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Family Involvement and Educator Outreach in Head Start: Nature, Extent, and Contributions to Early Literacy Skills

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# FAMILY INVOLVEMENT AND EDUCATOR OUTREACH IN HEAD START

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## *Nature, Extent, and Contributions to Early Literacy Skills*

### ABSTRACT

The Head Start program endeavors to provide preschoolers with high-quality learning opportunities, in part through fostering family involvement. This exploratory study addressed the paucity of empirical research regarding the nature of educator outreach and family involvement in Head Start and their contributions to children's development of the academic and social foundations of literacy. Participants included 3,100 children and families enrolled in the Head Start Family and Child Experiences Survey (FACES) study, their classroom teachers ( $n = 286$ ), and their center directors ( $n = 222$ ). Findings revealed that families regularly engaged in the learning and schooling of their children and that Head Start educators regularly reached out to families. Family involvement and educator outreach were selectively associated with children's decoding, vocabulary, and positive approaches to learning. This study clarifies how families and teachers bridge the home-school gap in Head Start preschool programs and thus contribute to children's early literacy skills.

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**A** MERICA'S achievement gap begins early, as disparities in school readiness skills along socioeconomic lines are apparent at the very start of kindergarten (Aikens & Barbarin, 2008; Alexander, Entwisle, & Horsey, 1997; Arnold & Doctoroff, 2003; Lee & Burkam, 2002). The Head Start program represents the nation's largest and longest-running compensatory initiative to promote critically important early academic and learning-related social skills among preschool children in poverty (Department of Health and Human Services [DHHS], 2006; Zigler & Muenchow, 1994; Zigler & Valentine, 1979). Head Start is shaped by Bronfenbrenner's (2005) ideas about the central roles that both teachers and families play in child development; as such, a cornerstone of the program is outreach to families to encourage their involvement in children's learning and schooling (McWayne, Campos, & Owsianik, 2008; Pizzo & Tufankjian, 2004; Weiss, Dearing, Mayer, Kreider, & McCartney, 2005; Zigler & Valentine, 1979). Yet, surprisingly few empirical studies have examined to what extent and how educator outreach and family involvement in Head Start actually relate to positive outcomes for children, including the core skill of literacy. Instead, program recommendations to staff and families tend to be quite imprecise. Research that sheds light on which practices are linked to which aspects of learning would help educators optimize the use of staff time and other program resources to the children's benefit. For Head Start preschoolers who face high risks for later academic difficulty, any missed opportunity to enhance early learning carries a heavy price.

To this end, the present study employs the large, nationally representative sample of Head Start families, children, and educators in the Family and Child Experiences Survey (FACES) dataset to examine the nature and extent of family involvement and educator outreach during Head Start and the unique contributions of these practices to preschoolers' literacy development. Ultimately, by isolating which educator outreach or family involvement practices contribute to the development of particular preschool literacy-related skills, we will be able to offer more precise, strategic guidance for Head Start teachers and families, and thereby further advance early literacy among preschoolers in the Head Start program.

### **Promoting the Academic and Social Foundations of Literacy**

As early as preschool, all young children can begin to develop foundational early literacy skills (Alexander et al., 1997; Entwisle, Alexander, & Olson, 2005; McClelland, Acock, & Morrison, 2006). Preschoolers can learn to recognize the letters of the alphabet and detect the sounds in words that will later help them to decode print, while also building the vocabulary skills that will ultimately help them to make sense of what they read (Bowman, Donovan, & Burns, 2001; National Early Literacy Panel, 2009). At the same time, children can develop positive approaches to learning (enthusiasm for and engagement in studying new things), which will help them attend to instruction on decoding and meaning-making skills (Clements, Reynolds, & Hickey, 2004; Fantuzzo et al., 2007; McClelland et al., 2006; Raver & Zigler, 1997). Early interventions to promote these skills, including Head Start, can prepare children to begin kindergarten ready to learn to read and have lasting positive effects on their academic achievement (Lee, 2005, 2008; Zigler & Muenchow, 1994).

## Family Involvement and Educator Outreach: Resources for Early Learning

Families are children's first teachers (Morrison & Cooney, 2002), and there is ample theoretical (Bronfenbrenner, 2005) and empirical evidence (Downer & Mendez, 2005; Epstein, 2001; Fantuzzo, Tighe, & Childes, 2000; Schulting, Malone, & Dodge, 2005) that children benefit when families remain involved in children's learning after school entry. The Head Start program aims to build connections between educators and families in order to optimize children's competence in decoding, vocabulary, and positive approaches to learning, among other skills (McWayne et al., 2008; Zigler & Valentine, 1979).

Such connections could take many forms, and indeed, numerous models of school-family connection or partnership (both in early childhood and beyond) have been proposed (see Greenwood & Hickman, 1991; Hester, 1989; Swap, 1993). Models differ from one another in the roles, particularly in the control or authority assigned to parents and teachers. For example, Swap (1993) noted that some models propose power-sharing partnerships, while other models suggest that teachers should take a more directive stance, guiding families to align their home activities with the foci of the school curriculum. As different schools—or even different parents and teachers within the same school—could build different kinds of relationships, the current study uses the terms *educator outreach* and *family involvement* to avoid assumptions about the nature of power sharing or control.

In addition, models differ in their assertions about what families and teachers should do, independently or together, to support children's learning. The common elements of most of these models are reflected in the Epstein (1995, 2001) typology, arguably the best researched conceptualization of school-family connection and the framework that guides the current study. Epstein's model describes six specific ways in which educators can connect with families, clustered along three distinct dimensions. These types of involvement include *home-oriented* practices, such as (1) supporting family involvement in children's learning at home and (2) strengthening effective parenting and family well-being, in part through (3) providing connections to community resources (e.g., libraries, health clinics); *school-oriented* actions such as recruiting families to (4) volunteer at the school and/or (5) make decisions about school governance; and *communication-oriented* strategies that bridge the home-school gap, such as (6) talking directly with families. All of these practices potentially contribute to children's learning by providing effective instructional experiences (e.g., alphabet worksheets, rhyming games, casual conversations), whether in the home or the school (Bransford, Brown, & Cocking, 2000). This skill promotion can be direct (e.g., families read a book with children) or indirect (e.g., teachers invite families to the local library to borrow books, which they later read with children).

The Epstein model (2001) has powerfully influenced the family-involvement-related mandates in the No Child Left Behind Act of 2001 and the Improving Head Start for School Readiness Act of 2007. Both laws aim to improve the quality of education that children receive and assert that educators must encourage family involvement along each of the three dimensions Epstein identified. However, Epstein's framework is intentionally broad, designed to suit a variety of grades and contexts; as such, it is beyond the scope of Epstein's model to specify which outreach or involvement practices might be effective in promoting particular skills (e.g., de-

coding, vocabulary, approaches to learning) or precisely how, and how often, these practices should be employed. Consequently, the language in both laws is quite vague. For example, the Improving Head Start Act mandates that centers help parents become “full partners in the education of their children” but does not operationalize this goal or offer specific guidance regarding its achievement. Thus, when a Head Start parent approaches a teacher for ideas about shoring up his daughter’s letter recognition or building her son’s enthusiasm about sharing new books together, the teacher has little guidance from either the program’s mandates or—critically—the research literature regarding how to help the family support this learning goal. At present, the early childhood field needs a comprehensive but specific model of how involvement and outreach are linked to early literacy that could ultimately guide and focus the activities of parents and teachers in Head Start and similar programs.

