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Parent Engagement and School Readiness: Effects of the Getting Ready Intervention on Preschool Children's Social-Emotional Competencies

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Abstract

Research Findings: Parental engagement with children has been linked to a number of adaptive characteristics in preschool children, and relationships between families and professionals are an important contributor to school readiness. Furthermore, social-emotional competence is a key component of young children's school readiness. This study reports the results of a randomized trial of a parent engagement intervention (Getting Ready) designed to facilitate school readiness among disadvantaged preschool children, with a particular focus on social-emotional outcomes. Two hundred and twenty children were involved over the 4-year study period. Statistically significant differences were observed between treatment and control participants in the rate of change over a 2-year period on teacher reports for certain interpersonal competencies (i.e., attachment, initiative, and anxiety/withdrawal). In contrast, no statistically significant differences between groups over a 2-year period were noted for behavioral concerns (anger/aggression, self-control, or behavioral problems) as a function of the Getting Ready intervention.

Practice or Policy: The intervention appears to be particularly effective at building social-emotional competencies beyond the effects experienced as a function of participation in Head Start programming alone. Limitations and implications for future research are reviewed.

It is now abundantly clear that a child's first 5 years of life are critical for the establishment of early cognitive, social-emotional, and regulatory skills and competencies that serve as precursors for lifelong adaptation and functioning (Shonkoff & Phillips, 2000). The settings in which young children grow and develop, and the interactions and experiences they encounter in these highly formative years, set the stage for later learning. That is, the first 5 years are filled with antecedent events, experiences, and relationships that either support or diminish children's abilities to benefit from new and ongoing opportunities and acquire basic and complex social-emotional and cognitive skills. Thus, the degree to which children are poised for learning upon entering the formal school environment is predicated in very large part on what transpires well before they enter the school door.

Concern about children's readiness for school is greatest when considering the disparities prevalent among children in many American communities. The cumulative effect of interrelated factors such as poverty, low parental education, parental mental health concerns, and living in a linguistically isolated household presents particular challenges for the development of young children (C. E. Snow, Burns, & Griffin, 1998; Zill & West, 2001). Early differences in performance do not necessarily disappear as children progress through school; in fact, the achievement gaps among ethnic groups and between children of advantaged and disadvantaged backgrounds tend to widen over time (Brooks-Gunn, Rouse, & McLanahan, 2007; Chatterji, 2006; Future of Children, 2005). It is thus necessary to identify effective methods of enhancing the early learning experiences of children across diverse environments and supporting school preparedness.

Ecological theory (Bronfenbrenner, 1979) posits that factors affecting children's experiences prior to school entry and throughout the formative developmental years occur across multiple systems, including at the immediate (microsystemic), interactional (mesosystemic), and distal (exo- and macrosystemic) levels. Adopting an ecological perspective, our research team conceptualizes *school readiness for all children* (a) as starting at home, well before a child enters a formal child care or preschool setting; and (b) in terms of relationships among the child, family, and school, and their interactions with one another (Mashburn & Pianta, 2006). Specifically, we conceptualize school readiness to include the capabilities of children, families, and practicing professionals that promote positive and adaptive student outcomes in formal and informal educational settings. In addition, we define school readiness for children across a span of developmental dimensions including cognitive, physical, and social-emotional capacities of children and their interrelationships with one another (National Education Goals Panel, 1997; K. L. Snow, 2006, 2007). For the purposes of the current investigation, we are particularly interested in one dimension of children's school readiness: social-emotional competence.

SOCIAL-EMOTIONAL LEARNING

Social-emotional competence characterizes a child's capacity to interact with and form relationships with others (e.g., family members, other caregivers, peers). It is an important component of young children's school readiness (Fantuzzo et al., 2007; Thompson & Raikes, 2007) and includes both interpersonal competence (i.e., behaviors that bring the child in close contact and communication with others) and behavioral concerns (i.e., externalizing behaviors that distance the child from others). Children with interpersonal and behavioral competence engage more with peers and teachers, participate in classroom activities, enjoy learning, and are more likely to experience a positive transition from preschool to kindergarten (Raver & Knitzer, 2002). Young children's interpersonal (affective) and behavioral (regulatory) competence has been shown to predict their academic performance in first grade beyond their cognitive skills and family backgrounds (Raver & Knitzer, 2002). It also continues to contribute to academic success in reading and math through sixth grade (McClelland, Acock, & Morrison, 2006).

Yet many children do not possess the social-emotional competence necessary to function effectively in a formal educational setting (Raver & Knitzer, 2002). For example, 46% of kindergarten teachers have reported that more than half of their incoming students did not possess the basic social and emotional competencies necessary to succeed in school (Rimm-Kaufman, Pianta, & Cox, 2000). In addition, 34% of teachers reported that more than half of their entering kindergarten students had difficulty working independently, and 30% indicated that more than half of children enter kindergarten with difficulties working as part of a group. Recent results of the randomized Head Start Impact Study (Administration for Children & Families, 2005) found no overall impact of Head Start on social skills, approaches to learning, or overall social competence for 3- or 4-year-olds. Taken together, these findings indicate a need for interventions that can positively impact social-emotional competence in young children living in disadvantaged conditions.

The tasks associated with social-emotional competence can be difficult for children in poverty (Zill, Moore, Smith, Stief, & Coiro, 1991). Stress experienced by families in poverty has been found to relate to diminished levels of emotional support and inconsistent guidance in parenting (Duncan & Brooks-Gunn, 1997). Low socioeconomic status and familial instability, and the concomitant risk factors typically associated with them (e.g., low maternal education, single or variable parental status, lack of daily routines, lack of adequate nutrition and medical care, exposure to an impoverished or dangerous neighborhood), predict a host of social adjustment problems, particularly when these stressors are cumulative (Ackerman, Kogos, Youngstrom, Schoff, & Izard, 1999). The preschool period provides an important window of opportunity to foster social-emotional learning, including interpersonal competencies and behavioral regulation, and may

be especially influential when intervention efforts seek to strengthen environments that influence the daily experiences of young children.

RELATIONSHIPS ASSOCIATED WITH SCHOOL READINESS

School readiness for children and their families occurs through the development of positive relationships within the home (i.e., parent-child relationships[1]) and between the multiple interacting ecological systems of the home and other supportive environments (i.e., parent-professional relationships). Early education and intervention programs can promote children's readiness skills, including social-emotional competencies, via relational contexts that permeate across home and school systems. These include the *teacher-child relationship*, the *parent-child relationship*, and the *parent-professional relationship*. The latter two relationships have as a foundation the active engagement of parents as significant contributors to, and partners in, a child's learning and development. Given our interest in child *and family* readiness for school, it is these parent-based relationships that form the foundation of the study described here.

Parent Engagement and the Parent-Child Relationship

We define *parent engagement* as comprising three dimensions of parental behaviors that are highly predictive of children's social-emotional learning and cognitive development (NICHD Early Child Care Research Network, 2002): (a) parental warmth and sensitivity, (b) support for a child's emerging autonomy, and (c) active participation in learning (Edwards, Sheridan, & Knoche, in press; Espinosa, 2002; Pan, Rowe, Singer, & Snow, 2005; Sheridan, Marvin, Knoche, & Edwards, 2008).

Parental warmth, sensitivity, contingent responsiveness to children's cues (Landry, Smith, Swank, Assel, & Vellet, 2001), and emotional availability toward children (Emde & Robinson, 2000) are positively related to the development of secure relationships (Ainsworth, Bell, & Stayton, 1972; Guralnick, 2006), children's improved short-term cognitive and language skills (Hirsh-Pasek & Burchinal, 2006), and long-term positive academic performance (Downer & Pianta, 2006). Children in highly connected parent-child relationships tend to display positive social-emotional outcomes, such as strong prosocial orientations, numerous and high-quality friendships, and high levels of peer acceptance in kindergarten (Clark & Ladd, 2000; Kerns, Klepac, & Cole, 1996). In like fashion, the tasks associated with

1. The term *parent* here refers to the primary caregiver in a child's life and may refer to a guardian or even to a small number of significant attachment figures in a home who share parenting duties.

social-emotional learning are most readily achieved when children experience one or more secure attachments with adults, whereas the absence of a secure attachment leaves a child at a distinctive disadvantage (Denham & Weissberg, 2004).

Parental support for children's autonomy, or the process by which parents facilitate children's individuation and self-competence (Clark & Ladd, 2000), has been associated with increased levels of cognitive competence in young children (Mulvaney, McCartney, Bub, & Marshall, 2006), communication with peers (Martinez, 1987), self-regulation (Neitzel & Stright, 2003), and adaptive levels of social assertiveness and self-directedness in social and play interactions at preschool (Denham, Renwick, & Holt, 1991). Finally, parental participation in promoting child learning (including social-emotional learning), valuation of education, and provision of an enriching home environment have been shown to be positively related to young children's academic performance (Foster, Lambert, Abbott-Shim, McCarty, & Franze, 2005; Hill, 2001; Weigel, Martin, & Bennett, 2006), prosocial behavior (McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004), positive approaches to learning (perseverance and mastery motivation; Turner & Burke, 2003), participation in learning activities (McWayne et al., 2004), and academic achievement (Fan & Chen, 2001; Senechal, 2006).

