Hindman, 2005; Senechal, 1997). One part of the disparity in findings may be that expressive language is somewhat more challenging to build, and that positive effects of home involvement are not immediately realized.

A second possibility has to do with the different populations in these two studies. In general, the Head Start children in Study 1 were below the national norm in their vocabulary skills in preschool, whereas the children in Study 2, largely of middle-class backgrounds, were above the national mean. As noted in Chapter 1, many young children in poverty have lower levels of academic skill than their more affluent peers in part because they have not had as much access at home or in care settings to opportunities to develop this particular knowledge (e.g., conversations, book readings, games). Thus it

may be that, for these children, home involvement such as book reading that takes place during the Head Start year provides basic information that helps build basic skills, but that for children with higher levels of skill, their learning of relatively more complex information depends upon other kinds of activities, such as trips to the zoo that might inspire decontextualized conversation or decoding-related activities that teach children about letters and sounds.

Finally, it is valuable to note that Study 2 found that the summer was a time in which children with low levels of expressive vocabulary but high levels of family involvement at home gain on their more skilled peers. Given the substantial work on summer learning (or, unfortunately more appropriately, summer slip) among children, especially those from low-income backgrounds (Borman & Boulay, 2004; Burkham, Ready, Lee, & LoGerfo, 2004), an important extension of Study 1 might include tracking the learning of Head Start children, particularly in the critical areas of early code- and vocabulary-related skills, from the end of Head Start to the beginning of kindergarten, or as would be possible in the FACES 2000 data, from the end of their first year of Head Start to the beginning of their second, looking at the potentially moderating influence of family involvement in that summer learning.

One additional discrepancy between the two studies was the absence of effects in Study 1 of family involvement on children's approaches to learning and cooperative/compliant social skills, as compared to the consistent effects of family home involvement on children's social skills in Study 2. Although discussion of the Study 2 findings focused on the fact that the use of parent report may have played a role in the effects, it is critical to note that children's approaches to learning were also evaluated in Study 1 by

their parents. One possible reason for these divergent findings relates to the availability of different covariates in the two studies. The FACES Study (Study 1) included measures of both authoritarian and authoritative parenting, whereas the Pathways Study (Study 2) included general measures of parent warmth/ responsiveness and management/ discipline with, on average, high scores (indicating greater responsiveness) among families. Indeed, in Study 1, these two aspects of parenting were related to approaches to learning, and the latter is related to cooperation/compliant skills. It is conceivable that the more precise variables available in the former study accounted for variance in the outcome that would otherwise (i.e., in Study 2) have been attributed to family involvement. However, follow-up analyses revealed that, without these authoritative and authoritarian variables, results for the family involvement variables were the same.

Alternatively, differences in results may have been related to the differences in the nature of the social skill constructs under examination. More specifically, as noted in Chapter 1, “approaches to learning” is comprised of several more fundamental skills including self-regulation, engagement, and enthusiasm, thus it is possible that parent involvement was not linked to all of these components (but perhaps would have been associated with just self-regulation). In a sense, then, the dissimilar findings around family involvement at home and children’s learning-related social skills in these two studies may provide evidence of the need for specificity and precision in measurement and analysis. Future work might measure both component social skills (e.g., self-regulation, cooperation) and broader collections of these skills (e.g., approaches to learning, classroom interpersonal competence) in the same population and evaluate the role of school-family partnership strategies in these skills.

Family Involvement In School

Both studies revealed that parent involvement at school was predicted by opportunities that teachers or schools provided for this kind of involvement. The replication of this effect across studies is important, as it provides support for the hypothesis that the effect in Study 2 of teacher outreach on in-school involvement is not driven solely by the numerous school-involvement items that comprise that construct. Moreover, it is possible that learning more about how school outreach and family in-school involvement are connected, and particularly about whether these are causally related, would ultimately help researchers and practitioners to leverage this relation to encourage family involvement at home and through communication.

Family Involvement through Communication

The FACES study found that parent-teacher communication was not directly related to any child skills, although the Pathways study identified positive associations with letter knowledge and expressive vocabulary. As the outcomes and communication-related items measured by both studies were quite similar, even while the Pathways study involved a more precise response scale, these discrepancies are potentially related to differences in the nature of communication between the families and teachers in these studies. For example, perhaps parents in the FACES study had more brief conversations with teachers or other school officials that did not contain as much rich information, or perhaps they did not follow up after their phone calls to troubleshoot new practices. An additional possibility is that the quality of the relationship – particularly the positive or negative valence of the relationship – might differ across these populations. Here again,

future research of a highly detailed nature would illuminate the nature of these differences.

Generally Small Effect Sizes

It is critical to note that, while many of the associations between school-family partnership practices and child skills were statistically significant, they primarily explained less than 5% of the variance in child outcomes. Given the constellation of other variables in the models, it is not surprising that the school-family partnership variables would not account for a larger amount of variance. However, these small effects might also reflect a lack of clarity in the very construct of school-family partnership. For example, some of the scales of several items featured acceptable but low reliability, indicating that teachers and families might in practice behave differently than would be hypothesized by theories in the field. The following section further explores remaining questions about the very nature of school-family partnership.

Uncertain Nature of the School-Family Partnership Phenomenon

As a final point, aside from the discrete explanations of particular effects in the individual studies, it is important to consider the fact that, as a whole, the two studies are largely discrepant in their findings. Given the indications from Study 2 that school-family partnership is in many ways infrequent, this patchwork of findings implies that the school-family partnership phenomenon, in its current state in American preschools, may be a rather nebulous entity that looks very different in different places but that, overall, is not a central component of the daily practice of most schools. Thus efforts to evaluate the role of teacher outreach or family involvement (apart from well-studied instructional practices such as book reading and conversation) in children's learning may be hampered

by the challenge of seeking a weak signal amid a good deal of noise. Yet the data analyzed in this dissertation show that there are unique associations between aspects of school-family partnership and child school readiness skills. Consequently, perhaps one of the most important conclusions of this dissertation is that substantial need for research on this topic remains and is warranted. The remaining portion of this dissertation outlines directions for future research.

GENERAL FUTURE DIRECTIONS

Overarching Model for Future Research

A coherent model that both posits key constructs in the phenomenon of school-family partnership and provides hypotheses about their relations to one another would guide future research. As detailed in Chapter 1, a primary goal of school-family partnership is to capitalize on the distinct opportunities that the home and school learning environments provide, including (respectively) one-on-one instruction from close relatives who know children well and whole- and small-group instruction by experts with a variety of materials and tools at their disposal. Ultimately, stronger research on school-family partnership would help teachers and families coordinate their activities in these two contexts to complement one another and children's levels of skill. For example, were a preschooler struggling to learn the letters of the alphabet, her parents and teachers might meet to work out a coordinated plan of action focusing on the letters in her name and other familiar and personally important words. Facilitating this kind of ongoing, personalized school-family partnership would require:

- (a) early accurate information about children's relative skills (for example, in the area of literacy, and particularly in letter knowledge, sound awareness, vocabulary, and perhaps general enthusiasm for reading);
- (b) clearly articulated expectations from school administrators that parents and teachers will engage in frequent personal communication as well as in-school and home-based outreach and involvement
- (c) frequent outreach/involvement through communication, in-school events, and home-based activities over the course of the year, focused upon promoting children's skills – aimed not just at addressing problems, but also highlighting areas of success;
- (d) training for parents and teachers about how to work effectively with children around skills such as early literacy, so that efforts to teach children at home and school are optimally effective;
- (e) routine assessment of children's skills over the year by parents and teachers and even formally, so that the effects of schooling, home learning, and school-family partnership are apparent, and so that these practices can be continuously tailored to children's skills.

In sum, this model of school-family partnership draws heavily on ideas about structured, targeted, child-centered coordination that have been long embraced by special educators and place the skills of the child at the center of a multi-front educational effort.

Examining each piece in greater depth, the school year should begin with (point (a)) a comprehensive assessment of children's skills, not just with regard to levels of clinical difficulty in cognitive or social areas, but with an eye toward academic skills

such as letter knowledge, facility with recognizing and manipulating the sounds in words, and vocabulary knowledge; as well as social skills such as behavioral and emotional self-regulation and cooperation and compliance. Results of assessments, ideally performed by teachers or other educators either in the school or home context (for example, during a home visit), should be shared with teachers and families and clearly explained to both. Subsequently, teachers and families should set goals for children's learning, thinking both about the short term (i.e., next month or two) and the longer term (i.e., by the end of the year).

Second, related to (b), school/Head Start administrators must clearly explicate the need for this initial cooperative goal setting and frequent follow-ups on children's learning. As indicated in these studies, teachers and parents vary significantly from one another in the frequency of their partnership practices, thus an expectation for (for example) monthly personal contacts by phone or in person, monthly newsletters from teachers to the home featuring activities that complement classroom themes and curriculum, and opportunities for in-school involvement that allow parents to learn about children's learning and development (i.e., workshops) or about their own children (i.e., classroom volunteering) should be made explicit. Moreover, if teachers will be asked to contact each family once per month, time must be built into their schedules to facilitate this contact. Conversely, families must know that this contact is required.