Building this model will require experimental work from which causal conclusions can be drawn. However, an important initial step is to explore correlational patterns of association in a large sample—the focus of the current study. Analyzing data from the large-scale, nationally representative FACES study (Administration for Children and Families [ACF], 2003; Administration on Children, Youth and Families [ACYF], 2000), we investigate the nature and frequency of family involvement and educator outreach along the primary dimensions described in the Epstein model (2001) and their associations with early literacy and social skills. We employ the FACES 2000 Cohort, which is unique (relative to the previous 1997 cohort) in including a series of variables reflecting both family involvement and educator outreach. In the following section, we frame our research questions by detailing what is known and yet to be determined regarding family involvement and educator outreach along these three dimensions.

### Home-Based Family Involvement and Educator Outreach

By far, the best-researched aspect of family involvement (both in Head Start and in other settings) concerns support for children’s learning in the home. A substantial body of evidence reflects the positive role of home involvement in children’s literacy development (Brooks-Gunn & Markman, 2005; Burchinal, Vernon-Feagans, & Cox, 2008; Dearing, Kreider, Simpkins, & Weiss, 2006; Morrison & Cooney, 2002; St. Clair & Jackson, 2006), likely through very precise pathways. For example, research indicates that young children’s knowledge of letters and sounds is linked to families teaching letters and rhyming songs or games at home (Sénéchal, LeFevre, Hudson, & Lawson, 1996). On the other hand, oral language and vocabulary development are related to the number of conversations children have with parents and siblings during book reading, meals, play, and chores or errands (Hart & Risley, 1995, 1999; Sénéchal, 1997; Sénéchal, Pagan, Lever, & Oulette, 2008). We can infer from this research that families’ instructional practices likely build the skills they most directly target.

In addition, warm and challenging exchanges during family learning activities are associated with children’s development of positive approaches to learning, as they provide opportunities for children to develop interest in and confidence about learning (Baker & Scher, 2002; Darling & Steinberg, 1993; DeBaryshe, Binder, & Buell, 2000; Fulton & Turner, 2008; Grolnick & Ryan, 1989; Ispa et al., 2004). In general,

associations between home involvement and the academic and social skills that support literacy are small to moderate in size, regardless of families' socioeconomic status.

Relevant for the present study is the emerging body of data showing that, despite long-standing misconceptions, families in poverty, including those of ethnic and language minority backgrounds, both value and are actively engaged in children's early academic and social learning (Huston et al., 2001; Machida, Taylor, & Kim, 2002; McWayne et al., 2008; Stipek, Milburn, Galluzo, & Daniels, 1992; Waanders, Mendez, & Downer, 2007). Although substantial variability in the nature and quality of family involvement in high-poverty homes has been observed (Hart & Risley, 1995, 1999; Heath, 1983), large-scale projects such as the Early Head Start Research and Evaluation Project have found that mothers (Raikes et al., 2006) and fathers (Duursma, Pan, & Raikes, 2008) in poverty read with their infants and toddlers several times per week. Similarly, the smaller-scale Harvard Home-School Study (Dickinson & Tabors, 2001) uncovered frequent reading in these homes, along with other cognitive stimulation (e.g., playing games, conversing). The current study capitalizes on the unparalleled opportunity of the FACES data to conduct a larger-scale examination of family involvement among low-income households and to explore the relations between family involvement and the development of early decoding, vocabulary, and positive approaches to learning (Fan & Chen, 2001; Mattingly, Prislín, McKenzie, Rodriguez, & Kayzar, 2002).

In contrast to the wealth of knowledge regarding family involvement at home, little is known about the effects of educators' outreach to the home, in Head Start or other settings, including their goals for helping (or recruiting the help of) families or the practices they use to support such goals (e.g., sending activities or information home). Similarly, no research has examined the effects of home-oriented educator outreach on family involvement or child skills, although some specialized early interventions employing outreach to the home have achieved small to moderate gains in young children's early academic, social, or health outcomes (Essery, DiMarco, Rich, & Nichols, 2008; LaParo, Kraft-Sayre, & Pianta, 2003). In addition, parents' positive perceptions of teachers' overall outreach have been linked to increased home involvement (Patrikakou & Weissberg, 2000). Thus, there is ample rationale for further exploration of Head Start educators' outreach to the home. In the present study, we explore the nature and frequency of home-oriented center outreach and family involvement in Head Start and their relations to children's literacy and approaches to learning, taking into account a variety of covariates that could also influence these skills (e.g., parenting practices, classroom instruction).

### School-Based Family Involvement and Educator Outreach

The Improving Head Start Act recommends that families should have a hand in key program decisions through school-based policy councils, although other school-based involvement is mandated only as often as is "practicable." To date, there has been little empirical examination of the frequency of Head Start's school-based outreach or its effects on family involvement or child outcomes; thus, both issues are addressed in the current study.

There is evidence that many low-income parents of preschoolers, including those in Head Start, are involved in their children's school at least several times per year

(Castro, Bryant, Peisner-Feinberg, & Skinner, 2004; DHHS, 2006; Fantuzzo et al., 2000; McWayne et al., 2008; Rimm-Kaufman & Pianta, 1999). This involvement might take many forms—Castro and colleagues (2004) found that classroom volunteering was most common, followed by attending meetings (e.g., workshops, policy council) and providing other support (e.g., chaperoning field trips, serving meals). Although the role of educator outreach in this involvement has not been explored, families may be more engaged in Head Start when they feel more welcomed by and/or connected to the center (McWayne et al., 2008), implying that center outreach may prompt this involvement.

School-based family involvement in Head Start has been positively linked to children's social competence (DHHS, 2006; Fantuzzo, McWayne, Perry, & Childes, 2004; Fantuzzo et al., 2000), likely because it allows parents to learn about the social expectations of the school and the performance of their children, information that could inform later interactions with children. However, no research has explored the relations between school-based involvement and children's literacy-related outcomes, even though working with educators might help families teach children at home. Furthermore, research has not differentiated among the activities that comprise school involvement (e.g., workshops about working with children vs. policy council meetings to make decisions). Thus, this study examines links between specific school-based activities and specific child literacy-related outcomes.

### Communication-Based Family Involvement and Educator Outreach

The Improving Head Start Act is quite clear in mandating that centers conduct one or more face-to-face conferences or home visits with families each year. FACES data show that more than three-quarters of Head Start families participated in at least one home visit or conference per year (DHHS, 2006). However, some research (Rimm-Kaufman & Pianta, 1999; Rimm-Kaufman & Zhang, 2005) has found that school-family communication occurs as often as twice per month in some preschools serving low-income populations. This communication may promote children's learning; for example, home visiting, which has received the most attention from researchers, has shown a small to moderate relation with young children's language and cognitive skills (Bryant & Wasik, 2004; Korfmacher et al., 2008; Raikes et al., 2006). As yet, however, there has been no examination of the roles of conferences and home visits in advancing skills (literacy or otherwise) of Head Start children, a question which the current study explores.

### Research Questions and Hypotheses

In sum, the extant research literature regarding educator outreach and family involvement in Head Start is something of a patchwork. In light of these important gaps in the research base and policy recommendations, four questions guide this exploratory work:

1. What is the nature and extent of family involvement at home, in preschool centers/classrooms, and through communication with educators during the first year of Head Start?

2. What is the nature and extent of educator outreach in Head Start, particularly around outreach to the home and invitations for family involvement in the center?
3. To what degree do educator outreach and family involvement predict academic (i.e., decoding and vocabulary) and social (i.e., positive approaches to learning) foundations of early literacy during Head Start?
4. Finally, in light of the potentially indirect relations between center outreach and child skills, to what degree are center outreach practices predictive of family involvement?

In general, we expected that both families and centers would regularly implement involvement and outreach. Very specific associations of small to moderate size between these practices and children's skills were expected, with similar associations anticipated between center outreach and family involvement.