Parent Engagement and the Parent-Professional (Family-School) Relationship

Connections among parents and professionals represent another relationship that is predictive of important child social-emotional outcomes (Henderson & Mapp, 2002; Patrikakou & Weissberg, 1999). Partnership practices at the mesosystemic (home-school) level involve meaningful connections among important developmental contexts (Christenson & Sheridan, 2001), facilitate continuity and smooth transitions across systems (Early, Pianta, Taylor, & Cox, 2001; Ramey & Ramey, 1999), and are considered to be particularly important during the preschool years (Raffaele & Knoff, 1999) when parents are formulating roles and constructs vis-à-vis their children's education. Collaborative partnerships among parents and professionals correlate with positive social-emotional and behavioral outcomes for children and families and bolster the efficacy and efficiency of interventions aimed at improving social-emotional behaviors (Grolnick & Slowiaczek, 1994; Masten & Coatsworth, 1998). Thus, interventions designed to foster supportive relationships both *within* and *across* home and center/school contexts to aid social-emotional skill development are necessary for supporting school readiness in young disadvantaged children (Denham & Weissberg, 2004). However, many early childhood education approaches fail to fully tap the potential of parents as *partners in* (rather than recipients of) the educational enterprise or as meaningful agents for facilitating children's healthy social-emotional development.

THE GETTING READY INTERVENTION

The Getting Ready intervention was designed to provide an ecological, relationship-based approach to school readiness for families with children from birth[2] to 5 years of age who are of low income and participating in home- and center-based early education programs. A primary emphasis of the Getting Ready intervention revolves around promoting parent engagement, defined in terms of parental warmth and sensitivity, support for a child's emerging autonomy, and active participation in learning. The intervention integrates triadic (parent-child-professional; McCollum & Yates, 1994) and collaborative (family-school) strategies (Sheridan & Kratochwill, 2008) to promote parent-child and parent-professional partnerships. Specifically, triadic strategies prompt warm, supportive parent-child interactions; affirm parents' competence; focus parents' attention on child development or skills; provide developmental information; and model and/or suggest parent actions that can support child learning. Collaborative strategies are aimed at identifying child strengths, determining important social-emotional learning goals, assessing current levels of child performance or ability, brainstorming plans that parents and teachers can use to support a child's social-emotional growth, and checking back to monitor child progress. The active, seamless integration of the two types of strategies constitute the Getting Ready intervention.

PURPOSE OF THE STUDY

This investigation is part of a larger longitudinal randomized clinical trial evaluating the effects of the Getting Ready intervention for promoting school readiness among disadvantaged children aged birth to 5 and their families. In this article, we present the effects of the Getting Ready intervention as experienced by children and families throughout their Head Start enrollment relative to similar control participants whose Head Start experience represented standard "business-as-usual" practice.

Given the highly relational emphasis of our intervention, and our primary interest in social-emotional outcomes, the purposes of this article are to investigate the effects of the intervention across two dimensions of social-emotional competence—interpersonal competence and behavioral concerns—for Head Start children aged 3 to 5 years. Specific research aims were to (a) evaluate the efficacy of the Getting Ready intervention on Head Start students' interpersonal competence relative to that of a control group and (b) determine the effects of the intervention on behavioral concerns relative to a control group. Because the efficacy of the Getting Ready interven-

2. Collection of outcome data for families and children aged birth to 3 in home-based programs is under way; such data not included in the present study.

tion is predicated on its appropriate implementation by Head Start teachers and uptake by parents, fidelity of intervention implementation and participant responsiveness was also assessed.

METHODS

Setting and Context (Business as Usual)

This study took place in 28 Head Start classrooms operated through a public school system in a Midwestern state over the course of 4 years. Classrooms were housed in 19 different elementary school buildings and were in session during the academic year for 5 days each week, 4 hr each day. Nine elementary school buildings housed two preschool classrooms; the remaining 10 buildings each had one classroom. All classrooms were NAEYC-accredited and used the *High/Scope* curriculum (Hohmann & Weikert, 2002). Classroom size averaged 18 to 20 children from ages 3 to 5 years. Each classroom had at least one full-time state-certified lead teacher and one full-time paraprofessional classroom aide.

The Head Start programs participating in this study implemented Head Start Performance Standards 1304.40 on Family Partnership, including the several standards related to parent involvement. Practices to involve parents in programmatic activities were highly consistent with the national Head Start philosophy and policies. Standard (i.e., business-as-usual) services included an average of five home visits each academic year, parent-teacher conferences twice each year, and monthly family socialization activities at the school and in the community. The Getting Ready intervention built on and extended the agencies' current systematic assessment and evaluation processes rather than duplicating or competing with them.

Participants

The participants in the present study were 220 children enrolled in Head Start and their parents. Table 1 summarizes participants' demographic information.

Children. A total of 220 children ranging in age from 35.94 to 52.63 months at baseline (M = 43.06 months, SD = 3.55 months) served as participants. Fifty-one percent of child participants were boys and 49% were girls. According to parent report, slightly under one third of child participants were White/non-Hispanic; 25% and 18% were reported to be Hispanic/Latino and African American/Black, respectively. The primary language spoken by 76% of children was English, and 19% spoke primarily Spanish. Arabic or a combination of languages was spoken in 4.5% of child participants' households.

Table 1. Baseline Demographic Characteristics of Participants Overall and by Group

Characteristic	Children			Parents		
	Control	Treatment	All	Control	Treatment	All
Age[a]						
M	43.20	42.94	43.06	28.54	30.08	29.35
Range	36.5-52.6	35.9-51.8	35.9-52.6	19-51	19-62	19-6
SD	3.67	3.45	3.55	6.76	8.45	7.71
Ethnicity, %						
White	30.3	34.5	32.5	45.0	49.5	47.4
Black	15.2	20.0	17.7	14.0	17.4	15.8
Latino/Hispanic	29.3	21.8	25.4	30.0	22.9	26.3
Native American	4.0	1.8	2.9	3.0	3.7	3.3
Other	21.2	21.8	21.5	8.0	6.4	7.2
Language at home, %						
English	68.0	82.6	75.6			
Spanish	24.0	14.7	19.1			
English/Spanish	1.0	0.9	1.0			
Other	7.0	1.8	4.3			
Gender, %						
Male	44.1	58.1	51.6	7.0	3.6	5.2
Female	55.9	41.9	48.4	93.0	96.4	94.8
Identified disability, %	13.3	8.5	12.2			
Highest education level, %						
Less than high school				23.9	22.9	23.3
High school diploma				13.6	9.5	11.4
Some college/training				46.6	45.7	46.1
Two-year college degree				8.0	9.5	8.8
Four-year college degree or more				8.0	12.4	10.4
Adults in the home, %						
Two or more				62.6	58.2	60.3
One				37.4	41.8	39.7
Receives public aid, %				97.8	98.1	97.9
Work status, %						
Employed				53.8	53.7	53.7
Unemployed/in school				18.3	13.9	15.9
Unemployed				28.0	32.4	30.3

*N*s = 220 children and 214 parents at Time 1 assessment. Six parents did not provide demographic information at the baseline measurement.

a. Age is shown in months for children and in years for parents.

Parents. Parents of children enrolled in the study (i.e., the adult guardians responsible for child participants' primary caregiving) represented a second participant group. Two hundred and fourteen parents completed parent questionnaires; 95% were female. The mean age of the parents was 29.35 years. Forty-seven percent identified themselves as White, 26% as Hispanic/Latino, 16% as Black/African American, and 8% as "other." The majority (87.2%) were mothers, 4.7% were fathers, 3.3% were grandmothers, and 4.8% enjoyed another relationship to the child (e.g., grandfather, stepmother, foster mother). Ninety-eight percent received some form of public aid, such as welfare, Medicaid, child care or housing assistance, food stamps, or WIC. Twenty-two percent had not completed high school. Approximately 36% of the parents had been 18 or younger at the birth of their first child. Thirty-nine percent of the parents were the only person older than the age of 18 living in the home.

Head Start teachers. Twenty-nine Head Start teachers participated in the study. Twenty-four completed the teacher demographics questionnaire. All teachers held state-certified teaching endorsements in early childhood. All teachers had at least a bachelor's degree, and 12.5% held an advanced graduate degree. All were female, and their mean age was 36.05 years (SD = 11 years). Ninety-one percent self-reported as Caucasian and 9% as Hispanic/Latino. Teachers had an average of 112.71 months of experience working in early childhood (M = 9.4 years, SD = 99.97 months).

Measurement of Study Variables

The Devereux Early Childhood Assessment (DECA; LeBuffe & Naglieri, 1999) and the Social Competence and Behavior Evaluation short form (SCBE-30; LaFreniere & Dumas, 1996) were completed by teachers to evaluate the effects of the intervention on key dependent variables (i.e., social-emotional outcomes, behavioral concerns). Both measures have been used extensively in previous studies with Head Start children (e.g., Denham et al., 2003; George & Greenfield, 2005). The DECA is a 37-item measure designed to evaluate the social-emotional strengths of preschool children (aged 2-5 years). The teacher is advised to consider the child over the *past 4 weeks* as he or she rates the items. The DECA yields T scores (M = 50, SD = 10). The constructs measured by the DECA and the alphas for our sample are as follows: Initiative (12 items, α = .88) taps the child's ability to think and act independently; Self-Control (8 items, α = .91) reflects the child's ability to experience a range of emotions and to express emotions in appropriate ways; Attachment (8 items, α = .82) assesses strong positive social bonds between the child and adults; and Behavioral Concerns (10 items, α = .79) reflects a number of problematic behaviors exhibited by young children, including angry, aggressive, and destructive behavior and attention problems.

The SCBE-30 (LaFreniere & Dumas, 1996) was also used to measure social and behavioral competence. The SCBE-30 is intended to provide a teacher rating of a child's emotional and social competence in the context of a preschool, day care center, or Head Start program and is designed to capture the affective quality of the child's relationships with teachers and peers. The measure contains 30 items that are rated on a 6-point Likert scale (1 = *never*, 6 = *always*). Constructs measured on the scale (10 items each) are Social Competence (α = .91), which taps a broad range of behaviors designed to assess the positive qualities of a child's adaptation; Anxiety-Withdrawal (α = .85), which is composed of items describing anxious, depressed, isolated, and overly dependent behavior; and Anger-Aggression (α = .92), which assesses angry, aggressive, selfish, and oppositional behaviors.