Regarding (c) and (d), families and teachers must then undertake these partnership practices and use them as effectively as possible. This latter point likely involves training of teachers and parents to ensure that letter learning activities or book readings – the activities in which home-school coordination is actually taking place – are informed by

best practices in the field. In Head Start, education coordinators might work with teachers while family service coordinators might collaborate with parents. It is also likely that, for teachers, pre- and in-service professional development should target family outreach, focusing both on general practices (i.e., for families who are not native speakers of English, translators should always be available) and on content-specific practices (i.e., for children who are struggling to learn letters, personal names are a good place to start).

Finally, as children's learning and development are likely to proceed in an organic fashion, with some goals more easily attained than others, an important feature of school-family partnership is its ongoing nature, marked by frequent check-ins and follow-ups between parents and educators to ensure that home and school instruction are working and to fine-tune those that do not seem to be. Along with these parent-teacher check-ins, children's skills should be routinely monitored, for example through brief objective measures by parents and teachers (i.e., testing children's knowledge on alphabet flashcards). This routine assessment is likely to make children's progress more transparent, as well as to provide clear goals and prompt feedback for parents and teachers as they work with children between meetings or conversations.

To realize these numerous objectives for school-family partnership, additional information on several fronts is required.

Understanding Teachers' and Families' Ideas about School-Family Partnership

As noted in Chapter 1, the broader literature on school-family partnership in the primary and secondary grades has a strong sociological bent, and a good deal of research has been devoted to examining families' ideas about why and how they decide to get

involved with children's learning and schooling. As America becomes more ethnically and culturally diverse, increasing attention in that literature is being devoted to investigation of how minority families think about and act on involvement at home and school. Yet a good deal remains to be understood about the goals that families of young children have for their children's early learning, particularly with the recent emphasis on early academic learning in the popular media and press, as well as how they feel they ought to be involved in this learning. At the same time, as lamented frequently in previous chapters, remarkably little is known about how teachers of young children (or really, teachers at any grade) acquire information about outreach to families or family involvement, how they select outreach strategies (i.e., why some send activities home every day but some send them just once per month), what precise objectives they hope to accomplish with outreach, and how they know whether or not outreach is advancing their objectives.

This information could be ascertained through a series of studies. First, a survey of teacher education programs at colleges and universities around the country could be conducted to gather data on the ways in which pre-service teachers are provided with information about school-family partnership. Institutions could be asked about the number of required courses exclusively dedicated to this topic; the number of courses that devote at least 15 class hours or more (i.e., about 4 weeks of class) to the topic; the number of courses that touch on the topic by devoting some time, but fewer than 15 hours, to the topic; and the number of courses that do not address this topic for at all. Collecting descriptions of core courses from various institutions, and even syllabi from these courses, would be ideal. A call for information could be disseminated through

AERA, and particularly the School-Family Partnership and Early Child Development special interest groups, and a financial incentive could be provided to teacher education faculty or program administrators who participate, as well as a guarantee of easy and prompt access to study results.

Second, it would be potentially useful to study practicing preschool and even kindergarten teachers' a) education and training in school-family partnership, b) beliefs about its value in children's learning and their own classrooms, and c) practices through which they implement outreach, and d) frequency of using these practices (in general, across a whole classroom of children). Data could be collected from a sizeable sample of teachers ($n \approx 200$) using self-report surveys, with a sub-sample of teachers ($n \approx 20$) asked to engage in a more detailed personal interview. Initial focus group meetings with teachers could be used to obtain feedback on the survey and interview protocols before collecting data in the field, helping to ensure that the measure is clear and comprehensive. Financial incentives would be provided to teachers for their participation, along with information about the results of the study. These data would illuminate the nature of teacher outreach to families and would also permit analysis of its still-mysterious factor structure.

Following this study, it would be interesting to collect data on beliefs about outreach to families among pre-service teachers and track those beliefs – along with practices – through their teacher education programs and into their first years in the field. An interesting challenge in teacher education relates to the fact that pre-service teachers are rarely involved in family outreach when they are student teachers, yet they are

expected to be expert at outreach upon becoming independent professionals. Better understanding of how relevant ideas and behaviors develop would be key.

Fourth, the issue of how teacher outreach and family involvement relate to one another and to child development over the school transition could be addressed through a more extensive study, recruiting a substantial number of preschool children and their families ($n \approx 300$) from a diverse community and over-sampling children and families in poverty. Data on children's academic and social outcomes could be collected at the start and end of preschool, kindergarten, and first grade. Families and teachers would be surveyed or interviewed in the fall and spring of each year on the nature, frequency, and content focus of their partnership. Data would afford multilevel longitudinal models of the effect of teacher outreach over the school transition on family involvement, and of both aspects of school-family partnership on child outcomes, building on the findings of this dissertation.

Finally, moving beyond correlational research, intervention work will be helpful in identifying how teachers and families can most effectively work together to promote school readiness. For example, the positive associations in the second study between children's letter knowledge and the frequency of school-family communication could be more closely examined through a structured randomized control intervention. In both control and intervention conditions, teachers and parents might implement a curriculum focused on letter knowledge at home and school. Curriculum activities would include fairly typical opportunities to work with models of letters (i.e., tracing letters with stencils, using magnetic letters), identify letters (i.e., reading alphabet books, taking letter walks), and produce letters (i.e., writing one's own name, writing in journals, writing

notes to other children and to families). Parents and teachers would assess children's progress frequently (i.e., each week or every other week), using a simple assessment such as alphabet flashcards.

But one of the two conditions might also include weekly or bi-weekly communication by phone between parents and teachers, with a focused set of topics for discussion, including a) updates on children's progress both at home and school and b) appropriate adjustments to both home- and school-based activities for the period until the next personal communication occurs. The intervention might continue for 8 to 12 weeks. Comparison of pre-test to post-test letter learning between children in the intervention condition (i.e., those who had extensive communication) and those in the control condition would show whether optimal, structured communication can promote children's letter learning. In this way, it would be possible to systematically test the causal nature of effects that have emerged from these studies.

In addition, the absence of some hypothesized effects may indicate that some aspects of school-family partnership are not carried out in effective ways without explicit guidance and training, not that particular practices could never be effective resources for children's learning. Interventions would be valuable in exploring this possibility. For example, interventions with families and teachers of preschoolers in generally middle-class communities (as in Study 2) might focus on in-school involvement, which is associated with children's learning in the Head Start study (Study 1) but not in the Pathways study (Study 2). Perhaps outlining practices for in-school involvement that are likely to help parents learn – such as collecting questions or points of concern upon

which parents would like to focus at the start of in-school events – would help to optimize these experiences for families (as well as for teachers, and ultimately, children).

Examining the Role of School-Family Partnership in Different Early Transitions to School

In the wake of recent emphasis on and efforts to prepare young children for school, options for early education available to the average family have greatly increased. In the community involved in Study 2, for example, families were able to choose to place their children in various preschool programs, including Head Start (all-day classrooms for high-poverty children), Michigan School Readiness Programs (half-day classrooms for high-poverty children), Stepping Stones (an all-day early preparation program for three-year-olds), and Junior Kindergarten, an all-day preparation-focused program for four-year-olds, in addition to the basic fee-based half-day preschool program. Although there were no significant differences in teacher outreach or family involvement in these different kinds of programs, most families involved in this study had selected the third option. In future, recruiting larger samples of teachers, families and children involved in these various preschool programs might reveal that school-family partnership does vary with the missions and clientele of these programs. As states move toward universal preschool, understanding differences between these program models will become increasingly important, and examining the school-family partnership component of curricula in particular might do much to ensure that all children have access to the most optimal learning opportunities possible.

Understanding Minority Ethnicity

Study 1 revealed a significant gap in literacy skills between minority and European-American children at the start and end of Head Start; in addition, while minority children showed a higher rate of growth toward the end of kindergarten, they remained behind at the end of the study. It is important to note that, of minority ethnicity children in this sub-sample and in Head Start more broadly, most are black, and specifically, African-American. Yet within that sample of black children and families, many important distinctions can be made. For example, many children of African descent come from families that have been living in the United States for hundreds of years, whereas others come from families that have recently emigrated from African or Caribbean countries to America. Still others are in fact bi- or multi-racial. As the FACES study kept meticulous records about both child and family ethnicity that make these critical distinctions, more precise analyses could be conducted with this information in an effort to unpack potentially important links between ethnicity and early learning. Apart from closer inspection of group differences, there may be critical individual differences both across and within ethnic groups regarding trajectories of literacy (but apparently not social) growth. In other words, the “story” in these data is most probably substantially more complex than the assertion that African-American children just don’t do as well as European-American children on code and vocabulary assessments during the school transition period.

To this end, latent class analyses have been conducted using the ECLS-K data to investigate distinctions among African-American children in achievement trends over time (Davis-Kean & Jager, 2008). Results show that there are important differences

within this ethnic group in children's learning. For example, within this ethnic group (which typically scores below European-American children), there is a small set of children who are highly successful. Analyses at this level of specificity are important in order to both appropriately model the developmental trajectories of children's learning and to break down ethnically-oriented essentialist ideas about which children do well in school and which do not.

As a consequence, future work will re-examine these analyses looking only at black (i.e., primarily African-American) and Hispanic/Latino participants in Head Start to explore whether the same variables are relevant, and whether associations are the same across groups. Group comparison methods in SEM might be the best approach for these models, comparing these individuals (or, given sample sizes, perhaps just black participants) to European-American participants. Second, latent class analyses within the population of black and Hispanic/Latino children will be conducted in order to investigate in greater detail the trajectories of achievement within these ethnic minority groups.