## Method

### Participants

Participants in this study were involved in the Head Start Family and Child Experiences Survey (FACES) study (2000 cohort), a multiwave, large-scale investigation of children, families, and educators in the Head Start program that aims, broadly speaking, to understand how the program operates and how it contributes to the well-being of the children and families it serves. Of the 3,100 children eligible for the FACES study, only 2,359 children participated in both the fall and spring of the first year of Head Start. For descriptive and inferential analyses, child data were weighted using the child-level weight (ChnrWtL), which adjusts for nonresponse from fall to spring and equates the sample with the larger population of Head Start participants in the year 2000 in terms of geography, urbanicity, ethnicity, and special needs/disability status. Because participants were selected through their centers, the base weight was normalized, and multilevel models were employed to account for clustering. When weighted, the sample included 3,100 children in 286 classrooms within 222 centers.

**Children.** The mean age of the children was 45.91 months ( $SD = 6.49$ ) in the fall of the 2000 school year, and approximately half of the children were eligible for kindergarten in the subsequent year. Slightly more than half (50.10%) were male. Approximately one-third were European American (34.19%), while nearly a third (32.28%) were African American, and about one-quarter (28.57%) were Hispanic/Latino; an additional 4.96% of the sample were of other backgrounds. In total, 16.56% of the children had limited English proficiency (most of whom spoke Spanish). While 14.48% of the children had disabilities or special needs, only 4.08% had Individualized Education Programs (IEPs), suggesting that their disabilities significantly affected their learning. Demographic statistics are presented in Table 1.

**Families.** For 88.07% of the children, biological mothers responded as the primary caregivers. Overall, 35.85% of the mothers had not completed high school, 39.48% had earned a high school/vocational diploma, 21.54% had completed some college, and 3.13% had attained a bachelor's degree or higher. The majority (78.05%) of mothers were not employed. Approximately half (48.68%) of the families included

Table 1. Descriptive Statistics, Child and Family Sociodemographic Variables

	Mean	SD	Minimum	Maximum
Continuous variables:				
Child age in fall (in months)	45.91	6.49	28.00	68.00
Parenting practices:				
Warmth	4.38	.46	2.00	5.00
Management/discipline	3.77	.78	1.00	5.00
Autonomy support	4.22	.61	1.00	5.00
Controlling	2.20	.71	1.00	5.00
Categorical variables:				
	%			
Child gender:				
Female	49.90			
Male	50.10			
Child ethnicity:				
African American	32.28			
European American	34.19			
Hispanic/Latino	28.57			
Other backgrounds	4.96			
Limited English proficiency	16.56			
Disability status:				
Some diagnosed disability	14.48			
Disability requiring IEP	4.08			
Maternal education:				
No high school degree	35.85			
High school/GED/vocational tech	39.48			
Some college/associate's degree	21.54			
Bachelor's degree or higher	3.13			
Maternal employment:				
Full-time	6.92			
Part-time	15.03			
Seeking work/unemployed	78.05			
Family structure:				
Two-parent household	48.68			
Below poverty line	64.57			
Receiving public assistance	73.14			

two parents. About two-thirds (64.57%) of the families fell below the poverty line and 73.14% received some public assistance (e.g., TANF, food stamps). (See Table 1 for details.)

**Teachers and classrooms.** Over half (58.42%) of the classrooms provided half-day programs, while 41.58% provided full-day classes. Few (11.87%) teachers had only a high school degree, 51.44% had begun or earned an associate's degree, 21.94% held a bachelor's degree, and 14.75% had pursued or earned an advanced degree. About one-third (32.85%) of the teachers held a state teaching certificate and about half (54.51%) held a Child Development Associate (CDA) certificate. On average, teachers had 12.07 years of experience as educators ( $SD = 8.70$ ). The average classroom included approximately 14 children, and the average teacher-child ratio was approximately 1:6. (See Table 2 for details.)

**Centers.** Centers were located primarily in urban areas (73%). About 40% of the centers were located in the southern United States, with the remainder scattered across the nation. About two-thirds (65.32%) of the centers served high-minority (i.e., more than 50%) populations. (See Table 2 for details.)

Table 2. Descriptive Statistics, Teacher, Classroom, and School Sociodemographic Variables

	Mean	SD	Minimum	Maximum
Continuous variables:				
Years of experience in teaching	12.07	8.70	0	36.00
Class size	13.74	3.65	3.00	28.00
Teacher-child ratio	6.46	2.32	1.28	17.00
ECERS-total score	35.02	1.17	31.00	37.00
Arnett score	71.06	12.68	26.00	90.00
Categorical variables:				
	%			
Class schedule:				
Full-day	41.58			
Part-day	58.42			
Teacher education:				
High school/GED	11.87			
Some college/associate's degree	51.44			
Bachelor's degree	21.94			
Some advanced education	14.75			
Teacher certification:				
CDA	54.51			
State teaching certificate	32.85			
Center percent minority:				
Above 50%	65.32			
Under 50%	34.68			
Location of center:				
Northeast	13.96			
Midwest	22.97			
South	38.30			
West	24.77			
Center urbanicity:				
Rural	27.00			
Urban	73.00			

Note.—Teaching certificate percentages do not total 100% because these two examples of teacher certification are distinct from one another (e.g., some teachers had neither, some had both, and some had one or the other).

## Measures

**Data collection procedures.** Data on children's academic skills were collected directly in the fall and spring of Head Start. Also in the fall and spring, parents reported on children's approaches to learning. Furthermore, parents were interviewed about their home involvement in children's education in the fall and spring, and in the spring they also reported on their school- and communication-based involvement. Center directors were interviewed about their family outreach practices in the fall. Finally, classroom structure and quality were observed in the fall by FACES field staff who had participated in a weeklong training including lectures, videos, and role plays.

**Children's skills.** Basic decoding and word reading skills were assessed individually using the Woodcock-Johnson R Letter-Word subtest (LW; Woodcock, McGrew, & Mather, 2001), but only among children who were at least 48 months of age. The reliability and validity of this measure have been widely studied, and in the FACES data set, internal reliability of the items ranged from .84 in the fall of 2000 to .86 in the spring of 2001. Children's scores were measured using an Item Response Theory (IRT) scale that accounts for item difficulty; scores are presented in Table 3, along

Table 3. Descriptive Statistics, Child Skills

Variable	Mean	SD	Minimum	Maximum
Academic skills:				
LW, fall HS standard score	91.91	9.19	65	137
LW, spring HS standard score	93.34	10.97	57	126
LW, fall HS IRT score	356.10	13.89	316	434
LW, spring HS IRT score	363.03	16.99	316	437
PPVT, fall HS standard score	81.20	17.08	40	132
PPVT, spring HS standard score	85.07	16.70	40	132
PPVT, fall HS IRT score	61.99	14.08	6	99
PPVT, spring HS IRT score	68.96	12.88	17	99
Social skills:				
Approaches to learning, fall HS	12.12	1.76	3	14
Approaches to learning, spring HS	12.11	1.77	3	14
Classroom behavior problems, fall HS	5.57	4.97	0	28

with more easily interpreted standardized scores ( $M = 100$ ,  $SD = 15$ , across a national sample).

Receptive vocabulary was individually assessed using the Peabody Picture Vocabulary Test-III (PPVT; Dunn & Dunn, 1998), in which children are shown four images and asked to choose the one that represents a target word. The PPVT had high internal consistency in this sample (Cronbach's  $\alpha = .97$ ) and strong test-retest reliability (.91 to .94 over time). IRT scores are employed in analyses, with standardized scores presented for reference (see Table 3). For both decoding and vocabulary outcomes, child skills fell below the national mean at the start and end of the Head Start year, although children did grow significantly from fall to spring.