In this investigation, we operationalized social competence as consisting of two distinct dimensions: interpersonal competence and behavioral concerns. The *interpersonal competence* dimension was measured using the DECA Attachment and Initiative subscales and the SCBE-30 Social Competence and Anxiety-Withdrawal scales. *Behavioral concerns* were assessed using the DECA Self-Control and Behavioral Concerns scales and the SCBE-30 Anger-Aggression subscale.

Procedures

Recruitment of participants and assignment to experimental condition. In the spring of an academic year, Head Start teachers were approached by members of the research team in a large staff meeting to introduce them to the project. The following fall, prior to the beginning of the preschool year, meetings were held with small groups of teachers to inform them of the general goals and expectations of the project, answer procedural questions, and solicit informed consent. Participation was voluntary, and teachers were assured that they were free to withdraw at any time without negative repercussions. Signed, informed, voluntary consent was attained. In nine cases, two or more Head Start classrooms were housed in the same building. Random assignment to the treatment or control condition was made at the building level to minimize contamination across experimental conditions.

Eligible parents in both the treatment and control groups received information on the project from their child's Head Start teacher. We were interested in determining the effects of the intervention implemented over 2 years during the course of a child's entire Head Start experience; thus, only children who were 3 years of age and eligible for 24 months of Head Start program services upon program entry were invited by teachers to be involved. All parents who met these criteria were invited to participate, typically in the fall semester of each academic year. Parents were informed that the study was interested in assessing certain teacher practices, and no unique parent trainings or additional meetings would be required. Parents were not made aware of their condition assignment. From the perspective

of the parent, the requirements for participation in the treatment and control groups were identical. Parents were further assured that their participation was voluntary, and their agreement to participate or decision to withdraw in no way affected their Head Start program services. Ninety percent of parents invited by Head Start teachers agreed to participate in the study. There were no differences in levels of consent between groups (i.e., treatment or control).

Upon receiving parents' verbal consent, a member of the research team contacted each interested parent and gathered informed written consent. Family assignment to the treatment or control condition was dependent on teacher assignment to condition; thus, all children and families with the same teacher were assigned to the same experimental condition, resulting in a hierarchically nested design. Children and families with a teacher in the control condition received business-as-usual services, which involved on average five home visits and monthly socializations each school year (see "Setting and Context"). Both English- and Spanish-speaking families were recruited for study participation. All consent, assessment, and intervention materials were translated into Spanish by native Spanish-speaking members of the research team using back-translation procedures.

Data were collected over a 2-year period for all participants, representing their entire experience in Head Start. Baseline or preintervention data were collected at the point at which the parent and child were first enrolled in Head Start and then collected in the fall and spring for two consecutive years for three cohorts of children and families. Arrangements were made to complete the assessments at a location convenient for the family, such as the children's centers or schools, other community locations (e.g., library study rooms), or the families' homes. Parents spent 25 to 40 minutes completing a questionnaire (including child and family demographic information) at each data collection point; they also took part in a video-recorded parent-child observation lasting from 8 to 30 min, depending on the age of the child. Bilingual English-/Spanish-speaking data collectors administered assessments with Spanish-speaking families. At each assessment occasion, families received a gift card to a local retailer. Demographic data from the parent questionnaire are used here.

At the time of each family assessment, teachers were provided with a questionnaire to complete on each child/family. Teachers completed the questionnaires independently within 2 weeks of the family assessment. The teachers then either returned the questionnaires to the researchers via mail or returned them to a research assistant directly. Completion time for the teacher questionnaire was approximately 20 minutes per child. Teachers were compensated for their time in the form of a monetary stipend.

Getting Ready intervention procedures. The Getting Ready intervention was structured to provide opportunities for professionals to support and enhance the quality of parent-child interactions and learning experi-

ences in daily routines and to create a shared responsibility between parent and professional to influence children's school readiness. Specifically, it was intended to (a) guide parents to engage in warm and responsive interactions with their child, support their child's autonomy, and participate in their child's learning; and (b) promote collaborative interactions among parents and teachers in support of children's learning and development at home and at school (Sheridan et al., 2008). Table 2 presents the strategies associated with the Getting Ready intervention.

The primary context for using the Getting Ready strategies was home visits conducted approximately five times per year and lasting approximately 60 minutes each. In addition, Head Start teachers interacted with parents using triadic and collaborative strategies during all socializations and parent conferences (Sheridan et al., 2008). The strategies allowed the Head Start teachers to (a) focus parents' attention on their child's strengths; (b) share and discuss observations about the child; (c) discuss developmental expectations (goals); (d) provide developmental information; (e) make suggestions; and (f) brainstorm collaboratively with parents around problems or issues related to the child's social, cognitive, or communicative development and learning. As part of their style of interacting with parents,

Table 2. Getting Ready Model Intervention Strategies

Establish parent-child and parent-professional relationship
- Establish a context for parent-child interaction
- Listen, respond to parent priorities, concerns, challenges

Share observations/knowledge of child over time
- Share/seek information about child's progress
- Affirm parents' insights and competent observations

Identify mutually agreed-upon developmental expectations for child
- Focus parents' attention on child strengths and developmental needs
- Share developmentally appropriate information

Share ideas and brainstorm methods for helping child meet expectations
- Mutually identify natural learning opportunities in the home
- Identify current and potential parent behaviors that can support targeted learning
- Make suggestions when necessary

Observe parent-child interactions and provide feedback
- Observe parent and child in meaningful context
- Identify current strengths related to developmental expectations
- Provide developmental information
- Model/suggest on-the-spot when necessary to support parent interactions with their child

Monitor the child's skill development and determine directions for continued growth
- Engage parent in noting child's progress and measuring progression towards individualized developmental expectations
- Discuss needed adjustments in interactions and/or learning opportunities
- Cycle to new developmental expectations and learning opportunities as needed

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teachers took opportunities to affirm the parents' competence in supporting or advancing the child's abilities, ask parents for their reflections and ideas related to the child's recent learning needs and interests, and provide feedback and *in vivo* suggestions as appropriate to draw the parents' attention to their own actions and resultant child behaviors or skills. Teachers also promoted parent-child interactions during home visits through modeling and engaging in mutual goal setting. A collaborative home-school plan was established that outlined goals for the child and specific practices for parents and teachers to use in their respective settings to promote the child's progress toward that goal.

Professional development: Training and coaching. Head Start teachers in the experimental group were initially introduced to the Getting Ready intervention via a 2-day training institute. The content of training was focused on helping early childhood professionals understand the Getting Ready model and strategies (see Table 2); the use of these strategies during home visits, socializations, and other interaction opportunities with families and children; and teachers' ability to integrate important family-centered practices into instruction. The sessions were led by key personnel from the research team. Retraining sessions were held with small groups of new teachers as they were enrolled in the study over the course of 4 years. Likewise, 1-day "booster sessions" were held for all teachers after 1 year of participation.

Control teachers also participated in training sessions to experimentally control for attention and to minimize awareness of group assignment. (Videotaping of home visits of control and experimental teachers occurred in part for these same reasons.) The content of training for control group participants involved relevant but not identical content and was child focused as compared to family and child focused as in the treatment group. The first day of training involved content related to best practices in general classroom-based curricular strategies, child instruction, and children's mental health. The second day focused on the experiences of children and families living in poverty to increase teachers' understanding of low-income children and to provide teachers with appropriate classroom strategies to support this group of children.

Head Start teachers in the experimental group were supported in the implementation of the Getting Ready intervention through formalized coaching with a project coach twice per month. Getting Ready coaching involved video-mediated feedback and reflection. Coaches were two females with master's degrees in a human services field and extensive experience in parent consultation and early childhood intervention and education. One 60-minute session each month was individualized, and one 90-minute session took place in a group format with three to five Head Start teachers. Coaching followed a session format involving initiation, observation/action, reflection, and evaluation (Hanft, Rush, & Shelden,

2004). In each session, the project coach focused on one or more specific Getting Ready strategies, asked reflective questions, highlighted professional strengths, and helped Head Start teachers set goals for strategy use in their work between coaching sessions. Control teachers continued to receive supervision on their work with families and children through agency-provided means, on average, monthly. Agency professional development was provided through workshops and in-services, and topics included issues such as curriculum implementation, effective field trips, classroom quality, health and safety concerns, technology, and early literacy and mathematics.

Fidelity of Intervention Implementation

Adherence to the general strategies of the Getting Ready intervention, the quality with which they promoted parent engagement, and the degree to which parents responded to efforts of the Head Start teacher (i.e., engaged with their child during home visits) were considered important indicators that the treatment was in effect (Dane & Schneider, 1998). Furthermore, assessment of the control group teachers was conducted to define unique program differences (Dane & Schneider, 1998; Durlak & DuPre, 2008). Twice per year, home visits of each teacher across treatment and control groups were digitally video-recorded. The *Getting Ready Coding Definition Guide* (adapted by the research team from the Home Visit Observation Form; McBride & Peterson, 1997) was used by trained coders to reliably record teachers' fidelity in implementing a triadic and collaborative approach and parents' responsiveness to the intervention within home visits. A partial-interval recording for every 1-minute segment of the visit (range = 40-90 min) was used to obtain (a) the rate of Getting Ready strategies used by the Head Start teacher (adherence) and (b) the rate of interactions between the parent and child (participant responsiveness). In addition, teachers' effectiveness in promoting parent engagement was rated every 10 minutes on a 4-point Likert-type scale (1 = *low*, 4 = *high*). For training purposes, all coders were required to independently code at least three sample visits and to obtain an interrater agreement of 85% before proceeding (Suen & Ary, 1989). In cases in which interrater agreement fell below 85%, a refresher course in coding was conducted.