Looking at Change rather than Growth

While center goals, in-school opportunities, incentives and transition practices were measured only once – at the end of the year – during Head Start, family involvement was measured in the fall and spring of Head Start and the spring of kindergarten. It might interesting to look at the degree of change in family involvement over the course of the school transition starting in September or October, the relations of Head Start center-level variables to this change, and the associations between children's skills and family involvement at each time point or change in family involvement over

the study. One way to do this would be to fit a growth model to family involvement in preschool and kindergarten, assessed in the fall and spring of each year (i.e., at least four times, to allow the modeling of random linear and quadratic terms), and then use the slope and intercept from this model as predictors in a second model testing effects of various resources on growth in child skills. Still another way to do this would be to use structural equation modeling and to test relations between child outcomes and family involvement at each measurement point, controlling for a variety of other paths of associations between variables in the model.

Evaluating the Role of School-Family Partnership in the Learning of Three-year-old Children

Approximately half of the children in the FACES sample, however, attended two years of Head Start and then went to kindergarten, as did approximately half of children in the Pathways study. Examining the longitudinal effects of parent involvement and center outreach on children who spent two years in the program would provide the opportunity to replicate the findings from this study while also providing insight into whether there might be additive or cumulative effects of family involvement and/or center outreach on children's skills over time. As noted above, examining change in family involvement from fall to spring would be particularly interesting.

More Specific Questions Still about the Nature of School-Family Partnership

As noted above, it is important to ask questions of parents and teachers throughout the school year to map out the frequency and focus (e.g., code, vocabulary, or social skills) of parent-teacher partnership – individualized at the level of the child/family – over the course of the school year. In addition to surveys and interviews, observing

parent-teacher interactions, such as conferences (which are mandated, and thus a potential resource of which all families might take advantage) might be the most objective way to gather rich data about the focus and process of these meetings. Videotaping and then coding interactions with an eye toward the information under discussion, the clarity of the plan to adapt instruction at home and school to suit children's needs (and the degree to which the plan includes research-based practices), and strategies for follow-up after the conversation would provide extensive information about this ill-understood phenomenon. Additional questionnaires or interviews might subsequently be used to gain information about what follow-up occurred and how children progressed.

Special Needs Children

The two studies that comprise this dissertation focus on typically developing children. However, children with special needs – particularly those with broader cognitive developmental disabilities (e.g., autism, MR) or more discrete learning disabilities (e.g., specific language impairment, dyslexia) – may be a particularly interesting population for whom issues of school-family partnership could be critically important. These children are often in particular need of extra support in their learning, and both their parents and teachers are aware of their special diagnoses. Thus, for these children, the stage may be set for strong school-family collaboration; moreover, these children might have a particular need for this collaboration. Future work on school-family partnership might make an effort to over-sample these children, or might focus exclusively on programs aimed at promoting the learning and development of special needs children.

FINAL CONCLUSIONS

Despite an increasing body of knowledge regarding how children learn to read, as well as the objective that all children should read fluently by grade four, America's literacy crisis remains a pernicious problem that threatens our society's stability and productivity. School-family partnership, particularly in the early years, is not a novel idea; indeed, private, Head Start, and public schools have emphasized this for decades (Beatty, 1995; Zigler & Muenchow, 1994). However, in many ways, this resource has yet to be fully exploited. Head Start, for example, is not yet able to provide parents and teachers with specific guidelines about which at-home, in-school, and conferencing practices are most promising supports for particular reading readiness skills. The two studies in this dissertation indicate that school-family partnership is relatively infrequent, and that the specific information that parents and teacher exchange remains unclear. Even so, these practices make a unique contribution to children's social and literacy outcomes, over and above a collection of child, family, and educator background factors. Future research can build upon these findings to further untangle the nature of school/teacher outreach and parent/family involvement and examine the links between these more specific constructs and children's skills.

Figures

Figure 2.1

School-Family Partnership in Head Start Preschools Data Collection Timeline

		Fall HS	Spring HS	Fall K	Spring
K					
Schools/Teachers	Child Classroom Social Skills	X	X		X
	School Outreach Interview		X		
Families/Parents	Family Involvement at Home	X	X	X	X
	Family Involvement at School		X		
	Child approaches to learning	X	X	X	X
Child Skills	Decoding	X	X		
	Vocabulary	X	X		X

Figure 2.2

In-school Involvement: Teacher-Child Relationships and Child Age

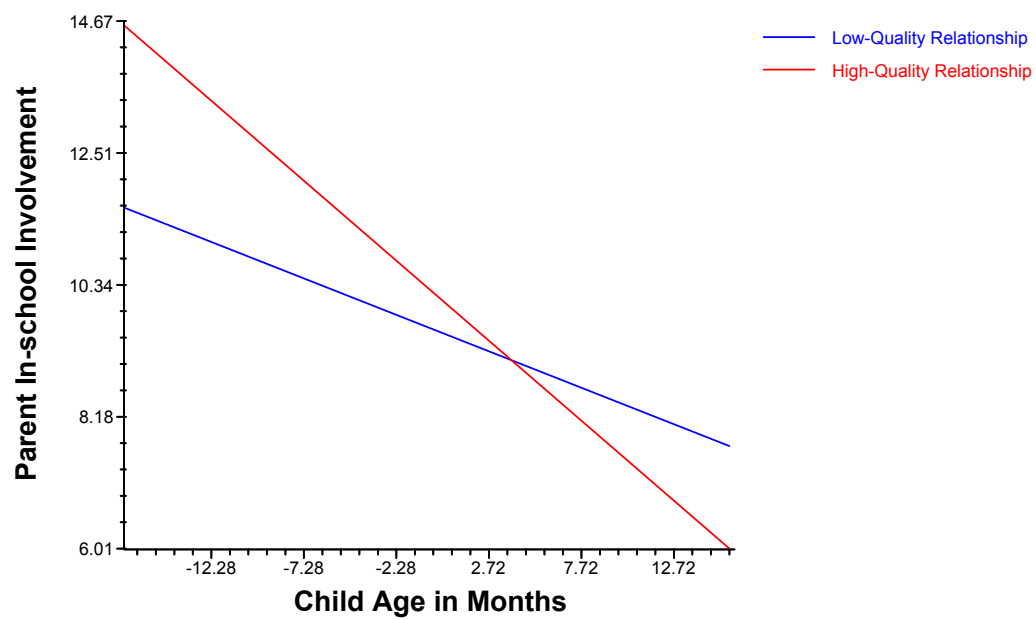


Figure 3.1

School-Family Partnership in Socioeconomically Diverse Preschools Data Collection Timeline

		Fall	Spring
Schools/Teachers	Partnership Survey		X
	Teacher Instruction Questionnaire		X
Families/Parents	Partnership Survey		X
	Parenting Questionnaire		X
	Child Cooperative/Compliant Skills		X
Child Skills	Alphabet	X	X
	Decoding	X	X
	Vocabulary	X	X
	Self-regulation	X	X

Tables

Table 2.1

Descriptive Statistics, Child and Family Sociodemographic Background Factors

Continuous Variables	Mean	SD	Minimum	Maximum
Child age in months in fall	53.06	3.01	36	71
Parent authoritative score	4.24	.58	1.75	5
Parent authoritarian score	2.17	.700	1	5
Categorical Variables	N	Percent		
Child gender				
Female	411	51%		
Child ethnicity				
African-American	326	31.5%		
Asian-American/Pacific Islander	14	1.7%		
European-American	382	46.8%		
Hispanic/Latino	130	16.0%		
Native American	6	0.7%		
Multiracial	21	2.6%		
Other	5	0.6%		
Family structure				
Mother only	406	49.8%		
Mother and father	351	43.0%		
Father only	19	2.3%		
Neither mother nor father	40	4.9%		
Maternal education				
8 th grade or less	25	3.1%		
Some high school	211	25.9%		
High school/GED	316	38.7%		
Vo tech	30	25.2		
Some college/Assoc. degree	203	2.0%		
Bachelor's degree	16	3.7%		
Master's work/Advanced degree	4	0.4%		
Maternal employment				
Full time	318	39.0%		
Part time	125	15.3%		
Seeking work	51	6.3%		
Unemployed	262	32.1%		
Family at/below poverty level				
Yes	508	62.3%		
No	308	37.7%		
Family receiving welfare				
Yes	204	25%		
No	612	75%		

Table 2.2

Descriptive Statistics, Teacher and Classroom Covariates

Continuous Variables	M	SD	Minimum	Maximum
Years of experience in teaching	12.21	9.00	0	36
Years of experience teaching in HS	8.29	8.13	0	35
Class size	13	3.83	3	28
ECERS-language score	4.99	1.27	1	7
Arnett score	72.73	13.45	20	89
Observed teacher-directed instruction – vocabulary	1.32	1.13	0	6
Observed teacher-directed instruction – letter names/sounds	1.30	1.18	0	6
Categorical Variables	N	Percentage		
Teacher education				
Some high school	5	2.1%		
High school/GED	25	10.6%		
Some college/AA	115	48.9%		
Bachelor's degree	52	22.1%		
Some advanced education	14	6.00%		
Advanced degree	16	6.8%		
Doctoral degree	3	1.3%		
Teacher certification				
CDA	120	51.1%		
State teaching certificate	79	33.6%		