Finally, parents rated children's approaches to learning on seven items reflecting their enjoyment of learning and willingness to try new things (Zill, Kim, Sorongon, Herbison, & Clark, 2005). Each item was scored 0–2, yielding a total score from 0 to 14 (see Table 3). Internal consistency was acceptable at both time points ( $\alpha$  between .60 and .65). These data suggest that children had strong enthusiasm for learning at their entry into Head Start. Although the mean score for approaches to learning did not change significantly over the course of the year, the correlation between fall and spring scores was only moderate ( $r = .46$ ,  $p < .001$ ). This suggests that there were changes among many children, although patterns were not consistent across the sample.

#### Family involvement measures.

*Shared book reading.* During fall and spring interviews, families rated the frequency of book reading with their preschoolers. The 7-point rating scale ranged from not at all to every day.

*Home involvement.* Parents also documented the frequency of other home involvement not as widely emphasized in the parent-friendly literature, such as conversing and playing games with children and teaching children about letters, words, and numbers. Each item was rated on a scale from 0 to 2, and items together comprised an 11-item scale ( $\alpha = .70$  in fall, .72 in spring) with a total possible score ranging from 0 to 22.

*In-school involvement.* In the spring, parents rated how often they employed 12 different school-based involvement practices (e.g., classroom volunteering, clerical help, policy council service) on a 5-point scale (i.e., not yet, once/twice, several times,

about once per month, at least once per week). Internal reliability of this scale was moderate ( $\alpha = .80$ ), and the total possible score ranged from 12 to 60.

**Communication.** Parents rated two communication items (attending conferences and attending home visits) on the 5-point scale used for school-based involvement. As these items were minimally correlated ( $r = 0.16, p < 0.001$ ), they were examined individually.

#### **Center outreach.**

**Goals of outreach.** During a personal interview, center directors were asked to select their three primary outreach goals from a list of 10 options and to specify their success in meeting these goals on a 3-point scale from low to high. Potential goals fell into three categories, including informing parents about child development (e.g., health/nutrition, individual child learning), supporting family well-being (e.g., promoting parents' literacy skills, social support networks, or access to support services), and encouraging participation in decision making (e.g., recruiting policy council members).

**Invitations for in-school involvement.** Directors also reported on whether they had ever (vs. never) invited parents to be involved in the center in 17 possible ways, including some directly related to preschoolers' educational development (e.g., serving as classroom aides, planning curricula), some more supportive of the broader Head Start program (e.g., helping with height and weight measurement, vision screening), and some aimed at helping other families (e.g., notify other parents of meetings, mentor other families). Exploratory factor analyses and reliability analyses found that these items represented a single factor (Cronbach's  $\alpha = .66$ ), and responses were summed across the 17 items to create a total for the scale (with possible scores ranging from 0 to 17). Finally, it should be noted that center directors were not asked about personal communication with families, given the redundancy with families' reports on this matter.

**Child and family covariates.** This study also looked at several child and family characteristics (covariates) that might well have been related to family involvement and child outcomes. First, teachers rated children's problem behaviors on the Classroom Conduct Problems scale (modified from Achenbach, Edelbrock, & Howell, 1987, and Zill, 1990) using 14 items addressing the frequency of withdrawn (7 items), hyperactive (4 items), and aggressive behaviors (3 items). Each item was rated from 0 to 2, and the total score ranged from 0 to 28 ( $\alpha = .86$  for fall and spring). The frequency of these behaviors was low. Child behavior and skill data are presented in Table 3.

In addition to demographic variables (described above), primary caregivers reported (in the fall) on the affective nature of their parenting, including overall warmth (5 items, including "I have warm, intimate moments with my child"), autonomy-supportive practices (4 items, including "I encourage my child to be independent"), consistent management and discipline (3 items, such as "I have no difficulty sticking with rules"), and controlling practices (3 items, such as "I don't allow my child to be angry with me"). Parents rated each item from 1 to 5, and the mean for each subscale was calculated ( $\alpha$  between .50 and .60 for all). Although reliabilities were relatively low, we included variables in the models in an effort to be as stringent as possible in our investigation of the contributions of family involvement, net of effects of parenting, on child outcomes (Simpkins, Weiss, McCartney, Kreider, & Dearing, 2006). The majority of families reported high levels of warmth,

autonomy support, and consistent management and discipline, while controlling practices were relatively rare. These data are presented with child and family socio-demographic variables in Table 1.

**Classroom covariates.** Several classroom covariates might have explained variance in both center outreach and child outcomes. Assessors observed the class size and teacher-to-child ratio. Classroom quality (i.e., furnishings, routines, structure, instructional activities) was rated using the Early Childhood Environment Rating Scale—Revised (ECERS-R; Harms, Clifford, & Cryer, 1998). In total, 43 items were distributed across seven subscales, the means (from 1 to 7) of which can be combined into a total score with a possible range from 7 to 49. Reliability in this sample was high ( $\alpha = .92$ ).

In addition, observers used the Arnett Scale of Caregiver Interaction (Arnett, 1989) to gauge the overall relationship quality (i.e., sensitivity, harshness, detachment, permissiveness, independence) between the lead teacher and the students. Observers rated teachers' behaviors on 30 items from 1 to 4, yielding a reliable total ( $\alpha = .94$ ) ranging from 20 to 90. Both the instructional and affective quality of classrooms as measured by the ECERS and Arnett were, on average, high; descriptive data are presented with teacher variables in Table 2.

### Missing Data and Imputation Strategies

At each time point (fall and spring), less than 10% of child outcome data or family involvement data was missing. Among teachers and classrooms, missing data was less than 2% for any variable. Analyses using *t*-test and chi-square methods indicated that these data were missing completely at random. In contrast, there was a higher percentage of missing data at the center level: 148 directors completed interviews in which their outreach practices were discussed, but 75 (equivalent to 34% of the total sample) did not do so. These data were missing at random, as missingness was more likely in rural centers and those with few minority students.

Because ignoring missing data can both limit the power and bias the relevance of statistical analyses (Little & Rubin, 2002), multiple imputations were conducted using SPSS 17. The program simultaneously draws upon all available information to fill in missing data on each variable using an MCMC algorithm. In light of the multilevel nature of these data (discussed below), child/family variables, classroom variables, and center practices were imputed as three distinct data sets, drawing upon all variables presented above. Thus, imputations of child-level variables included classroom- and center-level covariates, while imputations of center-level variables included aggregates of child- and classroom-level data. Five data sets were imputed at each level. No decoding data were imputed for children younger than 48 months at the time of assessment, as these data were missing by design (Acock, 2005).