Of the 88 home visit tapes coded, 31% were coded by two observers for interrater reliability purposes. Interrater agreement for the rate of strategy use was 95.04 (range = 89%-100%). Interrater reliability for the rate of parent-child interactions was 84.88% (range = 63%-97%). For the global Likert-type scale (i.e., teacher effectiveness), interrater agreement within 1 point was 97.36% (range = 66%-100%; exact agreement = 72.96%). A full description of procedures used to assess intervention implementation fidelity is available in Knoche, Sheridan, Edwards, and Osborne (2008).

Experimental Design and Analysis Plan

This investigation used a 4-level complex sampling design with repeated observations (Level 1) nested within each child (Level 2), children nested within teachers or classrooms (Level 3), and classrooms nested within schools or programs (Level 4). Because random assignment to experimental condition occurred at the teacher/classroom level, this can also be classified as a cluster randomized trial with repeated measurements.

The impact of the Getting Ready intervention on interpersonal competence and behavioral concerns was analyzed using multilevel modeling (*MLM;* Raudenbush & Bryk, 2002; Snijders & Bosker, 1999). This was accomplished by using a general linear mixed model implemented through SAS PROC MIXED (Singer, 1998). Final parameter estimates for both fixed and random effects were obtained through maximum likelihood (ML) estimation using the Kenward-Rogers method for determining the denominator degrees of freedom.

Fixed effects. All tests of fixed effects were two-tailed hypothesis tests with the respective measure of interpersonal competence or behavioral concerns from the DECA or SCBE-30 as the outcome measure predicted by (a) experimental condition, (b) time, and (c) the Experimental Condition × Time interaction. Data from each participant were collected longitudinally twice a year over 2 years at individually varying and unequally spaced measurement occasions; thus, time was centered to reflect the number of months since randomization. Experimental condition was assigned at the classroom/teacher level and included a dummy-coded (0 = control, 1 = treatment) contrast variable. These choices for coding time and condition lead to an intuitive interpretation of the model parameters. The intercept is interpreted as the average level of the outcome variable at randomization for the control group. The time effect is the average rate of change in the outcome variable per month over the entire 2-year study participation period for the control group. The condition effect is the *mean difference* in outcome levels at randomization between the treatment group and the control group. Finally, the Condition × Time interaction effect is interpreted as the *mean difference* in outcome rate of change between the treatment and control groups.

Random effects. MLM was chosen as the analysis paradigm over other procedures appropriate for repeated measures data because it allows for modeling of individual differences in what occurs over the repeated measures. These individual differences are referred to as *random effects* in the multilevel and *mixed effects paradigms* as applied in this study. The random effects portion of all models featured an unstructured between-subject covariance matrix with a random intercept variance, a random slope variance for time, and a covariance between intercept and time. The within-subjects

error covariance matrix was modeled with an independence structure, resulting in a single residual error variance. The random intercept is interpreted as the between-subject variability in outcome levels at randomization (not all participants started at the same level), and the random slope is the between-subject variability in the rate of change in outcomes that occurs during the study (not all participants change at the same rate). The covariance is the relationship between a child's outcome level at randomization and his or her rate of change during study participation. Finally, the within-subjects error is the average mis-fit of the model at any given measurement occasion.

Random effects were also included to account for between-school and between-teacher variability. However, all school-level random effects were nonsignificant, indicating no variability in outcomes due to between-school differences. Consequently, the random intercept for school was dropped

Table 3. Means (*SD*) for Social-Emotional Competencies and Behavioral Concerns Over Time Across Experimental and Control Conditions

Condition	Time 1	Time 2	Time 3	Time 4
	Interpersonal competence			
DECA Initiative[a]				
Experimental	48.48 (10.28)	55.49 (9.02)	59.35 (9.39)	62.41 (8.74)
Control	50.15 (9.35)	55.55 (9.21)	58.39 (8.49)	60.24 (10)
DECA Attachment[a]				
Experimental	50.3 (9.48)	54.85 (9.92)	57.29 (9.36)	60.03 (9.11)
Control	52.24 (10.65)	55.99 (11.71)	54.09 (10.18)	57.27 (11.6)
SCBE Anxiety-Withdrawal[b]				
Experimental	2.09 (0.84)	1.75 (0.66)	1.74 (0.56)	1.6 (0.54)
Control	1.94 (0.68)	1.92 (0.75)	1.87 (0.65)	1.79 (0.76)
SCBE Social Competence[b]				
Experimental	3.51 (0.94)	4.06 (0.92)	4.35 (0.83)	4.73 (0.8)
Control	3.59 (0.92)	4.14 (0.95)	4.34 (0.98)	4.63 (1.03)
	Behavioral concerns			
DECA Self-Control[a]				
Experimental	51.28 (10.59)	55.08 (9.92)	57.49 (9.3)	60.13 (8.77)
Control	51.41 (10.58)	54.66 (11.22)	56.84 (10.53)	58.84 (10.24)
DECA Behavioral Concerns[a]				
Experimental	49.81 (9.22)	47.4 (9.47)	46.74 (9.73)	45.64 (9.82)
Control	50.63 (9.03)	48.93 (9.18)	47.28 (9.31)	45.55 (10.09)
SCBE Anger-Aggression[b]				
Experimental	1.98 (0.86)	1.82 (0.81)	1.83 (0.72)	1.68 (0.65)
Control	1.99 (0.92)	1.98 (0.84)	1.81 (0.74)	1.65 (0.61)

DECA = Devereux Early Childhood Assessment
SCBE = Social Competence and Behavior Evaluation
a. *T* scores with $M = 50$, $SD = 10$.
b. Raw scores on a scale of 1 (*low*) to 6 (*high*).

from all analyses. Between-teacher variability was observed at baseline, but not in the rate of change, so only a random intercept for teacher was included.

Control for multiple tests. We previously defined two distinct conceptual dimensions of social competence, each measured by several variables. Specifically, interpersonal competence was assessed using four variables, and behavioral concerns was measured using three variables. To ensure that our findings did not capitalize on chance when making statistical inferences, we used the conceptual operationalization of social competence to define two "families" of tests and controlled the family-wise error rate (FWER) at the $\alpha = .05$ level within each dimension. This was accomplished through the Holm-Bonferroni method (Holm, 1979), which, as a closed-testing procedure, is considered a strong control for FWER.

Intention to treat (ITT). This study used an ITT strategy to ensure that the analytic models reflected the real-world application of the Getting Ready intervention. An ITT strategy allows for the comparison of participants in the condition to which they were originally assigned regardless of whether they received full fidelity of implementation or withdrew from the study. An ITT approach was ideal in this study because intervention implementation fidelity was not perfect, control participants may have been exposed to some aspects of the Getting Ready intervention as part of business-as-usual practices (contamination), and study attrition due to families leaving Head Start or moving to a new location was consistent with the transient nature of the targeted population and could be viewed as ignorable missingness. The estimated ITT treatment effect tends to be conservative because of noncompliance (i.e., nonfidelity and contamination) and attrition; an ITT strategy provides unbiased estimates of treatment effect, provides adequate Type I error control, and reflects a realistic clinical situation (Lachin, 2000).

Handling of missing data. Participant attrition resulted in missing data that were accounted for statistically using full information maximum likelihood estimation (FIML; Enders, 2001), which is consistent with the ITT strategy. FIML assumes that missing data are ignorable (vs. non-ignorable) and at least missing at random (MAR)—preferably missing completely at random (MCAR). Since an inherent assumption in developing statistical models is that the model itself is complete, the MCAR assumption suggests that the missing values are not associated with any other variables, and the MAR assumption suggests that the missing values may be related to other variables that are included in the analysis. Although an assumption of MAR is the more realistic of the two, it is not verifiable (Potthoff, Tudor, Pieper, & Hasselblad, 2006).

FIML was deemed preferable to other approaches for accounting for missing data primarily because of its ability to make use of all available

data and its ease of implementation through the general linear mixed model framework implemented when using SAS PROC MIXED. FIML retains in the analysis all participants who begin the study (i.e., were assessed on at least the first occasion) in contrast to procedures such as listwise deletion, with which any participant with a missing observation would be analytically lost. FIML incorporates the analytic uncertainty introduced by the loss of information due to attrition by estimating sufficient statistics (means [μ] and variances/covariances [Σ]) from the raw *incomplete* data via the expectation maximization (EM) algorithm in the iterative estimation process. FIML then maximizes a likelihood function that is the sum of casewise likelihood functions in which each case- or participant-specific likelihood function can be composed of different amounts of information. Thus, individuals with missing data at later time points still provide information for the estimation of overall effects by borrowing information from participants with complete data (Snijders & Bosker, 1999). Although 108 participants left Head Start—and consequently the study—because they had *some* data, 100% of participants contributed to the analysis; thus, there was only 22% missing information.[3]

RESULTS

The impacts of attrition and establishing fidelity of intervention implementation were considered prior to evaluation of the intervention in an effort to understand the context of the intervention and its effects on children's social competence.