Table 2.3

Descriptive Statistics, Center-level Covariates

Categorical Variables	N	Percentage
Percent minority		
Above 40%	76	36.4%
Under 40%	133	63.6%
Region of United States		
Northeast	29	13.9%
Midwest	50	23.9%
South	82	39.2%
West	48	23.0%
Urbanicity		
Rural	60	28.7%
Urban	149	71.3%

Table 2.4

Descriptive Statistics, Child Skills

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>Min.</i>	<i>Max.</i>
<i>Academic Skills</i>				
PPVT, fall HS	68.89	12.18	6	99
PPVT, spring HS	75.33	10.82	38	97
PPVT, spring K	88.47	7.84	56	111
WJ-Letter Word, fall HS	356.79	13.43	316	404
WJ-Letter Word, spring HS	366.02	16.94	327	415
<i>Social skills</i>				
Teacher-rated withdrawn behavior, fall HS	2.24	2.44	0	14
Teacher-rated aggressive behavior, fall HS	1.56	1.82	0	8
Teacher-rated hyperactive behavior, fall HS	1.15	1.41	0	6
Parent-rated Approaches to learning, fall HS	12.33	1.54	6	14
Parent-rated Approaches to learning, spring HS	12.30	1.65	3	14
Parent-rated Approaches to learning, spring K	26.76	5.56	9	39
Teacher-rated Classroom cooperation/compliance, fall HS	15.49	4.57	4	24
Teacher-rated Classroom cooperation/compliance, spring HS	17.56	4.47	0	24
Teacher-rated Classroom cooperation/compliance, spring K	17.27	4.47	0	24

Table 2.5

Descriptive Statistics, Family Involvement and Teacher Outreach

Composite Variable	Example of Relevant Item	Number of Items, Composite Variable	Mean Response, Composite Variable	SD in Response, Composite Variable	Range in Responses, Composite Variable
Center-reported					
Goals for Family Involvement	To what degree did your center emphasize issues of child development?	10	6.0	1.07	2 to 16
Opportunities for Family Involvement at School	Did your center ask parents to volunteer in the classroom?	15	10.90 total practices used	3.05	2 to 21
Incentives for Family Involvement at School	Did you provide families with childcare for events at school?	6	4.65 total practices used	1.00	0 to 5
Kindergarten Transition Practices	Did you provide kindergarten teachers with child records?	7	5.22 total practices used	1.64	0 to 6

Family-reported					
Book reading, Fall	How often do you read books with your child?	7	4.64 (every other day)*	2.36	0 to 6
Book reading, Spring	How often do you read books with your child?	7	4.58 (every other day)*	2.35	0 to 6
Other Home Involvement, Fall	How often do you play sports with your child?	11	15.81 (about every other day for each practice)	3.76	0 to 22
Other Home Involvement, Spring	How often do you play games with your child?	11	25.53 (about every day for each practice)	4.95	6 to 33
Involvement at School	How many times did you volunteer in the classroom?	11	9.90 times/year	6.58	0 to 44
Communication – Conferences	How many conferences with HS personnel did you attend?	1	1.38 times/year	.95	0 to 2
Communication – Meetings	How many times did you meet informally with HS personnel?	1	1.05 times/year	.91	0 to 2

Table 2.6

School-Family Partnership and Decoding Skills during Head Start

Fixed Effect	Coefficient	Standard Error	Approximate T-ratio	df	p value
Intercept	367.89	1.07	342.80	92	0.000
<u>Child-level Variables</u>					
Fall Letter-word	0.74	0.05	16.39	304	0.000
Child age in months	0.46	0.19	2.47	304	0.014
Authoritarian parenting	-2.21	0.84	-2.63	304	0.009
Maternal education	1.43	0.61	2.34	304	0.020
Teaching child letters	1.70	1.02	1.66	304	0.097
<u>Center-level Variables</u>					
Urban	-0.36	2.26	-0.16	92	0.874
Percent minority enrollment	5.82	1.89	3.08	92	0.003
Encouraging parents to read with children	1.93	0.84	2.30	92	0.024
Random Effect	Standard deviation	Variance component	Chi square	df	p value
Level 2 U ₀	5.48	30.04	156.34	92	0.000
Level 1 R	11.92	142.17			

Table 2.7

School-Family Partnership and Receptive Vocabulary during Head Start

Fixed Effect	Coefficient	Standard Error	T-ratio	df	p value
Intercept	73.86	0.51	144.23	109	0.000
Child-level Variables					
Child age in months	0.33	0.06	5.15	433	0.000
Fall vocabulary	0.54	0.04	13.04	433	0.000
Withdrawn status	-0.33	0.14	-2.33	433	0.020
Child minority ethnicity	-4.95	0.93	-5.34	433	0.000
Frequency of reading, spring	0.54	0.04	13.04	433	0.000
Parent in-school volunteering	0.65	0.27	2.42	433	0.016
Welfare status	-1.63	0.73	-2.22	433	0.027
Teacher-child relationship quality	0.09	0.04	2.52	433	0.013
Center-level Variables					
Urban	-0.64	1.04	-0.61	109	0.541
Percent minority enrollment	-5.41	1.08	-5.00	109	0.000
Random Effect	Standard Deviation	Variance Component	Chi-square	df	p value
Level 2 U ₀	4.09	16.72	318.98	109	0.000
Level 1 R	5.68	32.27			

Table 2.8

School-Family Partnership and Approaches to Learning during Head Start

Variable	B	Standard Error	β	T value	Sig.
Intercept	12.12	.16		74.02	.000
<i>Child-level Variables</i>					
Positive approaches to learning, fall	.51	.05	.46	11.14	.000
Authoritative parenting	.36	.18	.13	3.06	.002
Authoritarian parenting	-.24	.09	-.11	-2.67	.008
<i>Class-level Variables</i>					
ECERS classroom quality	.13	.06	.09	2.12	.035
<i>Center-level Variables</i>					
Urban	-.13	.17	-.04	-.79	.429
Percent minority enrollment	.05	.15	.02	.33	.744
Focus on Child development	.15	.07	.10	2.26	.024
Focus on General Support	.15	.06	.18	2.67	.008

$$R^2 = .293$$

Table 2.9

School-Family Partnership and Cooperative/Compliant Social Skills during Head Start

Variable	Coefficient	Standard error	T-ratio	df	p value
Intercept	17.46	0.23	75.30	108	0.000
Child-level Variables					
Child age in months	0.05	0.03	1.67	409	0.095
Female	0.65	0.33	1.96	409	0.050
Fall SSRS Score	0.48	0.06	8.51	409	0.000
Authoritarian parenting	-0.38	0.18	-2.09	409	0.037
Welfare status	-0.87	0.40	-2.16	409	0.031
Parent in-school volunteering	-0.24	0.14	-1.69	409	0.091
Parent meetings with school	0.34	0.19	1.83	409	0.067
Classroom-level Variables					
Teacher-child relationship quality	0.03	0.01	2.40	138	0.018
Center-level Variables					
Urban	-0.27	0.50	- 0.54	108	0.587
Percent minority enrollment	1.12	0.45	2.49	108	0.015
Random Effects	Standard Deviation	Variance Component	Chi- square	df	p value
Level 1, E	3.09	9.56			
Level 2, R ₀	1.23	1.52	25	44.82	0.009
Level 3, U ₀₀	1.03	1.07	103	124.47	0.074

Table 2.10

*School-Family Partnership and Receptive Vocabulary from Head Start through**Kindergarten*

Fixed Effect	Coefficient	Standard Error	T-ratio	df	p value
<i>Initial Status</i>					
Intercept	68.01	0.56	121.95	104	0.000
<i>Child-level Variables</i>					
Age in months	0.90	0.09	9.97	425	0.000
Authoritarian parenting	-1.09	0.43	-2.53	425	0.012
Maternal education	.90	0.29	3.10	425	0.003
Child minority ethnicity	-6.85	1.06	-6.46	425	0.000
Welfare recipient	-1.69	0.79	-2.14	425	0.033
Book reading in fall	0.38	0.13	2.82	425	0.005
<i>Center-level Variables</i>					
Urban	-0.38	0.82	-0.46	104	0.645
Percent minority enrollment	-3.49	1.20	-2.92	104	0.005
<i>Linear Growth Trajectory</i>					
Intercept	3.00	0.71	4.23	105	0.000
<i>Child-level Variables</i>					
Age in months	-0.12	0.04	-3.14	429	0.002
Child minority ethnicity	0.90	0.54	1.67	429	0.095
<i>Center-level Variables</i>					
Percent minority enrollment	1.33	0.55	2.43	105	0.017
<i>Quadratic Growth Trajectory</i>					
Intercept	2.96	0.35	8.45	1130	0.000

Random Effect	Standard Deviation	Variance Component	Chi-square	df	p value
Level 3 U_{00}	3.30	10.86	177.40	103	0.000
Level 3 U_{10}	1.35	1.83	159.30	104	0.001
Level 2 R_0	7.10	50.38	1121.50	310	0.000
Level 2 R_1	1.44	2.07	364.20	314	0.026
Level 1 E	4.55	20.70			

Table 2.11

Final Model, School-Family Partnership and Approaches to Learning during Head Start and Kindergarten