## Results

### Question 1: Nature of Family Involvement in Head Start

**Reading to children at home.** As shown in Table 4, parents read to children about three to six times per week (represented by a score of 4.5) in both the fall and the spring ( $M = 4.30$ ,  $SD = 2.44$  in the fall and  $M = 4.37$ ,  $SD = 2.36$  in the spring). However, there was a good deal of variation among families around this mean score;

Table 4. Descriptive Statistics, Family Involvement and Head Start Outreach

Composite Variable	Example of Relevant Item	Items	Frequency of Implementation	SD	Range
Family-reported:					
Book reading, fall	How often do you read books with your child?	1	4.30 (3–6 times/week)	2.44	0–7
Book reading, spring	How often do you read books with your child?	1	4.37 (3–6 times/week)	2.36	0–7
Other home involvement, fall	How often do you sing songs with your child?	11	15.45 (1–2 times/week for each practice)	3.94	0–22
Other home involvement, spring	How often do you sing songs with your child?	11	15.69 (1–2 times/week for each practice)	3.81	0–22
Involvement at school	How many times did you volunteer in the classroom?	12	19.54 (1–2 times/year for each practice)	5.92	7–59
Communication—conferences	How many conferences with HS personnel did you attend?	1	2.37 (1–2 times/year)	.95	1–5
Communication—meetings	How often did you meet with HS staff in your home?	1	2.04 (1–2 times/year)	.94	1–5
Center-reported:					
Goals for family involvement	Identify three primary goals for family outreach (e.g., teaching about child development, improving family literacy skills)	10	3 main goals for each center	...	...
Opportunities for family involvement at school	Did your center ask parents to volunteer in the classroom?	17	10.96 total practices	2.74	2–16

for example, in the fall, just 5.67% of parents never read to children, 28.52% read to children once or twice per week, and 29.46% read with children three to six times per week. A substantial minority (36.35%) read every day, and this was the modal response. This distribution was essentially identical in the spring. Interestingly, fall and spring reading frequency were only moderately correlated ( $r = .51, p < .001$ ), indicating that, although there were no mean gains or declines in reading frequency over time across the sample as a whole, some families increased while others decreased.

**Other learning-related activities at home.** A similar pattern was apparent in the other home-involvement variables, on which the average family's total score was 15.45 in the fall ( $SD = 3.94$ ), with an average value of 1.40 for each of the 11 practices, which fell halfway between once/twice per week and three or more times per week. In the spring, families' average total score was 15.69 ( $SD = 3.81$ ), or 1.43 for each of these practices. In both the fall and spring, no one item was dominant, and the full range of responses was observed for all items. Talking, discussing letters and words, and playing together were among the most frequently reported practices, while telling stories, working on crafts, and playing sports were least frequent. The moderate

fall-spring correlation ( $r = .54, p < .001$ ) indicated increases among some and decreases among others, but stability over time among many families.

**Family involvement in the school.** On the school-involvement scale, the average Head Start family reported being involved at least once per year in six different ways. The average total score was 19.54 ( $SD = 5.92$ ), with an average frequency for each item of 1.63, which fell between not yet and once/twice per year. No single item dominated the scale, and the full range of responses was observed for all variables. Classroom observing and volunteering were the activities most frequently reported; preparing newsletters and serving as home visitors for other parents were rare.

**Communication practices.** Regarding communication-related practices, families attended conferences ( $M = 2.37, SD = 0.95$ ) and home visits ( $M = 2.04, SD = 0.94$ ) approximately 1 to 2 times per year. Although the full range of responses was observed for each item, the distributions of responses for both items were clustered around the once/twice per year or several times per year categories; specifically, 68.80% of families used one of these two categories to describe their conference attendance and 61.93% of families used these categories for home visits. The pattern of participation in communication practices, then, was distinctly less frequent (and more homogenous) as compared to home and school involvement.

**Relation between types of family involvement.** Finally, although not a central research question, we examined the extent to which these three types of involvement (home, school, and communication based) were interrelated in this data set, given the implications of this issue for collinearity in models and interpretation of data. Consistent with prior evidence, bivariate correlations between aspects of home- and school-based involvement, as well as between home- and communication-based involvement, were small ( $r < .20, p < .001$  for all pairs). In-school involvement was moderately linked to conference attendance ( $r = .41, p < .001$ ), but only slightly correlated with home visits ( $r = .16, p < .001$ ). Thus, the three kinds of involvement were fairly distinct in this sample.

## Question 2: Nature and Extent of School Outreach

**Center goals.** The mission of Head Start centers is multidimensional, focusing on both academic and more general life-success goals for both children and families. Among academic goals, Head Start centers most frequently selected those goals involving teaching families about child development (selected by 54.73% of centers), encouraging families to read more (36.49%), and teaching families about their own child's individual development (32.43%). Regarding goals oriented toward child and family well-being, centers helped families become economically self-sufficient (48.65%) and taught families about available support services (39.19%). Fewer than 20% of centers primarily focused on having families aid one another or participate in Head Start policy making.

**Centers' assessment of outreach effectiveness.** It is of interest that many center respondents indicated concern about the efficacy of their outreach efforts. For example, of centers that placed a high priority on informing families about child development, 49.38% rated themselves as largely unsuccessful in this endeavor, while 29.63% identified themselves as only moderately successful. Similarly, 45.83% of centers aiming to support families' economic self-sufficiency rated their success as low, and 27.28% reported moderate success. Indeed, for all 10 goals upon which

centers rated themselves, reports of low or moderate success outnumbered reports of high success; for four goals, designations of low success were the modal response.

**Opportunities for family involvement at centers.** Centers on average reported 10.96 ( $SD = 2.74$ ) different opportunities for family involvement in the center during the year, ranging from 2 to 16 opportunities at different centers. Each opportunity was employed by at least 15% of centers, suggesting that none of the available items was irrelevant for respondents. Opportunities focused on involvement in child learning, center support, and outreach to other families. The most common invitations involved asking family members to serve as classroom aides (reported by 91.03% of centers), participate in curriculum planning (85.26%), help to clean the center (89.10%), and recruit and mentor other families (87.82% and 91.02%, respectively). Thus, center outreach to involve families at the school reflected Head Start's multifaceted mission.

**Relations between types of center outreach.** Bivariate correlations between the 11 center outreach variables in the current sample (i.e., 10 possible goals and the total number of center invitations for in-school involvement) found few (specifically, nine) significant correlations ( $p < .05$ ), all of which were quite small ( $r < .25$  for all). These findings support analysis of these variables as distinct constructs.

### Question 3: Contributions of Family Involvement and Center Outreach to Child Outcomes

**Data analyses.** Analyses of the contributions of family and center outreach to child outcomes were conducted using hierarchical linear models (HLMs) to account for children's membership in classrooms and centers. For each outcome (i.e., decoding, vocabulary, approaches to learning), a fully unconditional model (FUM) was first constructed to partition the variance in the child-level outcome between classrooms and centers. If significant ( $p < .05$ ) nesting was identified at both levels of clustering, then a three-level HLM was constructed; but if the outcome varied across only grouping or cluster (i.e., classrooms or centers), then a two-level HLM was constructed.

Variables of interest—including spring measures of involvement at home, school, and through communication, as well as center goals and invitations to the school—were entered into models, in addition to a variety of covariates, including child skills in the fall on the relevant outcome and factors related to children (e.g., child age, gender), families (e.g., household structure, education), classrooms (e.g., instructional and teacher/child interaction quality), and centers (e.g., ethnic composition, urbanicity). Most variables were centered at the grand mean, although pretest scores were centered at the group/cluster mean, given that (a) families' comparisons of children to their peers might affect their involvement and that (b) preliminary models found significant variance across clusters in the pretest/posttest relationship for all outcomes. Given our interest in links between outcomes and specific involvement and outreach practices, aggregate involvement and outreach variables (e.g., home involvement) were initially tested, and in follow-up models, individual items from these constructs were tested in an effort to understand which aspects of these constructs drove associations.

Variables that did not make at least a marginal contribution to the final model ( $p < .10$ ) were trimmed in the interests of parsimony and interpretation, unless they

Table 5. Summary of HLMs: School-Family Partnership and Child Skills during Head Start

Outcome and Predictors	<i>B</i>	<i>p</i>
Decoding:		
Family home involvement—teaching about letters and words	1.30	.045
Vocabulary:		
Family shared book reading	.25	.002
Family school involvement—volunteering	.54	.001
Approaches to learning:		
Family home involvement—teaching about letters and words	.18	.006
Family home involvement—conversations	.14	.004
Family home involvement—counting games	.21	.001
Communication—home visits	.12	.003

were part of a series of dummy variables. This trimming did not affect final patterns of associations. For brevity, only relations of interest between family involvement and center outreach variables of interest and the outcomes are described below and summarized in Table 5. However, Appendix A contains equations that clarify which covariates were included in each model, how variance was partitioned between levels, and what portion of the total variance at each level was explained in the final models.