Analyses of Context

Attrition. Attrition is expected in a 2-year study of high-risk children and families. In this study, participants withdrew from the study only when they withdrew from the Head Start program, and this typically happened during the transition between the first and second preschool years. In other words, no families remaining in the Head Start program chose to withdraw from the study. The difference in attrition rates between the two experimental groups (control = 52.9%, treatment = 45.8%) was not statistically significant, $\chi^2(1, N = 220) = 1.128$, $p > .05$. Additional nonsignificant chi-square tests indicated that those participants who left the program, and thus the study, did not differ significantly from those who remained in the study on key demographic characteristics such as gender, $\chi^2(1, N = 220) = 0.570$, $p > .05$; ethnicity, $\chi^2(2, N = 220) = 1.272$, $p > .05$; or risk status, $\chi^2(1, N = 220) = 2.545$ $p > .05$. Furthermore, nonsignificant t tests indicated that those who left the study did not differ significantly at baseline from those

3. That is, 194 missing observations out of 880 total observations per outcome (22%), where 880 = 220 participants × 4 time points of data.

who remained on the seven outcome variables of interest in this study: DECA Initiative, $t(204) = 0.35$, $p = .73$; DECA Self-Control, $t(204) = 0.27$, $p = .79$; DECA Attachment, $t(204) = 0.83$, $p = .41$; DECA Behavioral Concerns, $t(201) = -0.26$, $p = .79$; SCBE Social Competence, $t(203) = 0.67$, $p = .5$; SCBE Anxiety-Withdrawal, $t(203) = -1.73$, $p = .09$; SCBE Anger-Aggression, $t(202) = -0.39$, $p = .7$.

Since the MAR assumption necessary for using FIML is not testable, we had to rely on deductive reasoning that we met the assumption that any explanatory variables for missingness were included in the analysis. Our decision to rely on FIML to account for missing data was based on (a) the reported chi-square results showing no difference in attrition between experimental conditions and no differences in those who left the study based on key demographics, (b) the knowledge that missing data were due to participants and their families leaving the Head Start program and not the study itself, and (c) the availability of previous outcomes on all participants (93.6% of participants had at least two repeated observations) for use as predictors of future missing observations (Carpenter, Pocock, & Lamm, 2002).

Fidelity of intervention implementation. Fidelity of teachers' implementation of the Getting Ready intervention and parents' responsiveness during home visits provided evidence that, in general, the Getting Ready intervention was in effect during home visits conducted by teachers in the experimental group in a manner consistent with its intent (Dane & Schneider, 1998) and in a manner that was clearly distinguishable from business as usual (i.e., the control group). Teachers in the treatment group were observed using Getting Ready strategies over an average of 58.6% of intervals during home visits (vs. 44.2% for teachers in the control group), $t(25) = 2.34$, $p < .05$.[4] Furthermore, over several intervals, teachers conducted extensions of Getting Ready strategies (e.g., observation of parent-child activity) that were not captured in the coding system. Teachers' effectiveness at initiating parental interest and engagement was rated as 2.9 (out of 4), on average, indicating relatively high levels of quality in initiating parental interest and engagement with children. Teachers in the control condition were rated significantly lower, with an average effectiveness rating of 1.9, $t(19.6) = 4.87$, $p < .05$. In addition, parents in the experimental condition were observed interacting with their children during 66.3% of the intervals (close to 40 minutes in a 60-minute home visit), significantly more than parents in the control condition, who interacted with their children for approximately 26 minutes of an hour-long visit (43.0%), $t(15.8) = 3.01$, $p < .05$.

4. Note that 2 of the 29 participating teachers did not have fidelity data, so $n = 27$ and $df = 25$ assuming homogeneity of variances. For subsequent t tests, if homogeneity of variances could not be assumed according to Levene's test, then reported degrees of freedom are adjusted accordingly.

Analyses of Social-Emotional Competence

Teacher perceptions of participating children's social-emotional competence and behavioral concerns as a function of the Getting Ready intervention were assessed with the DECA and SCBE-30. Descriptive statistics across the interpersonal competence and the behavioral concerns scales are in Table 3. Parameter estimates for the Condition ×Time interaction effect, condition and time main effects, as well as standardized effect sizes for the interaction term are presented in Table 4.

Interpersonal competence. Significant differences were observed between treatment and control participants in the rate of change over time on teacher reports for certain interpersonal competencies (i.e., attachment, initiative, and anxiety/withdrawal). Specifically, preschool children in the Getting Ready intervention demonstrated *significantly enhanced gains in the level of attachment behaviors with adults* over time compared to controls as measured by the DECA, $\gamma = 0.29$, $t(160) = 2.88$, $p < .05$, $d = 0.75$ (see Figure 1). Because we used a linear mixed model framework that accounted for clustering, effect size was calculated as the ratio of the group difference in linear change (γ) to the standard deviation of the slope values. This extension was necessary and preferred over traditional procedures that consider mean group differences divided by a within-group or control group standard deviation because of the clustering present in our data (Raudenbush & Liu, 2001).

The parameter estimate for the Condition × Time interaction, γ, can be interpreted as the difference in the per-month growth rate between the intervention and control groups, since time was centered to reflect the number of months since randomization. Thus, whereas the control group showed some evidence of improvement (as might be expected given their enrollment in Head Start), the intervention group gained, on average, 0.29 points *more* per month (and three fourths of a standard deviation overall over the entire 2-year intervention period) than control children on the DECA Attachment scale. Likewise, significantly different rates of change were seen in children in the treatment group relative to controls in the area of *initiative*, $\gamma = 0.19$, $t(156) = 2.12$, $p < .05$, $d = .56$ (see Figure 2), for a net gain of more than one half of a standard deviation relative to control children over 2 years. Concomitantly, relative to controls, preschool children in the Getting Ready treatment group demonstrated a *significantly greater reduction in anxiety/withdrawal behaviors* over time as measured on the SCBE-30, $\gamma = -0.02$, $t(160) = -2.91$, $p < .05$, $d = -.74$ (see Figure 3), for a net benefit of three fourths of one standard deviation relative to controls. Visual inspection of the Condition × Time interaction effect presented in Figure 3 suggests a much smaller effect than those from the DECA (see Figures 1 and 2), but this is attributable to the smaller scale of the SCBE-30. No differences were observed in the broad Social Competence factor of the SCBE-30, $\gamma = 0.00$, $t(152) = .58$, $p > .05$, $d = 0.17$.

Table 4. Experimental Condition × Time Interaction and Main Effects of the Getting Ready Intervention

Effect	Estimate	SE	*df*	*t*	*p*	ES
			Interpersonal competence			
DECA Initiative						
Intercept (C)	50.83	0.98	218.62	51.90	<.01	
Condition (ΔE-C)	-1.50	1.32	213.83	-1.13	.26	
Time (C)	0.59	0.07	167.85	8.81	<.01	
Condition × Time (ΔE-C)	0.19	0.09	156.41	2.12	.04	0.56
DECA Attachment						
Intercept (C)	52.67	1.01	219.99	51.98	<.01	
Condition (ΔE-C)	-1.99	1.37	214.53	-1.46	.15	
Time (C)	0.26	0.08	172.80	3.35	<.01	
Condition × Time (ΔE-C)	0.29	0.10	160.30	2.88	.00	0.75
SCBE Anxiety-Withdrawal						
Intercept (C)	1.94	0.07	217.06	26.29	<.01	
Condition (ΔE-C)	0.08	0.10	211.35	0.77	.44	
Time (C)	-0.01	0.01	174.13	-1.21	.23	
Condition × Time (ΔE-C)	-0.02	0.01	160.86	-2.91	<.01	-0.74
SCBE Social Competence						
Intercept (C)	3.65	0.09	219.80	39.72	<.01	
Condition (ΔE-C)	-0.10	0.12	213.94	-0.78	.44	
Time (C)	0.06	0.01	166.28	9.91	<.01	
Condition × Time (ΔE-C)	0.00	0.01	152.36	0.58	.57	0.17
			Behavioral concerns			
DECA Self-Control						
Intercept (C)	51.67	1.06	215.83	48.73	<.01	
Condition (ΔE-C)	-0.05	1.43	210.74	-0.04	.97	
Time (C)	0.43	0.07	163.14	6.16	<.01	
Condition × Time (ΔE-C)	0.02	0.09	150.11	0.24	.81	0.07
DECA Behavioral Concerns						
Intercept (C)	50.60	0.94	211.52	54.09	<.01	
Condition (ΔE-C)	-1.16	1.26	207.35	-0.92	.36	
Time (C)	-0.33	0.08	177.13	-4.19	<.01	
Condition × Time (ΔE-C)	0.04	0.10	168.05	0.36	.72	0.08
SCBE Anger-Aggression						
Intercept (C)	2.01	0.09	217.12	22.47	<.01	
Condition (ΔE-C)	-0.04	0.12	212.68	-0.35	.73	
Time (C)	-0.02	0.01	190.10	-2.96	<.01	
Condition × Time (ΔE-C)	0.00	0.01	179.02	0.13	.89	0.03

ES = effect size
DECA = Devereux Early Childhood Assessment
C = control group
E = experimental group
SCBE = Social Competence and Behavior Evaluation

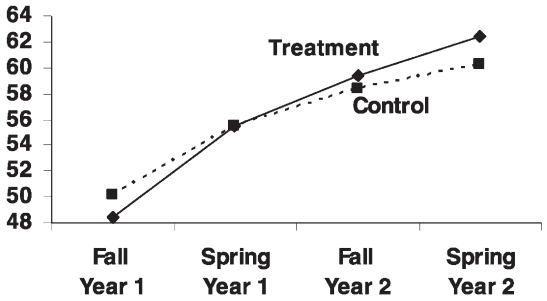

Figure 1. Experimental Condition × Time interaction for child initiative as assessed with the Devereux Early Childhood Assessment. Scores are *T* scores with *M* = 50, *SD* = 10.