Variable	Coefficient	Standard error	T-ratio	df	p value
Intercept	25.85	0.34	76.50	90	0.000
Child-level Variables					
Fall HS approaches to learning	0.93	0.28	3.31	314	0.001
Spring HS approaches to learning	0.68	0.24	2.86	314	0.005
Book reading at home	0.26	0.11	2.37	314	0.018
Center-level Variables					
Urban	-0.80	0.63	-1.27	90	0.209
Percent minority enrollment	-0.80	0.65	-1.23	90	0.222
Random Effects	Standard Deviation	Variance Component	Chi-square	df	p value
Level 1, E	0.98	0.97	111.67	90	0.060
Level 2, U ₀₀	5.01	25.09			

Table 2.12

School-Family Partnership and Classroom Cooperation/Compliance from Head Start to Kindergarten

Fixed Effect	Coefficient	SE	T-ratio	Approx. df	Sig.
<i>Initial Status</i>					
Intercept	4.53	2.38	1.900	105	0.060
<i>Child-level Variables</i>					
Age in months	0.29	0.05	5.54	448	0.000
Female	1.40	0.27	5.17	448	0.000
Authoritarian parenting	-0.46	0.21	-2.24	448	0.025
<i>Center-level Variables</i>					
Urban	0.23	0.48	0.47	105	0.636
Percent minority enrollment	-0.03	0.46	-0.06	105	0.955
<i>Linear Growth Term</i>					
Intercept	6.03	1.19	5.06	107	0.000
<i>Child-level Variables</i>					
Age in months	-0.06	0.03	-2.45	1106	0.015
Welfare status	-0.68	0.16	-4.26	1106	0.000
<i>Quadratic Growth Term</i>					
Intercept	-1.40	0.31	-4.52	1106	0.000
<i>Random Effects</i>					
	Standard Deviation	Variance Component	Chi- square	df	Sig.
Level 3, U_{00}	3.21	10.33	101	232.27	0.000
Level 3, U_{10}	1.24	1.54	103	193.85	0.000
Level 2, R_0	2.28	5.22	341	784.11	0.000
Level 1, E	3.11	9.67			

Table 2.13

Predictors of Frequency of Parent Reading in Spring of Head Start

Fixed Effect	Coefficient	Error	T-ratio	df	p value
Intercept	4.45	.13	33.91	108	.000
<u>Center-level Variables</u>					
Urban	-.04	.25	-.15	108	.883
Percent minority enrollment	-.50	.24	-2.07	108	.040
Center emphasis on reading	-.21	.12	-1.69	108	.094
<u>Group-Centered Fall Reading</u>					
Intercept	.37	.05	8.15	110	.000
Center emphasis on reading	-.11	.04	-2.47	110	.015
Random Effect	Standard Deviation	Variance Component	Chi-square	df	p value
Level 2 U ₀	.85	.72	81	143.19	.000
Level 1 R	2.03	4.10			

Table 2.14

Predictors of Family In-school Involvement in Head Start

Fixed Effect	Beta	SE	T-ratio	df	p value
Intercept	9.78	0.33	29.20	96	0.000
<u>Child-level Variables</u>					
Age in months	-0.17	0.06	-2.71	440	0.007
Frequency of reading, fall	0.30	0.12	2.39	440	0.017
Home involvement, fall	0.52	0.15	3.52	440	0.001
<u>Classroom-level Variables</u>					
Teacher-child relationship quality	0.04	0.03	1.33	127	0.185
<u>Cross-level Interactions</u>					
Child age *	-0.01	0.00	-2.10	440	0.036
Teacher-child relationship quality					
<u>Center-level Variables</u>					
Urban	-1.55	0.90	-1.72	96	0.088
Percent minority enrollment	0.36	0.73	0.49	96	0.623
Center-provided in-school involvement opportunities	0.28	0.10	2.89	96	0.005
Random Effect	Standard Deviation	Variance	df	X ²	p value
Level-3 U ₀₀	1.71	2.92	96	146.27	0.001
Level-2 R ₀	0.10	0.01	28	26.88	>.500
Level-1 E	5.86	34.28			

Table 3.1

Descriptive Statistics, Child and Family Sociodemographic Background Factors

Continuous Variables	Mean	SD	Minimum	Maximum
Child age in months in fall, preschool	4.11	0.63	2.82	5.54
Parent warm/responsivity/support, preschool	27.81	2.32	16	30
Parent management/discipline, preschool	15.95	2.37	10	20
Categorical Variables	N	Percent		
Child gender				
Female	70	54.5		
Male	62	45.5		
Child ethnicity				
European-American	107	85.6		
Minority or Multiracial	18	14.4		
Maternal education				
High school/GED	5	3.9		
Some college/Assoc. degree	23	18.1		
Bachelor's degree	47	37.0		
Master's work/Advanced degree	52	40.9		
Maternal employment				
Employed (Full or part)	76	57.6		
Unemployed	51	38.6		
Child Prior Preschool Experience				
Preschool				
No	48	40		
Yes	72	60		
Daycare				
No	75	60		
Yes	50	40		
Family care or nanny				
No	111	88.8		
Yes	14	11.2		

Table 3.2

Descriptive Statistics, Teacher and Classroom Covariates

Continuous Variables	M	SD	Min	Max
Years of experience in teaching	6.19	5.65	0	19
Teacher Instruction Questionnaire				
Academic Instruction Score	30.50	6.37	14	42
Warmth/Responsivity/Support	37.09	2.72	31	40
Management/Discipline Score	59.91	5.27	50	68
Categorical Variables	N	Percent		
Teacher education				
Bachelor's degree	15	75%		
Advanced degree	5	25%		

Table 3.3

Descriptive Statistics, Child Skills

A. Literacy Skills

Variable	Mean	SD	Min.	Max.
Alphabet, fall preschool	10.71	7.94	0	26
Alphabet, spring preschool	16.15	7.33	0	26
WJ-Letter Word, fall preschool	339.30	32.77	264	500
WJ-Letter Word, spring preschool	354.09	32.02	264	504
WJ-Sound Awareness, fall preschool	443.45	19.88	420	500
WJ-Sound Awareness, spring preschool	460.38	19.89	420	508
WJ-Picture Vocabulary, fall preschool	470.41	473.96	429	498
WJ- Picture Vocabulary, spring preschool	12.20	12.91	428	510

B. Social Skills

Variable	Mean	SD	Min.	Max.
Head to Toes, fall preschool	8.63	8.32	0	20
Head to Toes, spring preschool	11.61	6.90	0	20
Parent-rated Self-control, spring preschool	14.7	3.00	6	20
Parent-rated Assertiveness, spring preschool	15.52	2.96	4	20
Parent-rated Responsibility, spring preschool	12.13	2.96	5	20
Parent-rated Cooperation/compliance, spring preschool	12.19	2.52	3	18

Table 3.4

Correlations between Preschool Outcomes

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Fall ABC	1												
2. Spring ABC	.82***	1											
3. Fall SA	.63***	.56***	1										
4. Spring SA	.34***	.24***	.39***	1									
5. Fall LW	.82***	.70***	.63***	.28***	1								
6. Spring LW	.71***	.62***	.56***	.34***	.83***	1							
7. Fall PV	.53***	.47***	.55***	.22**	.53***	.51***	1						
8. Spring PV	.52***	.41***	.56***	.27*	.56***	.49***	.63***	1					
9. Fall HTT	.49***	.43***	.62***	.36***	.47***	.45***	.48***	.46***	1				
10. Spring HTT	.40***	.42***	.52***	.30**	.43***	.39***	.41***	.43***	.58***	1			
11. Self-control	.18~	.14	.16~	.20*	.16~	.16~	.17~	.02	.08	.16~	1		
12. Assertiveness	.15~	.18*	.18*	.17~	.15~	.14	.24**	.15	.10	.13	.30***	1	
13. Responsibility	.15	.19*	.18*	.12	.17~	.14	.31***	.13	.20*	.11	.32***	.55***	1
14. Cooperation	.12	.19*	.11	.08	.08	.12	.15	.07	.08	.12	.52***	.40***	.54***

~ $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3.5

Descriptive Statistics, Family Involvement and Teacher Outreach

Composite Variable	Example of Relevant Item	Number of Items Included in Composite Variable	Sum of Responses on Composite Variable	SD in Response on Composite Variable	Range in Responses on Composite Variable
Teacher-reported					
Frequency of outreach to families (home-, school-, and communication-based)	How often did you send home newsletters?	8	22.57	5.22	11 to 32
Family-reported					
Frequency of family involvement at home	How often do you read books with your child?	4	12.73	2.66	6 to 19
Frequency of family involvement at School	How many times did you volunteer in the classroom?	6	15.48	4.88	6 to 30
Frequency of family communication	How frequently did you call the school/teacher?	2	2.40	2.50	0 to 10

Table 3.6

*Correlations among Questionnaire Items**A. Correlations, School-Family Partnership Questionnaire Family Involvement Items*

	1	2	3	4	5	6	7	8	9	10	11
1. Reading											
2. Games	.27**										
3. Writing	.42***	.34***									
4. Library	.37***	.21*	.13								
5. Social	.32***	.09	.14	-.023							
6. Visit	-.06	.05	-.01	-.19*	.22*						
7. Events	.13	.02	.03	.03	.28**	.05					
8. Volunteer	.15~	.08	.19*	-.07	.23**	.23**	.24**				
9. Donate	.19*	.09	.16~	.09	.42***	.16~	.49***	.33***			
10. Parent Organization	.02	.07	.16~	.01	.15~	.15~	.27**	.17~	.40***		
11. Call	.05	.04	.21*	.07	-.01	.20*	.09	.28**	.13	.12	
12. Write	.08	.18*	.15~	.11	-.12	.03	.10	.18*	.24**	.14	.48***