**Involvement and outreach predictors of decoding skills.** The final model showed that, over and above a series of covariates, children whose parents engaged in more home involvement, and particularly more teaching about letters and words, demonstrated stronger decoding gains during preschool ( $B = 1.30$ ,  $p = .045$ ). Teaching about letters and words uniquely explained .80% of the outcome variance.

**Involvement and outreach predictors of vocabulary skills.** After the effects of a series of covariates, vocabulary learning over the preschool year was stronger among children whose families read to them more often ( $B = .25$ ,  $p = .002$ , .50% of variance). In addition, vocabulary was stronger among children whose families were more involved in school, and follow-up analyses showed that a single item, volunteering in the classroom, drove this association ( $B = .54$ ,  $p = .001$ , .50% of variance).

**Involvement and outreach predictors of positive approaches to learning.** Beyond a collection of covariates, approaches to learning development was stronger for children whose parents were more involved at home, particularly through teaching about letters and words ( $B = .18$ ,  $p = .006$ , 7.43% of variance), talking with children ( $B = 0.14$ ,  $p = 0.004$ , 3.59% of variance), and playing counting games ( $B = .21$ ,  $p = .001$ , 3.88% of variance). Positive approaches to learning were also greater among children whose families participated in more home visits from educators ( $B = .12$ ,  $p = .003$ , 6.30% of variance).

#### Question 4: Center Outreach Practices and Family Involvement

**Data analyses.** A final series of analyses employed multilevel models to explore center-level predictors of the family-involvement variables that demonstrated significant associations with child skills. As above, most predictors were centered at the grand mean; however, the pretest for home involvement and book reading were group centered, given the theoretical rationale noted above and preliminary models showing that these pretest and posttest associations varied significantly ( $p < .05$ )

Table 6. Summary of HLMs: Center- and Family-level Predictors of Family Involvement in Head Start

Outcomes and Predictors	<i>B</i>	<i>p</i>
Family home involvement, spring:		
Family home involvement, fall	.39	<.001
Family shared book reading, spring	.40	<.001
Family in-school involvement	.08	<.001
Center outreach encouraging families to read	.17	.039
Family shared book reading, spring:		
Family home involvement	.18	<.001
Family shared book reading, fall	.36	<.001
Family in-school involvement	.02	.021
Family in-school involvement:		
Family home activities, spring	.10	<.001
Communication—conferences	1.89	<.001
Communication—home visits	1.33	<.001
Center invitations for family in-school involvement	.09	.043
Family communication through home visits:		
Family in-school involvement	.03	<.001

across groups. The child, family, classroom, and center covariates outlined above were entered into models, but those not making at least a marginal ( $p < .10$ ) contribution were trimmed. Results of interest, including family involvement and center outreach predictors of these family factors, are summarized in Table 6, and Appendix A includes equations with all covariates and the variance at each level of the FUM and final model.

**Factors related to family involvement in education at home.** The final model showed that families were more engaged at home in the spring if they had been more involved in the fall ( $B = .39, p < .001$ , uniquely explaining 14.28% of the outcome variance), read more with children ( $B = .40, p < .001$ , 24.05% of variance), and were more involved at school. Again, volunteering drove this association ( $B = .20, p = .004$ , 5.48% of variance). Furthermore, home involvement was stronger when centers encouraged families to read more ( $B = .17, p = .039$ , 3.39% of variance).

**Factors contributing to family shared book reading.** The final model showed that family involvement in reading to their children in the fall predicted spring reading ( $B = .36, p < .001$ , 12.60% of variance). Other factors predicting families' reading to children included other kinds of involvement at home ( $B = .18, p < .001$ , 35.67% of variance) and involvement at the Head Start center ( $B = .02, p = .021$ , .78% of variance).

**Factors associated with family in-school involvement.** School-based involvement was higher among families who engaged in more home involvement ( $B = .10, p < .001$ , 2.74% of variance). In addition, school-based involvement was higher among families who attended more conferences ( $B = 1.89, p < .001$ , 49.22% of variance) and home visits ( $B = 1.33, p < .001$ , 9.18% of variance). Finally, school involvement was higher in centers that employed multiple (varied) methods for inviting involvement ( $B = .09, p = .043$ , 3.91% of variance).

**Factors linked to frequency of home visits.** Only school-based involvement predicted the frequency of home visits over and above other variables in the model ( $B = .03, p < .001$ ). School-based involvement explained 3.81% of the outcome variance.

## Discussion

Using data from the large-scale, nationally representative FACES study, this investigation revealed that, in general, Head Start families reported regular and frequent involvement at home and school to support their children's learning. Centers embraced goals involving child skills and family well-being for their outreach and offered a variety of involvement opportunities in the center itself. Furthermore, multilevel models revealed very specific associations between family involvement variables and children's academic and social literacy-related skills, over and above other covariates. For example, parents' teaching about letters was linked to children's decoding, whereas book reading was linked to vocabulary, as was family volunteering. Home visits and several specific home learning activities were linked to approaches to learning. Center emphasis on reading was related to more home involvement, while center invitations for in-school involvement were related to families' in-school involvement. These results bring us closer to understanding what family involvement and educator outreach practices would be optimal in fostering early literacy and learning-related skills among preschool children in Head Start.

### Frequency of Family Involvement and Educator Outreach

These data support the idea that families in poverty are engaged teachers of their children (Dickinson & Tabors, 2001; Hart & Risley, 1995, 1999; Raikes et al., 2006). Indeed, the average Head Start family read books and engaged in conversations, games, and other activities with young children about every other day, visited the school at least six times, and communicated personally with educators via at least one home visit and one conference. This discovery, consistent with recent research (O'Donnell, 2008; Raikes et al., 2006), is important because it contradicts traditional deficit model conceptualizations of family involvement in low-income households and shows how families with few financial resources can be rich in human resources that support children's learning. Future research might take up this thread by exploring how and why families choose to engage (or not) with Head Start centers, as well as how family involvement in children's learning at home is (or could be) aligned with the Head Start curriculum to ensure coordination of children's learning at home and school.

One important nuance within these findings is that while Head Start educators reported that they reached out to families regularly and in a variety of ways, many center directors expressed concern about the effectiveness of their outreach. Indeed, for all goals about which directors responded, more people reported either little or moderate success than high levels of success. In light of the substantial dollars and human effort devoted to this outreach, understanding how and why center success is compromised is imperative. It would be useful to explore obstacles to effective center outreach—which might include lack of funding, time restrictions, and the multiple responsibilities and challenges that families face—as well as factors that support successful engagement of families with Head Start.

### Involvement and Outreach Predictors of Child Decoding, Vocabulary, and Approaches to Learning

Altogether, the data indicate that family involvement plays a unique role in Head Start children's development of school readiness skills, and that research and practice

must move beyond blanket statements about the value of “involvement” to carefully consider the specific associations between particular dimensions (i.e., home, school, communication) of involvement and particular outcomes (e.g., decoding, vocabulary). These distinct, specific patterns of associations are aligned with recent evidence (Sénéchal et al., 1996) indicating that children learn content as a result of instruction in that content.