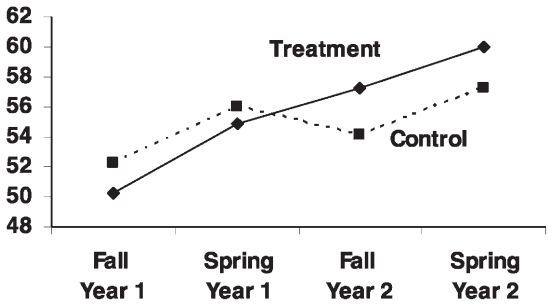

Figure 2. Experimental Condition × Time interaction for child attachment as assessed with the Devereux Early Childhood Assessment. Scores are *T* scores with *M* = 50, *SD* = 10.

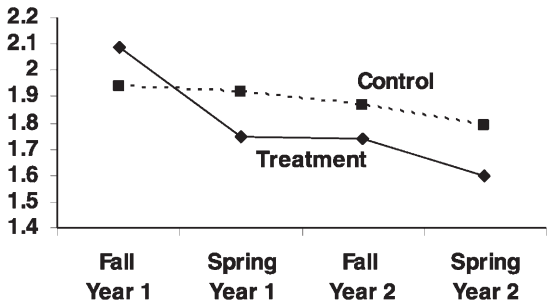

Figure 3. Experimental Condition × Time interaction for child anxiety/withdrawal as assessed by Social Competence and Behavior Evaluation-30. Scores are raw scores rated on a scale of 1 (*low*) to 6 (*high*).

There were no mean baseline differences between treatment and control participants for any of the four interpersonal competence outcomes (all *p*s > .15; see Condition effects in Table 4). This validates the randomization

process and suggests that both groups were indeed equal prior to the treatment condition receiving the Getting Ready intervention.

Behavioral concerns. No statistically significant differences between groups over time were noted for behavioral concerns as a function of the Getting Ready intervention (see Table 4). That is, there were no significant differences in the rate of change between participants' anger/aggression, self-control, or behavioral problems as a function of their participation in the treatment group. There were also no significant differences between groups at baseline for any of the behavioral concerns outcome variables, further validating the randomization process.

DISCUSSION

This study reports the results of a relationship-based, ecological (parent engagement) intervention aimed at enhancing school readiness among impoverished preschool children attending a Head Start program as indicated by children's social-emotional well-being. Findings suggest that children in the experimental group demonstrated relative gains superior to the control group in areas associated with interpersonal competence but not targets specific to behavioral concerns. That is, the added value of the Getting Ready intervention, beyond gains that could be expected as a function of involvement in Head Start, appears to be related positively to behaviors that bring a child into close contact and communication with others. Thus, participation in the Getting Ready intervention appears to positively contribute to children's school readiness by promoting the development of interpersonal competencies.

The Getting Ready intervention targeted parent engagement, defined in terms of warmth and sensitivity, support for autonomy, and participation in learning. The social-emotional outcomes suggested in this investigation map generally well onto these three dimensions of engagement. First, compared to the control group, children in the Getting Ready intervention group demonstrated *enhanced levels of attachment behavior* with adults over time, including teachers. The intervention effect fostering a child's attachment with adults is important given the critical role of secure attachments in young children's lives (Bus & van IJzendoorn, 1988). Second, significantly greater *increases in initiative over time* were demonstrated by children in the experimental condition relative to control children. This finding is not surprising, as previous research has also demonstrated that children whose mothers provide support for autonomy tend to display more adaptive levels of social assertiveness and self-directedness in social and play interactions at preschool (Denham et al., 1991) than children whose mothers display authoritarian or passive parenting patterns. Considering that more than one third of kindergarten teachers reported that half of their in-

coming students had difficulties working independently (Rimm-Kaufman et al., 2000), interventions that aid in the development of autonomy and related approaches to learning are highly relevant and are increasingly emphasized in current early childhood practice (Hyson, 2008).

Third, children in the Getting Ready treatment group experienced a *reduction in teacher-reported measures of anxiety/withdrawal* compared to children in the control group. Similar to the effects for attachment and initiative, it is possible that the Getting Ready intervention was effective at promoting children's comfort in interacting socially in generally uninhibited and independent ways, possibly through enhanced attachment and autonomy. The ability of children to engage and interact effectively at school is significantly related to learning outcomes (Raver & Knitzer, 2002). Effective transitions to kindergarten may be hindered by difficulties working in group settings (Rimm-Kaufman et al., 2000), which may impair children's abilities to benefit from structured and social learning opportunities. Our findings suggest the Getting Ready intervention, which focused on relationships characterized as warm and sensitive and as supportive of children's autonomy and learning, may successfully impact social-emotional readiness behaviors.

Conversely, there were no significant differences between the treatment and control group participants over time in terms of behavioral concerns, including measures of anger/aggression and self-control, above and beyond the effects seen from enrollment in Head Start. This result is somewhat surprising given previous research demonstrating the association between sensitive, supportive parenting and self-control in early childhood (Eisenberg, 2002; Fox & Calkins, 2003). Our intervention did not focus specifically on addressing challenging behaviors, which are proving to be prominent in early childhood settings. The Getting Ready intervention, however, may be more effective at promoting initial positive growth in certain types of children (e.g., those with internalizing features) than others (e.g., those with disruptive behaviors) or for certain types of social-emotional indicators (e.g., affective vs. behavioral domains). For example, enhanced levels of attachment with adults may have a greater impact on activating and engaging anxious/withdrawn children than they do on subduing anger and aggression or other externalizing behavior problems. Follow-up research will be important to ascertain whether positive social-emotional outcomes are maintained and whether additional behavioral outcomes may be realized over time for parents and children involved in the intervention.

Other interventions that target similar parenting behaviors and child outcomes have yielded similar effect sizes. For example, Webster-Stratton and Herman (2008) reported the effects of the Incredible Years program on internalizing and depressive symptomatology in preschool children. Over the course of this 12-week group-based parenting intervention (wherein parents were taught via lecture and video models effective methods of play, praise and reward, effective limit setting, and handling misbehavior), estimated

effects based on mothers' reports ranged from d = .37 (internalizing symptoms) to .47 (depressive mood). For children who demonstrated elevated levels of depressive symptoms at baseline, effect sizes for internalizing and depressive symptoms were d = .55 to .69 (Webster-Stratton & Herman, 2008). Landry, Smith, Swank, and Guttentag (2008) tested the effects of a responsive parenting intervention (i.e., the Playing and Learning Intervention-Preschool). The highly structured 11-session intervention targeted specific parent behaviors: contingent responsiveness, warm sensitivity, positive affect, focusing interest, and communication support. A randomized trial found positive effects for several child outcomes, with effect sizes of d = .30 for cooperation with mother and .32 for social engagement (eye gaze, positive affect, and communication) relative to a control group. Our relatively moderate effect sizes may be the product of the individualized nature of the Getting Ready intervention compared to other interventions. Specifically, it is possible that the individualized nature of our Getting Ready process—including careful observation, identification of targets based on child/family need rather than scripted interventions, targeted strategies around family context and parent/child strengths, and brainstorming of methods to support the development of individualized child goals—was effective at producing particularly meaningful clinical outcomes for this sample.

Although the findings are encouraging, it is possible that the intervention per se, and the concomitant theory behind its effects, was not fully responsible for the observed outcomes. Alternative processes or mechanisms may have been at work, and we leave room for considering such possibilities. For example, teachers' knowledge of the intervention and other variables operating in preschool classrooms may have affected child outcomes in nonspecified ways. It is possible that teachers' heightened awareness of relationships created conditions in which they indirectly strengthened teacher-child relationships in classrooms or created classroom climates that promoted responsive interactions and support. The coaching process could have allowed teachers a chance to debrief and work through issues with families that would have allowed them to devote more attention to enhancing relationships with children. Similarly, it may be the case that teachers intentionally promoted positive dyadic exchanges in child-child interactions or healthy social relationships beyond the parent-child relationships. Instructional practices in the classroom were not assessed but could have included formal efforts at building positive social skills.

Limitations

Despite the preliminary encouraging findings from the present study, a number of limitations are apparent that limit the generalizability of the results. First, the results reported here include English- and Spanish-speaking children together, despite the possibility that some differences in outcomes between the groups may have been present. Unfortunately, our sample of

preschool Spanish-speaking children was relatively small, precluding our ability to determine the intervention's effects over an extended period of time for this sample alone. The Getting Ready intervention is intended to allow teachers to elicit individual families' goals and priorities in a family-centered manner (Dunst, Trivette, & Deal, 1988), including those goals and priorities related to cultural values. However, the degree to which we were able to deliver the intervention in a truly culturally sensitive manner is unknown and is the projected focus of future research. Furthermore, the relevance or manifestation of the parenting constructs we promoted (i.e., warmth/sensitivity, support for autonomy, participation in learning) may be different across cultures (Ispa et al., 2004). More research on the possible moderating effect of language is needed to discern how these constructs relate to important family and child outcomes for Spanish-speaking children and children from other diverse backgrounds.

A second limitation of this study concerns the source of available outcome data. Child outcomes were assessed via teacher report only, with no independent, objective ratings of child social behaviors. Although teachers in both conditions received training at the outset, teachers in the treatment group experienced greater levels of interaction with project staff through coaching, and it is possible that they were aware of their assignment to an active treatment group. Thus, their ratings on child social-emotional measures may have been influenced by their knowledge of the parent-child intervention and not their observations of the child's social behaviors per se. It is worthy to note that teachers were trained to encourage parents to engage in positive parent-child interactions and learning; they did not deliver a specific social-emotional intervention or receive training on altering their interactions with children. Furthermore, the likelihood that teachers' ratings were affected by knowledge of the intervention is reduced because not all outcome measures (i.e., behavioral concerns) were systematically affected.