B. Correlations, School-Family Partnership Questionnaire Teacher Outreach Items

	1	2	3	4	5	6	7
1. Newsletter							
2. Activity	-.13						
3. Donate	-.16	.35~					
4. Party	.27	.02	.36*				
5. Volunteer	.42*	.43*	.22	.28			
6. Social	.15	.20	.21	.33~	.29		
7. Call	-.09	.17	-.11	-.19	.02	.12	
8. Write	-.06	.05	.11	.04	.03	.38*	.55**

Table 3.7

Principal Components Analysis of Family Involvement on School-Family Partnership Questionnaire

Survey Items	Factor 1	Factor 2
In-School Involvement		
Attend events or performances	.69	-.01
Donate materials	.57	.17
Volunteer	.68	.18
Work with parent/school organizations	.51	.25
Attend social activities	.71	-.28
Visit the school/classroom informally	.63	.03
Communication		
Call the school/teacher	.11	.83
Write note/email to the school/teacher	.040	.83

Table 3.8

Correlations between Dimensions of Teacher Outreach and Family Involvement

	1	2	3	4
1. Teacher Outreach	1			
2. Family Involvement at Home	.16 ~	1		
3. Family Involvement at School	.10	.14	1	
4. Family Involvement through Communication	-.08	.19*	.23**	1

~ p < .10, * p < .05, ** p < .01

Table 3.9

*Content/Skill Focus of Family Involvement and Teacher Outreach**A. Content of Family Involvement Practices*

	Call	Write	Conference	Visit
Academic	4 (14.8%)	5 (25%)	5 (10.2%)	3 (6.4%)
Social: Self-Control	4 (14.8%)	2 (10%)	1 (2.0%)	5 (10.6%)
Social: Interpersonal Competence	3 (11.1%)	0	3 (6.1%)	9 (19.1%)
Both Academic and Social Skills	12 (44.4%)	5 (25%)	37 (75.5%)	22 (46.8%)
Policy/Scheduling	3 (11.1%)	8 (40%)	0	5 (9.6%)
Other Issues	0	0	0	1 (2.1%)
All of the above	1 (3.7%)	0	3 (6.1%)	2 (4.3%)

B. Content of Teacher Outreach Practices

	Newsletter	Activity	Call	Write	Conference
Academic	4 (22.2%)	9 (50%)	0	0	2 (10%)
Social	0	0	4 (22.2%)	4 (21.1%)	0
Both Academic and Social	9 (50%)	9 (50%)	14 (77.8%)	12 (63.2%)	18 (90%)
Policy/Scheduling	4 (22.2%)	0	0	1 (5.3%)	0
Other Issues	1 (5.6%)	0	0	2 (10.5%)	0

Table 3.10

Analytic Strategies for Models

Outcome	Analytic Strategy
ABC	2-level HLM level 1 = child and family variables level 2 = preschool teacher variables
Sound Awareness	OLS
Decoding	OLS
Expressive Vocabulary	2-Level HLM level 1 = child and family variables level 2 = preschool teacher variables
Head to Toes	2-level HLM level 1 = child and family variables level 2 = preschool teacher variables
Self-Control	2-level HLM level 1 = child and family variables level 2 = preschool teacher variables
Assertiveness	OLS
Responsibility	OLS
Cooperation	OLS
Family At-Home Involvement	OLS
Family In-School Involvement	2-level HLM level 1 = family variables level 2 = preschool teacher variables
Family Communication with School	2-level HLM level 1 = family variables level 2 = preschool teacher variables

Table 3.11

Final Model, Alphabet Skills during Preschool

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	16.36	0.37	44.17	29	0.000
<u>Child-level Variables</u>					
Maternal employment	1.34	0.77	1.75	116	0.083
Home involvement	0.44	0.36	1.25	116	0.216
School involvement	-0.43	0.41	-1.05	116	0.294
Communication	0.30	0.22	1.40	116	0.163
Management/discipline	-0.36	0.16	-2.20	116	0.030
Fall ABC	0.77	0.03	23.65	116	0.000
Interaction: employment by communication	1.61	0.55	2.92	116	0.005
<u>Teacher-level Variables</u>					
Teacher Experience	0.12	0.06	2.08	29	0.046
Teacher Outreach	0.48	0.59	0.81	29	0.426
Random Effect	Standard Deviation	Variance Component	Chi square	df	Sig.
Level 2 U ₀	0.99	0.97	32.89	29	0.282
Level 1 R	3.81	14.54			

Table 3.12

Final Model, Sound Awareness Skills in Preschool

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	460.46	1.57	292.95	124	0.000
Home involvement	-5.13	2.48	-2.07	124	0.041
School involvement	-2.08	2.02	-1.03	124	0.307
Communication	0.49	1.33	0.37	124	0.715
Fall sound awareness	0.38	0.08	4.80	124	0.000
Teacher experience	-0.42	0.37	-1.18	124	0.239
Teacher outreach	3.95	2.60	1.52	124	0.131

 $R^2 = 0.21$

Table 3.13

Final Model, Letter-Word Skills during Preschool

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	354.54	1.60	221.95	123	0.000
Maternal schooling	1.60	0.88	1.82	123	0.071
Home involvement	0.66	2.56	0.26	123	0.798
School involvement	1.32	2.06	0.64	123	0.522
Communication	1.15	1.35	0.85	123	0.395
Fall letter-word	0.75	0.05	14.68	123	0.000
Teacher experience	-0.11	0.37	-0.30	123	0.767
Teacher outreach	0.77	2.65	0.29	123	0.771
$R^2 = 0.72$					

Table 3.14

Final Model, Expressive Vocabulary during Preschool

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	474.19	0.88	541.08	29	0.000
Child-level Variables					
Home involvement	-3.08	1.52	-2.02	122	0.045
School involvement	-1.44	0.81	-1.78	122	0.077
Communication	1.49	0.48	3.11	122	0.003
Fall vocabulary	0.61	0.05	13.14	122	0.000
Maternal employment	-4.62	1.75	-2.64	122	0.010
Preschool experience	5.30	1.66	3.19	122	0.002
Teacher-level Variables					
Teacher experience	-0.11	0.24	-0.45	29	0.659
Teacher outreach	1.25	1.43	0.87	29	0.391
Random Effect	Standard Deviation	Variance Component	Chi square	df	Sig.
Level 2 U ₀	2.87	8.22	35.98	29	0.174
Level 1 R	8.60	73.96			

Table 3.15

Final Model, Self-Regulation (Head to Toes Task) during Preschool

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	11.62	0.29	40.47	28	0.000
Child-level Variables					
Child age	3.51	0.77	4.55	122	0.000
Home involvement	0.85	0.60	1.42	122	0.157
School involvement	0.81	0.46	1.76	122	0.080
Communication	-0.30	0.34	-0.89	122	0.374
Fall Head to Toes skill	0.34	0.06	5.32	122	0.000
Teacher-level Variables					
Teacher experience	0.32	0.07	4.93	28	0.000
Teacher management/ discipline	0.18	0.06	3.06	28	0.005
Teacher outreach	-1.15	0.36	-3.18	28	0.004
Random Effect	Standard Deviation	Variance Component	Chi square	df	Sig.
Level 2 U ₀	0.09	0.01	14.43	28	>.500
Level 1 R	5.01	25.11			

Table 3.16

Final Model, Self-Regulation (Parent-rated SSRS) during Preschool

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	14.82	0.24	61.17	28	0.000
Child-level Variables					
Maternal schooling	0.37	0.16	2.30	122	0.023
Preschool experience	1.45	0.51	2.86	122	0.005
Home involvement	0.83	0.39	2.12	122	0.036
School involvement	0.01	0.28	0.02	122	0.984
Communication	-0.05	0.18	-0.28	122	0.777
Teacher-level Variables					
Teacher experience	0.02	0.05	0.49	28	0.630
Teacher academic instruction	0.09	0.04	2.02	28	0.053
Teacher outreach	-0.84	0.44	-1.90	28	0.067
Random Effect	Standard Deviation	Variance Component	Chi square	df	Sig.
Level 2 U ₀	0.92	0.84	43.19	28	0.033
Level 1 R	2.59	6.71			

Table 3.17

Final Model, Assertiveness at the End of Preschool

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	15.51	0.24	65.36	124	0.000
Home management/ discipline	-0.21	0.10	-2.11	124	0.037
Home involvement	0.19	0.37	0.514	124	0.608
School involvement	1.22	0.31	4.001	124	0.000
Communication	0.16	0.20	0.792	124	0.430
Teacher experience	-0.06	0.05	-1.163	124	0.248
Teacher outreach	0.15	0.39	0.391	124	0.696

 $R^2 = 0.18$

Table 3.18

Final Model, Responsibility at the End of Preschool

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	12.10	0.23	52.72	123	0.000
Child age	0.83	0.37	2.22	123	0.028
Maternal schooling	0.27	0.13	2.10	123	0.037
Home involvement	0.96	0.37	2.62	123	0.010
School involvement	0.37	0.30	1.24	123	0.219
Communication	0.09	0.20	0.48	123	0.634
Teacher experience	-0.17	0.05	-3.27	123	0.002
Teacher outreach	0.47	0.38	1.24	123	0.218