### Family Involvement and Decoding, Vocabulary, and Positive Approaches to Learning

The study revealed that decoding-related learning during Head Start was linked only to families’ teaching about letters and words, while vocabulary development was associated only with book reading. As noted above, while straightforward, these patterns of specificity are important because they help us to understand that young children are not so much “sponges” that benefit from any instructional opportunities, but rather that the link between input (e.g., hearing new vocabulary in books) and outcomes (e.g., learning new vocabulary) can be very precise. Replicating other research (Evans, Shaw, & Bell, 2000; Sénéchal et al., 1996) in this representative Head Start sample adds to this emerging body of evidence and refines our understanding of early literacy learning.

In contrast to some prior work with smaller data sets (e.g., Fantuzzo et al., 2000), vocabulary development was associated with families’ in-school involvement and particularly volunteering, which may suggest that parents, when they visit classrooms, expand their understanding of how to build children’s language skills (e.g., using open-ended questioning strategies, providing feedback to children).

And, finally, three family home-involvement practices with largely academic orientations—teaching about letters and words, conversing with children, and playing counting games—were related to positive approaches to learning among children. This result indicates that a variety of avenues for engaging with children can contribute to their enthusiasm for interacting with adults and peers and for acquiring new information. However, given the correlational nature of this study and the fact that parents reported on both involvement and on child approaches to learning, it could also be the case that greater enthusiasm for learning among children (particularly as interpreted by parents) prompts stronger family involvement, representing more of a transactional process (Sameroff & MacKenzie, 2003). Thus, this work, although correlational, suggests specific activities that Head Start educators and families could potentially employ to foster early decoding and vocabulary skills or approaches to learning, refining the broad suggestions currently provided in the field.

### Home Visits and Positive Approaches to Learning

Families’ communication with educators through home visits was linked exclusively to children’s positive approaches to learning. It is plausible that home visits serve as a mechanism through which teachers and families work together to set appropriate and appealing goals for individual children, creating more positive learning environments for children and ultimately increasing child engagement. In addition, there is ample evidence that using home visits to promote gains in children’s literacy skills requires extensive educator and parent training and is unlikely

to happen in the absence of significant, targeted, programmatic effort (Baker, Piotrkowski, & Brooks-Gunn, 1999; Powell, 2005; Powell, Okagaki, & Bojczyk, 2004). Thus, there may be room to enhance the contributions of home visits to the academic foundations of Head Start children's reading readiness. However, in light of the correlational design of this work, it is also possible that families are more likely to embrace opportunities for home visits when children are (or are perceived to be) more enthusiastic about school. Altogether, then, data suggest a very specific role for family involvement in Head Start children's development and begin to illuminate a comprehensive yet precise model of how family involvement can promote early literacy among children in poverty.

### Relations between Center Outreach and Family Involvement

Although center outreach was not directly related to child skills, it was linked to family involvement. First, center invitations for family involvement predicted more of this involvement, suggesting that families accept opportunities for involvement when they are presented. In turn, data imply that, as proposed by Epstein (2001), there is power in centers' efforts to open their doors to families in a variety of ways. In addition, centers' encouragement of family reading was linked to increases in family involvement at home from fall to spring. Given that this association emerges even with a comprehensive collection of variables included in these analyses, it is quite plausible that family involvement increases as a result of this outreach, as families come to understand the importance of their own literacy and their child's early literacy.

It is interesting that centers' reading-related outreach is not linked to families' book reading. Given that book reading is widely publicized as important for families with young children, it is possible that center outreach does not provide families with novel information about reading books with their children. In contrast, center outreach around reading may be accompanied by information regarding the value of related literacy practices such as conversing, singing, and playing games, which may be new to families and may engage their interest.

As a final point, analyses showed that family involvement along one dimension (e.g., book reading reported in the spring) was generally predicted by involvement along other dimensions (e.g., other home involvement and in-school involvement). These findings suggest that each aspect of involvement could serve as a leverage point for the others, and that centers might consider how to use one kind of involvement (e.g., volunteering) to foster another (e.g., reading).

### Absence of Hypothesized Associations

Many possible associations among outreach, family involvement, and children's literacy skills did not emerge in these data. The probable explanation is that not all of the outreach and involvement strategies we explored are likely to result directly in gains in children's skills. For example, it is doubtful that invitations to or attendance at a parent policy council meeting will bring parents to work more closely with their children around language and literacy. In contrast, classroom volunteering may well expose parents to new information about the curriculum and about developmentally appropriate methods of early instruction that will inform their later involvement

with children. In addition, some effects of family involvement on children's learning are likely already reflected in fall scores on decoding, vocabulary, and approaches to learning, and so are not apparent in gains from fall to spring. Furthermore, some outcomes, including decoding and approaches to learning, receive heavy focus in the preschool classroom (Pianta, Belsky, Houts, & Morrison, 2008), which may attenuate families' contributions to skill development over the year.

Moreover, findings and their implications for policy and practice must be considered in the context of our constrained study aims. The focus on literacy skills in this study was intentionally quite narrow. However, Head Start is not a literacy program; instead, its aims are broad, including a collection of preschool developmental outcomes as well as family- and community-related goals. Family well-being and parents' sense of efficacy around helping their children learn, both of which are important for family and child functioning, might be more directly affected by other involvement or outreach opportunities (e.g., policy council participation, referrals to community resources) that were not predictors of literacy. Consequently, null effects in this study should not be construed as indications that involvement or outreach are not "working," but rather that only a subset of practices are specifically related to particular academic and social literacy skills, and thus that efforts to improve children's literacy might focus on this subset of practices. Additional research of this nature is needed regarding predictors of child and family outcomes other than early literacy, especially in programs such as Head Start that target a wide variety of competencies.

### Limitations and Future Directions for Research

Several limitations of the present study beyond those noted above highlight avenues for productive future research. First, this study relies upon parent and educator self-reported data, which, although cost-effective and time-efficient to collect, carry risks of bias due to respondents' recall errors or effects of social desirability (Schwarz, 1999). For example, in their study of family involvement in Head Start, Castro and colleagues (2004) found that parents' reports of their classroom volunteering demonstrated small correlations with teachers' reports of this same activity. Beyond these self-reported data, children's approaches to learning were not directly observed but instead were collected through parent-reported data, a technique that might also introduce recall error or social desirability. Moreover, the fact that parents reported on both their involvement and on children's outcomes may result in shared source or method bias (Lance & Vandenberg, 2009). Future work might employ observations of educator outreach and family involvement, as well as direct assessments of all child skills under investigation, to circumvent these potential problems.

Second, as noted above, some center directors did not complete the outreach interview, necessitating imputation of their outreach data. Future Head Start research efforts might more heavily recruit directors, especially in rural and low-minority areas. Research might also gather outreach data from educators other than directors, including classroom teachers, education coordinators, and family service workers who are on the "front lines" in working with families.

Third, given the specificity of many of the associations that emerged, content may play a critical role in these associations. For example, literacy-focused conference discussions between parents and teachers may largely promote children's literacy

skills, whereas social-skill-focused discussions may promote social skills. Collecting more specific data about the focus of involvement and outreach could refine our assessment of the relative impact of family involvement and center outreach. In addition, as we note above, the degree to which educators and families share power in these interactions (i.e., are true partners) is unclear from these data, and taking a more fine-grained approach to the interpersonal features of these interactions could provide important sociological information.

Finally, the FACES study includes large samples of children from ethnic minority backgrounds, and group comparisons between European American, African American, and Hispanic/Latino subsamples would illuminate the degree to which patterns of associations between educator outreach, family involvement, and child skills are consistent across these groups (Davis-Kean, 2005; McWayne et al., 2008).

## Conclusions

Taken together, results from these analyses reveal that in this nationally representative Head Start sample, family involvement and center outreach occur regularly and contribute, albeit selectively, to children's decoding, vocabulary, and positive approaches to learning during the preschool year. More broadly, findings begin to lay the groundwork for future research, and for the development of a comprehensive and specific model of family involvement and educator outreach that describes practices and activities that foster children's literacy and related skills—skills that are essential in promoting the school readiness of America's most vulnerable learners.