The third, related, limitation concerns the lack of outcome data in more than one setting or over time. Beyond the limitations associated with a single-method, single-source approach to data collection, it is possible that the Getting Ready intervention may have produced different outcomes for children's social-emotional functioning across settings (e.g., home and school). The current analyses point to the effects of the Getting Ready intervention at school only via one respondent (teacher) and do not allow us to conclude that the intervention had generalizable effects across settings within which children interact socially, including home and community. Assessment of treatment effects outside of school would allow us to gauge the effects of the intervention across contexts.

Fourth, data on parent behaviors outside of home visits were not available, so we are unable to conclude that changes in children's social-emotional competencies were a result of changes in parenting or parent-child interactions. Some evidence of differences in behaviors across experimental and control parents is available in our analyses of parent behaviors dur-

ing home visits, during which we noted significantly more interaction with children among parents in the treatment group than in the control group. A fifth limitation concerns the lack of follow-up data on children as they transitioned to kindergarten. The actual effects of the intervention as children transitioned into formal school settings is still being assessed. Finally, the specific subgroup of children with special needs was not investigated independently. The unique effects of the intervention on this group of children and families needs to be investigated further.

Future Research Directions

A number of important research directions are evident based on these preliminary results. The findings shed a promising light on the effects of the Getting Ready intervention on preschool children's social-emotional functioning, including the dimensions of interpersonal competencies and behavioral concerns. Targeted outcomes of the intervention across other developmental domains, including language, academic learning, and approaches to learning, are still being investigated. Likewise, the efficacy of the Getting Ready intervention for infant/toddler social-emotional development is unknown and is the subject of concurrent investigation. Given the heightened interest in infant mental health (Administration for Children & Families, 2000; Knitzer, 2007) and the documented correlates with parental attachment (National Scientific Council on the Developing Child, 2004; Sroufe, Egeland, Carlson, & Collins, 2005), we expect that the Getting Ready intervention will yield encouraging effects for infants/toddlers who are impoverished or who receive services based on familial or developmental risk.

Potential moderators of the Getting Ready intervention have not yet been explored. As with any intervention, it is expected that the effects of the Getting Ready intervention are dependent upon certain teacher, child, family, or ecological/environmental conditions. Variables that may moderate the effects of the Getting Ready intervention have not been investigated. For example, teacher variables (e.g., stress, beliefs regarding parental roles in early education, agency support) and parent variables (e.g., depression, self-efficacy, role construct) may moderate the effects of the Getting Ready intervention and need to be evaluated to better understand its potential impact.

The effects of the Getting Ready intervention across multiple ecological contexts should be explored. Specifically, changes in parent practices and within the home environment represent potential areas in which effects may be observed. Direct effects on parent-child interactions, and long-term parental involvement in education as a function of exposure to the Getting Ready intervention in the preschool years, need to be investigated. Finally, the specific mechanisms or pathways by which the Getting Ready intervention operates have not been determined, and many potential explanations are possible. Consistent with our hypotheses, it is possible that parent prac-

tices in natural settings, changes in the home environment, or engagement in generalized parent-child interactions may mediate the effects of the Getting Ready intervention. It is noteworthy that parents in the experimental group demonstrated significantly greater levels of engagement and interacted more frequently with their children during home visits than control parents. Whether the Getting Ready intervention acts by enhancing the frequency or quality of parent-child interaction is not yet clear and is the topic of future explorations. Understanding the mechanisms by which the Getting Ready intervention exerts its influence will allow us to target specific intervention points with greater precision.

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REFERENCES

Ackerman, B. P., Kogos, J., Youngstrom, E., Schoff, K., & Izard, C. (1999). Family instability and the problem behaviors of children from economically disadvantaged families. *Developmental Psychology, 35,* 258–268.

Administration for Children & Families. (2000). *A commitment to supporting the mental health of our youngest children.* Accessed August 4, 2008 at http://www.acf.hhs.gov/programs/opre/ehs/mental_health/reports/imh_report/imh_report_title.html

Administration for Children & Families. (2005). *Head Start impact study: First year findings.* Accessed February 13, 2008 at http://www.acf.hhs.gov/programs/opre/hs/impact_study/reports/first_yr_finds/firstyr_finds_ title.html

Ainsworth, M. D., Bell, S. M., & Stayton, D. J. (1972). Individual differences in the development of some attachment behaviors. *Merrill-Palmer Quarterly, 18,* 123–143.

Bronfenbrenner, U. (1979). *The ecology of human development: Experimental by nature and design.* Cambridge, MA: Harvard University Press.

Brooks-Gunn, J., Rouse, C. E., & McLanahan, S. (2007). Racial and ethnic gaps in school readiness. In R. C. Pianta, M. J. Cox, & K. L. Snow (Eds.), *School readiness and the transition to kindergarten in the era of accountability* (pp. 283–306).

Bus, A. G.,&van IJzendoorn, M. H. (1988). Mother–child interactions, attachment, and emergent literacy: A cross-sectional study. *Child Development, 59,* 1262–1273.

Carpenter, J., Pocock, S., & Lamm, C. J. (2002). Coping with missing data in clinical trials: A model-based approach applied to asthma trials. *Statistics in Medicine, 21,* 1043–1066.

Chatterji, M. (2006). Reading achievement gaps, correlates, and moderators of early reading achievement: Evidence from the Early Childhood Longitudinal Study (ECLS) kindergarten to first grade sample. *Journal of Educational Psychology, 98,* 489–507.

Christenson, S. L., & Sheridan, S. M. (2001). *Schools and families: Creating essential connections for learning.* New York: Guilford Press.

Clark, K. E., & Ladd, G. W. (2000). Connectedness and autonomy support in parent–child relationships: Links to children's socioemotional orientation and peer relationships. *Developmental Psychology, 36,* 485–498.

Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and secondary prevention: Are implementation effects out of control? *Clinical Psychology Review, 18,* 23–45.

Denham, S., Blair, K., DeMulder, E., Levitas, J., Sawyer, K., Auerbach-Major, S., et al. (2003). Preschool emotional competence: Pathway to social competence? *Child Development, 74,* 238–256.

Denham, S. A., Renwick, S. M., & Holt, R. W. (1991). Working and playing together: Prediction of preschool social-emotional competence from mother–child interaction. *Child Development, 62,* 242–249.

Denham, S. A., & Weissberg, R. P. (2004). Social–emotional learning in early childhood: What we know and where to go from here. In E. Chesebrough, P. King, T. P. Gullotta, & M. Bloom (Eds.), *A blueprint for the promotion of prosocial behavior in early childhood* (pp. 13–50). New York: Kluwer Academic/Plenum.

Downer, J., & Pianta, R. (2006). Academic and cognitive functioning in first grade: Associations with earlier home and child care predictors and with concurrent home and classroom experiences. *School Psychology Review, 35,* 11–30.

Duncan, G., & Brooks-Gunn, J. (1997). *Consequences of growing up poor.* New York: Russell Sage Foundation.

Dunst, C. J., Trivette, C. M., & Deal, A. G. (1988). *Enabling and empowering families: Principles and guidance for practice.* Cambridge, MA: Brookline Books.

Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: A review of reserach on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology, 41,* 327–350.

Early, D. M., Pianta, R. C., Taylor, L. C.,&Cox, M. J. (2001). Transition practices: Findings from a national survey of kindergarten teachers. *Early Childhood Education Journal, 28,* 199–206.

Edwards, C. P., Sheridan, S. M., & Knoche, L. (in press). Parent–child relationships in early learning. In B. McGaw & P. Peterson (Eds.), *International encyclopedia of education.* Oxford, England: Elsevier.

Eisenberg, N. (2002). Emotion-related regulation and its relation to quality of social functioning. In W. W. Hartup & R. A. Weinberg (Eds.), *The Minnesota Symposia of Child Psychology: Vol. 32. Child psychology in retrospect and prospect* (pp. 133–171). Mahwah, NJ: Erlbaum.

Emde, R. N., & Robinson, J. L. (2000). Guiding principles for a theory of early intervention: A developmental–psychoanalytic perspective. In J. P. Shonkoff & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (pp. 160–178). New York: Cambridge University Press.

Enders, C. K. (2001). The performance of the full information maximum likelihood estimator in multiple regression models with missing data. *Educational and Psychological Measurement, 61,* 713–740.

Espinosa, L. M. (2002). The connections between social–emotional development and literacy. *Kauffman Early Education Exchange, 1,* 31–44.

Fan, X., & Chen, M. (2001). Parental involvement and students academic achievement: A meta-analysis. *Educational Psychology Review, 13,* 1–22.

Fantuzzo, J. F., Bulotsky-Shearer, R., McDermott, P. A., McWayne, C., Frye, D., & Perlman, S. (2007). Investigation of dimensions of social–emotional classroom behavior and school readiness for low-income urban preschool children. *School Psychology Review, 36,* 44–62.

Foster, M. A., Lambert, R., Abbott-Shim, M., McCarty, F., & Franze, S. (2005). A model of home learning environment and social risk factors in relation to children's emergent literacy and social outcomes. *Early Childhood Research Quarterly, 20,* 13–36.

Fox, N.,&Calkins, S. D. (2003). The development of self-control of emotion: Intrinsic and extrinsic influences. *Motivation and Emotion, 27,* 7–26.

Future of Children. (2005, Spring). Summary of special issue on school readiness: Closing racial and ethnic gaps. *The Future of Children, 15.* Accessed November 14, 2006 at http://muse.jhu.edu/demo/future_of_children/

George, J.,&Greenfield, D. B. (2005). Examination of a structured problem-solving flexibility task for assessing approaches to learning in young children: Relation to teacher ratings and children's achievement. *Journal of Applied Developmental Psychology, 26,* 69–84.

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

Guralnick, M. J. (2006). Family influences on early development: Integrating the science of normative development, risk and disability, and intervention. In K. McCartney & D. Phillips (Eds.), *Blackwell handbook of early childhood development* (pp. 44–61). Boston: Blackwell.