 $R^2 = 0.23$

Table 3.19

Final Model, Cooperation at the End of Preschool

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	12.23	0.20	62.68	124	0.000
Maternal schooling	0.28	0.11	2.63	124	0.010
Home involvement	0.88	0.31	2.84	124	0.006
School involvement	0.49	0.25	1.97	124	0.051
Communication	0.29	0.16	1.74	124	0.083
Teacher experience	-0.01	0.04	-0.23	124	0.820
Teacher outreach	0.01	0.32	0.04	124	0.969

 $R^2 = 0.19$

Table 3.20

Final Model, Predictors of Family At-Home Involvement

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	3.19	0.06	56.25	127	0.000
Maternal employment	-0.22	0.12	-1.90	127	0.060
Teacher experience	-0.01	0.01	-0.89	127	0.378
Teacher outreach	0.13	0.09	1.38	127	0.169

 $R^2 = 0.05$

Table 3.21

Final Model, Predictors of In-School Involvement

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	2.60	0.10	26.88	29	0.000
<u>Child-level Variables</u>					
Gender	0.23	0.12	1.85	127	0.066
<u>Teacher-level Variables</u>					
Teacher Experience	-0.01	0.02	-0.62	29	0.539
Teacher Outreach	0.27	0.13	2.07	29	0.047
Random Effect	Standard Deviation	Variance Component	Chi square	df	Sig.
Level 2 U_0	0.40	0.16	64.49	29	0.000
Level 1 R	0.72	0.52			

Table 3.22

Final Model, Predictors of Family Involvement through Personal Communication

Fixed Effect	Coefficient	Standard Error	Approx. T Ratio	df	Sig.
Intercept	1.28	0.15	8.78	29	0.000
Child-level Variables					
Minority ethnicity	0.73	0.21	3.42	126	0.001
Warmth/responsivity	0.08	0.04	2.06	126	0.042
Teacher-level Variables					
Teacher experience	0.04	0.03	1.24	29	0.226
Teacher outreach	-0.03	0.19	-0.15	29	0.879
Random Effect	Standard Deviation	Variance Component	Chi square	df	Sig.
Level 2 U ₀	0.62	0.38	66.76	29	0.000
Level 1 R	1.05	1.11			

Appendices

Appendix 1

School-Family Partnership Questionnaire, Family Version

The purpose of this survey is to learn more about how parents and schools work together to educate children. This survey (both sides) should be completed by one of the child's parents or guardians.

During the past school year, how many times did you:

1. Call your child's teacher about your child's development or learning?

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that the content of these interactions was: (please select one)

- ☐ Mostly about individual social development (e.g., self-control)
- ☐ Mostly about academic development (e.g., alphabet, numbers)
- ☐ Mostly about social relationships (e.g., making friends, dealing with peers)
- ☐ About both social and academic development equally
- ☐ About schedules, policies, or other administrative details
- ☐ About something else: _____

2. Write a note/email to your child's teacher about your child's development or learning?

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that the content of these messages was: (please select one)

- ☐ Mostly about individual social development (e.g., self-control)
- ☐ Mostly about academic development (e.g., alphabet, numbers)
- ☐ Mostly about social relationships (e.g., making friends, dealing with peers)
- ☐ About both social and academic development equally
- ☐ About schedules, policies, or other administrative details
- ☐ About something else: _____

3. Visit your child's classroom to talk to the teacher informally?

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that the content of these messages was: (please select one)

- ☐ Mostly about individual social development (e.g., self-control)
- ☐ Mostly about academic development (e.g., alphabet, numbers)
- ☐ Mostly about social relationships (e.g., making friends, dealing with peers)
- ☐ About both social and academic development equally
- ☐ About schedules, policies, or other administrative details

_____ About something else: _____

4. Attend a parent-teacher conference?

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that you discussed: (please select one)

- _____ Mostly about individual social development (e.g., self-control)
 _____ Mostly about academic development (e.g., alphabet, numbers)
 _____ Mostly about social relationships (e.g., making friends, dealing with peers)
 _____ About both social and academic development equally
 _____ About schedules, policies, or other administrative details
 _____ About something else: _____

5. Visit your child's school for special events featuring children (i.e., a party or performance)?

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

Please provide at least one typical example (e.g., briefly describe):

6. Attend a meeting of a parent organization designed to help support the school? (i.e., a policy or fundraising committee)

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

Please provide at least one typical example (e.g., briefly describe):

7. Attend a training, workshop, or other informational meeting to help you support your child's learning and development?

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that the content of these meetings was: (please select one)

- _____ Mostly about individual social development (e.g., self-control)
 _____ Mostly about academic development (e.g., alphabet, numbers)
 _____ Mostly about social relationships (e.g., making friends, dealing with peers)
 _____ About both social and academic development equally
 _____ About something else: _____

8. Socialize with other parents from your child's school (i.e., talk or meet with parents)?

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

9. Contribute materials to the school (i.e., books or other supplies)?

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

10. Volunteer your time in the school (i.e., in the classroom or on a fieldtrip)?

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

11. Read with your child at home?

More than once a day Every day Every other day Once per week Rarely

12. Write with your child at home?

More than once a day Every day Every other day Once per week Rarely

13. Take your child to the library?

More than once a week Every Day Every other day Once a month Rarely

14. Play games related to learning at home with your child?

More than once a day Every day Every other day Once per week Rarely

Please provide at least one typical example (e.g., briefly describe):

Thank you for your time!

Appendix 2

School-Family Partnership Questionnaire, Teacher Version

This survey asks about how families and schools work together to educate children. On the FRONT and BACK of these pages, please provide some information about how you connected with students' families during this past school year. As always, we are very grateful for your help and insight.

Part I: Overall, during the past school year, how often did you:**1. Call the average family about their child's development or achievement**

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that the content of these interactions was: (please select one)

- ☐ Mostly about social development
☐ Mostly about academic development
☐ About both social and academic development equally
☐ About schedules, policies, or other administrative details:
☐ About something else: _____

2. Write a personal note/email to a family about their child's development or achievement

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that the content of these interactions was: (please select one)

- ☐ Mostly about social development
☐ Mostly about academic development
☐ About both social and academic development equally
☐ About schedules, policies, or other administrative details:
☐ About something else: _____

3. Send families a newsletter updating them on your classroom or school

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that the content of the newsletter was: (please select one)

- ☐ Mostly about social development
☐ Mostly about academic development
☐ About both social and academic development equally
☐ About schedules, policies, or other administrative details:
☐ About something else: _____

Please provide at least one typical example (e.g., briefly describe or attach sample, etc):

4. Send families guidelines/activities to help them support child learning (including in newsletter)

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that the content of the conference was: (please select one)

- _____ Mostly about social development
 _____ Mostly about academic development
 _____ About both social and academic development equally
 _____ About schedules, policies, or other administrative details:
 _____ About something else: _____

Please provide at least one typical example (e.g., briefly describe or attach sample, etc.):

5. Invite families to parent-teacher conferences

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that the content of the conference was: (please select one)

- _____ Mostly about social development
 _____ Mostly about academic development
 _____ About both social and academic development equally
 _____ About schedules, policies, or other administrative details:
 _____ About something else: _____

6. Invite families to large-group learning activities (i.e., workshops, trainings)

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

On average, would you say that the content of these large-group events was: (please select one)

- _____ Mostly about social development
 _____ Mostly about academic development
 _____ About both social and academic development equally
 _____ About schedules, policies, or other administrative details:
 _____ About something else: _____

Please provide at least one typical example (e.g., briefly describe or attach sample, etc):

7. Invite families to special events, such as classroom parties or performances

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

Please provide at least one typical example (e.g., briefly describe or attach sample, etc):

8. Invite families to large-group social activities (i.e. dinners, picnics)

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

Please provide at least one typical example (e.g., briefly describe or attach sample, etc):

9. Ask families to donate materials

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

10. Ask families to volunteer their time (i.e., in the classroom or on fieldtrips)

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

11. Conduct home visits

Daily Weekly Bi-weekly Monthly 2-3 times /year 1 time/year Never

If you conducted home visits, would you say that, on average, the focus of the visit was:
(select one)

- ☐ Mostly about social development
- ☐ Mostly about academic development
- ☐ About both equally
- ☐ About schedules, policies, or other administrative details:
- ☐ About something else: _____

12. Please indicate any other family-outreach practices that you used, and their frequency:

Daily	Weekly	Bi-weekly	Monthly	2-3 times /year	1 time/year	Never
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Daily	Weekly	Bi-weekly	Monthly	2-3 times /year	1 time/year	Never
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Thank you again....

Your help and expertise are invaluable to this study
and to the lives and the children and families with whom you work!