## Appendix A

### Research Question 3

**Decoding.** The FUM showed that children's spring decoding scores varied between centers (8.94% of total variance,  $p < .001$ ) and classrooms (5.30% of total variance,  $p = .041$ ). Thus, a three-level model (children within classrooms within centers) was created:

$$\begin{aligned} \text{Spring decoding} = & \gamma_{000} + \gamma_{001}\text{Urban Head Start} + \gamma_{002}\text{High-minority Head Start} \\ & \text{population} + \gamma_{003}\text{Midwest} + \gamma_{004}\text{South} + \gamma_{005}\text{West} + \gamma_{010}\text{Teacher education} + \\ & \gamma_{100}\text{Child age at assessment} + \gamma_{200}\text{Maternal education} + \gamma_{300}\text{Controlling parenting} \\ & + \gamma_{400}\text{Problem behaviors} + \gamma_{500}\text{Limited English proficiency (LEP)} + \gamma_{600}\text{Fall de-} \\ & \text{coding} + \gamma_{700}\text{Family teaching about letters and words (spring)} + \gamma_{800}\text{Family book} \\ & \text{reading (spring)} + r_o + u_{oo} + e. \end{aligned}$$

The model explained 38.95% of the level 1 variance, all significant level 2 variance ( $p = .068$ ), and 4.49% of level 3 variance, with significant variance remaining ( $p < .001$ ).

**Vocabulary.** There was significant variance in children's spring PPVT scores between centers (26.38% of total variance,  $p < .001$ ) as well as between classrooms (7.86% of total variance,  $p < .001$ ). Thus, a three-level model (children within classrooms within centers) was created:

$$\begin{aligned} \text{Spring vocabulary} = & \gamma_{000} + \gamma_{001}\text{High-minority Head Start population} + \\ & \gamma_{010}\text{Teacher-student relationship quality} + \gamma_{020}\text{Teacher experience} + \gamma_{100}\text{Child} \\ & \text{age at assessment} + \gamma_{200}\text{African American} + \gamma_{300}\text{Hispanic/Latino} + \gamma_{400}\text{Other} \end{aligned}$$

ethnic minority +  $\gamma_{500}$ Maternal education +  $\gamma_{600}$ Maternal mastery +  $\gamma_{700}$ Problem behaviors +  $\gamma_{800}$ Child has IEP +  $\gamma_{900}$ Limited English proficiency +  $\gamma_{1000}$ Fall vocabulary +  $\gamma_{1100}$ Family book reading (spring) +  $\gamma_{1200}$ Family volunteering +  $r_o + u_{o0} + u_{1000}$ Fall vocabulary +  $e$ .

Overall, the model explained 81.16% of the level 3 variance (with significant variance remaining,  $p < .001$ ), as well as 39.52% of the level 2 variance ( $p < .001$ ) and 59.51% of the variance at level 1.

**Approaches to learning.** The FUM showed that children's spring approaches to learning, as evaluated by their parents, varied only across centers (4.28% of total variance,  $p < .001$ ). Thus, a two-level model (children within centers) was created:

Spring approaches to learning =  $\gamma_{000} + \gamma_{010}$ Teacher education +  $\gamma_{100}$ Child age at assessment +  $\gamma_{200}$ Two-parent family +  $\gamma_{300}$ Warm parenting +  $\gamma_{400}$ Consistent discipline in parenting +  $\gamma_{500}$ Behavior problems +  $\gamma_{600}$ Limited English proficiency +  $\gamma_{700}$ Fall approaches to learning +  $\gamma_{800}$ Family teaching about letters and words (spring) +  $\gamma_{900}$ Family cooking with child (spring) +  $\gamma_{1000}$ Family talking about TV with child (spring) +  $\gamma_{1100}$ Family playing counting games with child (spring) +  $\gamma_{1200}$ Family/school communication through home visits +  $r_o + u_{o0} + u_{70}$ Fall approaches to learning +  $e$ .

The final model explained 21.41% of the level 1 variance and 29.98% of the level 2 variance, leaving significant variance at level 2 to be explained ( $p < .001$ ).

#### Research Question 4

**Home involvement.** Family home involvement in spring varied only between centers (8.50%,  $p < .001$ ). Thus, a two-level model (families within centers) was constructed:

Spring home involvement =  $\gamma_{00} + \gamma_{01}$ Center emphasis on family reading +  $\gamma_{02}$ Midwest +  $\gamma_{03}$ South +  $\gamma_{04}$ West +  $\gamma_{10}$ Family poverty status +  $\gamma_{20}$ Maternal mastery +  $\gamma_{30}$ Limited English proficiency +  $\gamma_{40}$ Fall home involvement +  $\gamma_{50}$ Family book reading (spring) +  $\gamma_{60}$ In-school involvement +  $u_o + r$ .

The final model explained 43.02% of the level 2 variance (with significant variance remaining,  $p < .001$ ) and 33.79% of level 1 variance.

**Shared reading.** Spring family book reading varied significantly between centers (6.82%,  $p < .001$ ). Thus, a two-level model (families within centers) was constructed:

Spring family book reading =  $\gamma_{00} + \gamma_{01}$ Urban Head Start +  $\gamma_{02}$ High-minority Head Start population +  $\gamma_{03}$ Midwest +  $\gamma_{04}$ South +  $\gamma_{05}$ West +  $\gamma_{10}$ Family poverty status +  $\gamma_{20}$ Child has IEP +  $\gamma_{30}$ Family home involvement (spring) +  $\gamma_{40}$ Fall family book reading +  $\gamma_{50}$ In-school involvement +  $u_o + r$ .

The final model explained 48.74% of the level 2 variance (with significant variance remaining,  $p < .001$ ), as well as 29.68% of the level 1 variance.

**In-school involvement.** Family involvement in Head Start varied significantly across centers (15.95%,  $p < .001$ ); consequently, a two-level model (families within centers) was constructed:

Family in-school involvement =  $\gamma_{00} + \gamma_{01}\text{Urban Head Start} + \gamma_{02}\text{High-minority Head Start population} + \gamma_{03}\text{Center invitations for in-school involvement} + \gamma_{10}\text{Maternal education} + \gamma_{20}\text{Maternal mastery} + \gamma_{30}\text{Family home involvement (spring)} + \gamma_{40}\text{Family book reading (spring)} + \gamma_{50}\text{Family/school communication through conferences} + \gamma_{60}\text{Family/school communication through home visits} + u_0 + r.$

The final model explained 42.64% of level 2 variance (with significant variance remaining,  $p < .001$ ), and 36.92% of level 1 variance.

**Communication—home visits.** Family participation in home visits varied between centers and classrooms (accounting for 24.62% and 13.08% of variance, respectively,  $p < .001$  for both), and a three-level model was created:

Family/school communication through home visits =  $\gamma_{000} + \gamma_{001}\text{High-minority Head Start population} + \gamma_{010}\text{Full-day class} + \gamma_{020}\text{Teacher education} + \gamma_{030}\text{Teacher certification} + \gamma_{040}\text{Teacher CDA} + \gamma_{100}\text{Child age at assessment} + \gamma_{200}\text{Maternal mastery} + \gamma_{300}\text{Family book reading (spring)} + \gamma_{400}\text{Family/school communication through conferences} + r + u_{00} + e.$

In total, 35.64% of level 3 variance and 8.63% of level 2 variance were explained, although significant variance remained at both levels ( $p < .001$ ). In addition, the model explained 6.06% of level 1 variance.

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