Hanft, B., Rush, D., & Shelden, M. (2004). *Coaching families and colleagues in early childhood.* Baltimore: Brookes.

Henderson, A. T.,&Mapp, K. L. (2002). *A new wave of evidence: The impact of school, family, and community connections on student achievement.* Austin, TX: Southwest Educational Development Laboratory.

Hill, N. E. (2001). Parenting and academic socialization as they relate to school readiness: The roles of ethnicity and family income. *Journal of Educational Psychology, 93,* 686–697.

Hirsh-Pasek, K., & Burchinal, M. (2006). Putting language learning in context: How change at home and in school affects language growth across time. *Merrill Palmer Quarterly, 52,* 449–485.

Hohmann, M., & Weikert, D. (2002). *Educating young children: Active learning practices for preschool and child care programs.* Ypsilanti, MI: High/Scope Press.

Holm, S. (1979). A simple sequentially rejective multiple test procedure. *Scandinavian Journal of Statistics, 6,* 65–70.

Hyson, M. (2008). *Enthusiastic and engaged learners: Approaches to learning in the early childhood classroom.* Washington, DC: National Association for the Education of Young Children.

Ispa, J. M., Fine, M. A., Halgunseth, L. C., Harper, S., Robinson, J., Boyce, L., et al. (2004). Maternal intrusiveness, maternal warmth, and mother–toddler relationship outcomes: Variations across low-income ethnic and acculturation groups. *Child Development, 75,* 1613–1631.

Kerns, K. A., Klepac, L., & Cole, A. (1996). Peer relationships and preadolescents' perception of security in the child–mother relationship. *Developmental Psychology, 32,* 457–466.

Knitzer, J. (2007). Putting knowledge into policy: Toward an infant–toddler policy agenda. *Infant Mental Health Journal, 28,* 237–245.

Knoche, L. L., Sheridan, S. M., Edwards, C. P., & Osborn, A. Q. (in press). Implementation of a relationship-based school readiness intervention: A multidimensional approach to fidelity measurement for early childhood. *Early Childhood Research Quarterly.*

Lachin, J. M. (2000). Statistical considerations in the intent-to-treat principle. *Controlled Clinical Trials, 21,* 167–189.

LaFreniere, P. J., & Dumas, J. E. (1996). Social competence and behavior evaluation in children ages 3 to 6 years: The short form (SCBE-30). *Psychological Assessment, 8,* 369–377.

Landry, S. H., Smith, K. E., Swank, P. R., Assel, M. A., & Vellet, S. (2001). Does early responsive parenting have a special importance for children's development or is consistency across early childhood necessary? *Developmental Psychology, 37,* 387–403.

Landry, S. H., Smith, K. E., Swank, P. R.,&Guttentag, C. (2008). A responsive parenting intervention: The optimal timing across early childhood for impacting maternal behaviors and child outcomes. *Developmental Psychology, 44,* 1335–1353.

LeBuffe, P. A., & Naglieri, J. A. (1999). *Devereux Early Childhood Assessment (DECA)*. Odessa, FL: Psychological Assessment Resources.

Martinez, M. (1987). Dialogues among children and between children and their mothers. *Child Development, 58,* 1035–1043.

Mashburn, A.,&Pianta, R. (2006). Social relationships and school readiness. *Early Education and Development, 17,* 151–176.

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist, 53,* 205–220.

McBride, S. L.,&Peterson, C. A. (1997). Home-based early intervention with families of children with disabilities: Who is doing what? *Topics in Early Childhood Special Education, 17,* 209–233.

McClelland, M., Acock, A. C., & Morrison, F. J. (2006). The impact of kindergarten learning-related social skills on academic achievement at the end of elementary school. *Early Childhood Research Quarterly, 21,* 471–490.

McCollum, J. A., & Yates, T. J. (1994). Dyad as focus, triad as means: A family-centered approach to supporting parent–child interactions. *Infants and Young Children, 6,* 54–63.

McWayne, C., Hampton, V., Fantuzzo, J., Cohen, H., & Sekino, Y. (2004). A multivariate examination of parent involvement and the social and academic competencies of urban kindergarten children. *Psychology in the Schools, 41,* 1–15.

Mulvaney, M., McCartney, K., Bub, K. L., & Marshall, N. L. (2006). Determinants of dyadic scaffolding and cognitive outcomes in first graders. *Parenting: Science and Practice, 6,* 297–320.

National Education Goals Panel. (1997). *Special early childhood report, 1997.* Washington, DC: U.S. Government Printing Office.

National Institute for Child Health and Human Development Early Child Care Research Network. (2002). Early child care and children's development prior to school entry: Results from the NICHD Study of Early Child Care. *American Educational Research Journal, 39,* 133–164.

National Scientific Council on the Developing Child. (2004). *Young children develop in an environment of relationships* (Working Paper No. 1). Accessed August 4, 2008 at http://www.developingchild.net/pubs/wp/environment_of_relationships.pdf

Neitzel, C., & Stright, A. D. (2003). Relations between mothers' scaffolding and children's academic self-regulation: Establishing a foundation of self-regulatory competence. *Journal of Family Psychology, 17,* 147–159.

Pan, B. A., Rowe, M. L., Singer, J. D., & Snow, C. E. (2005). Maternal correlates of growth in toddler vocabulary production in low-income families. *Child Development, 76,* 763–782.

Patrikakou, E. N., & Weissberg, R. P. (1999). The seven P's of school–family partnership. *Education Week, 18*(21), 34, 36.

Potthoff, R. F., Tudor, G. E., Pieper, K. S.,&Hasselblad, V. (2006). Can one assess whether missing data are missing at random in medical studies? *Statistical Methods in Medical Research, 15,* 213–234.

Raffaele, L. M., & Knoff, H. M. (1999). Improving home–school collaboration with disadvantaged parents: Organizational principles, perspectives, and approaches. *School Psychology Review, 28,* 448–466.

Ramey, S. L., & Ramey, C. T. (1999). The transition to school for "at-risk" children. In R. C. Pianta & M. J. Cox (Eds.), *The transition to kindergarten* (pp. 217–251). Baltimore: Brookes.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.

Raudenbush, S. W., & Liu, X. (2001). Effects of study duration, frequency of observation, and sample size on power in studies of group differences in polynomial change. *Psychological Methods, 6,* 387–401.

Raver, C. C.,&Knitzer, J. (2002). *Ready to enter: What research tells policymakers about strategies to promote social and emotional school readiness among three- and four-year-old children.* New York: National Center for Children in Poverty.

Rimm-Kaufman, S. E., Pianta, R. C.,&Cox, M. J. (2000). Teachers' judgments of success in the transition to kindergarten. *Early Childhood Research Quarterly, 15,* 147–166.

Senechal, M. (2006). Testing the home literacy model: Parent involvement in kindergarten is differentially related to grade 4 reading comprehension, fluency, spelling, and reading for pleasure. *Scientific Studies of Reading, 10,* 59–87.

Sheridan, S. M., & Kratochwill, T. R. (2008). *Conjoint behavioral consultation: Promoting family–school connections and interventions.* New York: Springer.

Sheridan, S. M., Marvin, C. A., Knoche, L. L., & Edwards, C. P. (2008). Getting ready: Promoting school readiness through a relationship-based partnership model. *Early Childhood Services, 3,* 149–172.

Shonkoff, J. P., & Phillips, D. (2000). *From neurons to neighborhoods.* Washington, DC: National Academies Press.

Singer, J. D. (1998). Using SAS PROC MIXED to fit multilevel models, hierarchical models, and individual growth models. *Journal of Educational and Behavioral Statistics, 23,* 323–355.

Snijders, T., & Bosker, R. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling.* London: Sage.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academies Press.

Snow, K. L. (2006). Measuring school readiness: Conceptual and practical considerations. *Early Education and Development, 17,* 7–41.

Snow, K. L. (2007). Integrative views of the domains of child function: Unifying school readiness. In R. C. Pianta, M. J. Cox, & K. L. Snow (Eds.), *School readiness and the transition to kindergarten in the era of accountability* (pp. 197–216). Baltimore: Brookes.

Sroufe, L. A., Egeland, B., Carlson, E., & Collins, W. A. (2005). *The development of the person: The Minnesota Study of Risk and Adaptation from Birth to Adulthood.* New York: Guilford Press.

Suen, H. K., & Ary, D. (1989). *Analyzing quantitative behavioral observation data.* Hillsdale, NJ: Erlbaum.

Thompson, R. A.,&Raikes, H. A. (2007). The social and emotional foundations of school readiness. In D. F. Perry, R. K. Kaufmann, & J. Knitzer (Eds.), *Social and emotional health in early childhood: Building bridges between services and systems* (pp. 13–35). Baltimore: Brookes.

Turner, L. A., & Burke, J. (2003). A model of mastery motivation for at-risk preschoolers. *Journal of Educational Psychology, 95,* 495–505.

Webster-Stratton, C., & Herman, K. C. (2008). The impact of parent behavior-management training on child depressive symptoms. *Journal of Counseling Psychology, 55,* 473–484.

Weigel, D. J., Martin, S. S.,&Bennett, K. K. (2006). Contributions of the home literacy environment to preschool-aged children's emerging literacy and language skills. *Early Child Development and Care, 176,* 357–378.

Zill, N., Moore, K. A., Smith, E. W., Stief, T., & Coiro, M. J. (1991). *Life circumstances and development of children in welfare families: A profile based on national survey data.* Washington, DC: Child Trends.

Zill, N., & West, J. (2001). *Entering kindergarten: A portrait of American children when they begin school.* Washington, DC: National Center for Education Statistics.