Appendix 3

Study 1 Model Equations

Model 2.1

School-Family Partnership and Decoding Skills during Head Start

Level-1 Model

$$Y = B0 + B1*(Age) + B2*(Authoritarian parenting) + B3*(Maternal education) + B4*(Fall Letter-Word) + B5*(Fall at-home word instruction) + R$$

Level-2 Model

$$B0 = G00 + G01*(Urban) + G02*(Percent minority enrollment) + G03*(Center focus on reading) + U0$$

$$B1 = G10$$

$$B2 = G20$$

$$B3 = G30$$

$$B4 = G40$$

$$B5 = G50$$

Model 2.2

School-Family Partnership and Receptive Vocabulary during Head Start

Level-1 Model

$$Y = B0 + B1*(Age) + B2*(Fall Picture Vocabulary) + B3*(Fall withdrawn behavior) + B4*(Child minority ethnicity) + B5*(Welfare status) + B6*(Volunteering) + B7*(Teacher-child relationship quality) + B8*(Spring reading frequency) + R$$

Level-2 Model

$$B0 = G00 + G01*(Urban) + G02*(Percent minority enrollment) + U0$$

$$B1 = G10$$

$$B2 = G20$$

$$B3 = G30$$

$$B4 = G40$$

$$B5 = G50$$

$$B6 = G60$$

$$B7 = G70$$

$$B8 = G80$$

Model 2.3

School-Family Partnership and Approaches to Learning during Head Start

Level-1 Model

$$Y = P0 + P1*(\text{Fall approaches to learning}) + P2*(\text{Authoritarian parenting}) + P3*(\text{Authoritative parenting}) + E$$

Level-2 Model

$$P0 = B00 + B01*(\text{Classroom quality}) + R0$$

$$P1 = B10$$

$$P2 = B20$$

$$P3 = B30$$

Level-3 Model

$$B00 = G000 + G001(\text{Urban}) + G002(\text{Percent minority enrollment}) + G003(\text{Center focus on child development}) + G004(\text{Center focus on book reading}) + U00$$

$$B01 = G010$$

$$B10 = G100$$

$$B20 = G200$$

$$B30 = G300$$

Model 2.4

School-Family Partnership and Cooperative/Compliant Social Skills during Head Start

Level-1 Model

$$Y = P0 + P1*(Age) + P2*(Female) + P3*(Fall SSRS skills) + P4*(Authoritarian parenting) + P5*(Welfare status) + P6*(Volunteering) + P7*(Meetings) + E$$

Level-2 Model

$$P0 = B00 + B01*(Teacher-child relationship quality) + R0$$

$$P1 = B10$$

$$P2 = B20$$

$$P3 = B30$$

$$P4 = B40$$

$$P5 = B50$$

$$P6 = B60$$

$$P7 = B70$$

Level-3 Model

$$B00 = G000 + G001(Urban) + G002(Percent minority enrollment) + U00$$

$$B01 = G010$$

$$B10 = G100$$

$$B20 = G200$$

$$B30 = G300$$

$$B40 = G400$$

$$B50 = G500$$

$$B60 = G600$$

$$B70 = G700$$

Model 2.5

School-Family Partnership and Receptive Vocabulary from Head Start through Kindergarten

Level-1 Model

$$Y = P0 + P1*(\text{Linear growth}) + P2*(\text{Quadratic growth}) + E$$

Level-2 Model

$$\begin{aligned} P0 &= B00 + B01*(\text{Age}) + B02*(\text{Fall book reading}) + B03*(\text{Authoritarian parenting}) + B04*(\text{Maternal education}) + B05*(\text{Minority ethnicity}) + B06*(\text{Welfare status}) + R0 \\ P1 &= B10 + B11*(\text{Age}) + B12*(\text{Minority ethnicity}) + R1 \\ P2 &= B20 \end{aligned}$$

Level-3 Model

$$\begin{aligned} B00 &= G000 + G001(\text{Urban}) + G002(\text{Percent minority enrollment}) + U00 \\ B01 &= G010 \\ B02 &= G020 \\ B03 &= G030 \\ B04 &= G040 \\ B05 &= G050 \\ B06 &= G060 \\ B10 &= G100 + G101(\text{Percent minority enrollment}) + U10 \\ B11 &= G110 \\ B12 &= G120 \\ B20 &= G200 \end{aligned}$$

Model 2.6

Final Model, School-Family Partnership and Approaches to Learning during Head Start and Kindergarten

Level-1 Model

$$Y = B0 + B1*(\text{Fall approaches to learning}) + B2*(\text{Fall book reading}) + B3*(\text{Spring approaches to learning}) + R$$

Level-2 Model

$$\begin{aligned} B0 &= G00 + G01*(\text{Urban}) + G02*(\text{Percent minority enrollment}) + U0 \\ B1 &= G10 \\ B2 &= G20 \\ B3 &= G30 \end{aligned}$$

Model 2.7

School-Family Partnership and Classroom Cooperation/Compliance from Head Start to Kindergarten

Level-1 Model

$$Y = P0 + P1*(\text{Linear growth}) + P2*(\text{Quadratic growth}) + E$$

Level-2 Model

$$P0 = B00 + B01*(\text{Age}) + B02*(\text{Female}) + B03*(\text{Authoritarian parenting}) + R0$$

$$P1 = B10 + B11*(\text{Age}) + B12*(\text{Welfare status})$$

$$P2 = B20$$

Level-3 Model

$$B00 = G000 + G001(\text{Urban}) + G002(\text{Percent minority enrollment}) + U00$$

$$B01 = G010$$

$$B02 = G020$$

$$B03 = G030$$

$$B10 = G100 + U10$$

$$B11 = G110$$

$$B12 = G120$$

$$B20 = G200$$

Model 2.8

Predictors of Frequency of Parent Reading in Spring of Head Start

Level-1 Model

$$Y = B0 + B1*(\text{Fall book reading}) + R$$

Level-2 Model

$$B0 = G00 + G01*(\text{Urban}) + G02*(\text{Percent minority enrollment}) + G03*(\text{Center focus on reading}) + U0$$

$$B1 = G10 + G11*(\text{Center focus on reading}) + U1$$

Model 2.9

Predictors of Family In-school Involvement in Head Start

Level-1 Model

$$Y = P0 + P1*(\text{Age, group centered}) + P2*(\text{Fall book reading}) + P3*(\text{Fall home involvement}) + E$$

Level-2 Model

$$P0 = B00 + B01*(\text{Teacher-child relationship quality}) + R0$$

$$P1 = B10 + B11*(\text{Teacher-child relationship quality})$$

$$P2 = B20$$

$$P3 = B30$$

Level-3 Model

$$B00 = G000 + G001(\text{Urban}) + G002(\text{Percent minority enrollment}) + G003(\text{Center opportunities for parent in-school involvement}) + U00$$

$$B01 = G010$$

$$B10 = G100$$

$$B11 = G110$$

$$B20 = G200$$

$$B30 = G300$$

Appendix 4

Study 2 Model Equations

Model 3.1

Final Model, Alphabet Skills during Preschool

Level-1 Model

$$Y = B0 + B1*(\text{Family communication}) + B2*(\text{Family home involvement}) + B3*(\text{Family in-school involvement}) + B4*(\text{Communication by employment}) + B5*(\text{Fall ABC}) + B6*(\text{Maternal employment}) + B7*(\text{Family management/discipline}) + R$$

Level-2 Model

$$B0 = G00 + G01*(\text{Teacher experience}) + G02*(\text{Teacher outreach}) + U0$$

$$B1 = G10$$

$$B2 = G20$$

$$B3 = G30$$

$$B4 = G40$$

$$B5 = G50$$

$$B6 = G60$$

$$B7 = G70$$

Model 3.2

Final Model, Expressive Vocabulary during Preschool

Level-1 Model

$$Y = B0 + B1*(\text{Family communication}) + B2*(\text{Family home involvement}) + B3*(\text{Family in-school involvement}) + B4*(\text{Fall vocabulary}) + B5*(\text{Maternal employment}) + B6*(\text{Preschool experience}) + R$$

Level-2 Model

$$B0 = G00 + G01*(\text{Teacher experience}) + G02*(\text{Teacher outreach}) + U0$$

$$B1 = G10$$

$$B2 = G20$$

$$B3 = G30$$

$$B4 = G40$$

$$B5 = G50$$

$$B6 = G60$$

Model 3.3

Final Model, Self-Regulation (Head to Toes Task) during Preschool

Level-1 Model

$$Y = B0 + B1*(Age) + B2*(Family communication) + B3*(Family home involvement) + B4*(Family in-school involvement) + B5*(Fall Head to Toes) + R$$

Level-2 Model

$$B0 = G00 + G01*(Management/discipline) + G02*(Teacher experience) + G03*(Teacher outreach) + U0$$

$$B1 = G10$$

$$B2 = G20$$

$$B3 = G30$$

$$B4 = G40$$

$$B5 = G50$$

Model 3.4

Final Model, Self-Regulation (Parent-rated SSRS) during Preschool

Level-1 Model

$$Y = B0 + B1*(Family communication) + B2*(Family home involvement) + B3*(Family in-school involvement) + B4*(Maternal schooling) + B5*(Preschool experience) + R$$

Level-2 Model

$$B0 = G00 + G01*(Academic instruction) + G02*(Teacher experience) + G03*(Teacher outreach) + U0$$

$$B1 = G10$$

$$B2 = G20$$

$$B3 = G30$$

$$B4 = G40$$

$$B5 = G50$$

Model 3.5

Final Model, Predictors of In-School Involvement

Level-1 Model

$$Y = B0 + B1*(Gender) + R$$

Level-2 Model

$$B0 = G00 + G01*(Teacher\ experience) + G02*(Teacher\ outreach) + U0$$

$$B1 = G10$$

Model 3.6

Final Model, Predictors of Family Involvement through Personal Communication

Level-1 Model

$$Y = B0 + B1*(Minority\ ethnicity) + R$$

Level-2 Model

$$B0 = G00 + G01*(Teacher\ experience) + G02*(Teacher\ outreach) + U0$$

$$B1 = G10$$

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