As children move through preschool and into kindergarten, they face a host of new social, emotional, and learning demands. School requires them to function effectively in a group context, establish positive relationships with peers and teachers, follow classroom rules, and involve themselves actively in the learning process (McClelland, Acock, & Morrison, 2006). Children's school readiness is embedded in the acquisition of the social-emotional and cognitive skills that underlie their capacity to meet these demands, and thereby to adjust socially and succeed academically in school.

A substantial number of children (up to 20–30% of children living in poverty) start school without the social-emotional and cognitive skills that foster this school readiness, contributing to delays in school progress and disparities in school attainment (McClelland et al., 2006; Ryan, Fauth, & Brooks-Gunn, 2006). Children who begin school unprepared for these learning and behavioral demands typically remain low achievers throughout elementary school and are more likely than their more advantaged peers to experience learning disabilities, conflictual relationships with teachers and peers, grade retention, early school dropout, and long-term underemployment (Ryan et al., 2006).
One important goal of early schooling efforts for at-risk children is to remediate delays in emergent literacy and math skills in order to close the achievement gap within the first few years of schooling (see Starkey, Klein, & DeFlorio, Chapter 8, and Bierman, Domitrovich, Nix, Welsh, & Gest, Chapter 9, this volume). A second goal is to promote the development of the social-emotional competencies and self-regulation skills that support motivated and goal-oriented classroom engagement and learning (Blair, 2002).

This chapter provides a brief review of the developmental research that documents the importance of focusing on both social-emotional and cognitive development during the preschool and early elementary years. We review evidence-based interventions that improve social-emotional school readiness. We then describe the implementation and outcomes of the Head Start REDI (Research-Based, Developmentally Informed) project, a preschool enrichment program that integrates evidence-based curriculum components targeting social-emotional and language–literacy skills, embracing this dual focus to improve the school readiness of socio-economically disadvantaged children. Implications for professional development and classroom practice are discussed.

**Social-Emotional Skills That Support School Success**

The preschool and early elementary school years represent a watershed for social-emotional development (Eisenberg & Fabes, 1998). Attention and memory skills show rapid development, transforming the child’s capacity for classroom learning (Raver, 2002). Skills associated with behavioral inhibition and impulse control mature, facilitating the child’s ability to sustain effort and persist at tasks, as well as to learn on demand through listening and observation (McClelland et al., 2006). These skills reflect the growth of the prefrontal cortex and executive function skills, which support attention control and problem solving, fueling more independent and goal-oriented learning (Blair, 2002) and facilitating the acquisition of emergent literacy and numeracy skills (Blair & Razza, 2007; Welsh, Nix, Blair, Bierman, & Nelson, 2010).

Developmental transformations are also evident in children’s social interactions during the preschool years as the parallel play that characterizes the peer interactions of young 3-year-olds gives way to the more complex, thematic, and coordinated peer play evident among 5- and 6-year-olds (Bierman & Erath, 2006). These emerging social abilities benefit from developing language and executive function skills, and also likely play a central role in promoting the development of those skills (Blair & Diamond, 2008; Coolahan, Fantuzzo, Mendez, & McDermott, 2000).
That is, children who are highly engaged socially with others have more opportunities to practice coordinated and thematic play than children who are isolated or excluded, and they face more frequent demands to communicate clearly and resolve conflicts in the context of that play, thereby enhancing their skill acquisition (Coolahan et al., 2000).

Corresponding to growth in the complexity of social interaction, children show dramatic gains in the area of emotional understanding during the preschool and early elementary years. Normatively, empathy and altruism emerge in preschool as children recognize and differentiate a broader array of emotions and begin to understand that their actions can cause feelings in other people that are different from their own (Eisenberg & Fabes, 1998). Children become more able to regulate their emotions, fostering their capacity to tolerate frustration and manage conflicts peacefully (Izard et al., 2001). These emotional skills are positively linked with academic performance (Garner & Waajid, 2008; Trentacosta & Izard, 2007) and positive peer relationships (Eisenberg & Fabes, 1998).

Recognizing that delays in social-emotional and self-regulation skills are common among children who adjust poorly to elementary school, a number of different interventions have been designed to promote the development of these skills and improve children’s school readiness (Bierman & Erath, 2006; Blair & Diamond, 2008). In the next section, we describe several different intervention approaches that have proven effective at promoting social-emotional school readiness. We focus, in particular, in programs that have undergone rigorous randomized controlled evaluations.

**Specific Interventions That Promote Social-Emotional School Readiness**

Although they share a similar set of goals, school-based interventions targeting improvements in child social-emotional school readiness take different approaches, reflected in different logic models. The *logic model* of an intervention refers to the way that the program conceptualizes the change process. Logic models guide intervention design and implementation by identifying mechanisms of action and indicating how the intervention activities are expected to promote improvements in specific child outcomes. In the area of school readiness interventions, efforts to improve child outcomes typically focus on one or two kinds of change mechanisms, either (1) promoting new teacher skills/practices (e.g., affecting how teaching is being done; how teachers are interacting with students, and managing children's emotions and conflicts in the classroom) and/or (2) changing/enriching the curriculum content (e.g., modifying what is
being taught and which learning activities are being used). Interventions designed to improve social-emotional school readiness also vary in the content domains or child skills that are a central focus of the intervention, demonstrating different levels of emphasis devoted to reducing problem behaviors, improving prosocial behaviors and social competence, enhancing attention skills and learning behaviors, or promoting social-cognitive skills that may provide a foundation for effective school adaptation, such as emotional understanding or social problem-solving skills. Examples of effective programs that reflect different logic models are reviewed briefly in the following sections.

**The Incredible Years Teacher Training Program**

Focused on teachers, the Incredible Years Teacher Training Program systematically strengthens teacher classroom management strategies to promote children’s prosocial behavior and aggression control (Webster-Stratton, Reid, & Hammond, 2001). As proximal targets for change, the program focuses on the following teaching skills: (1) using specific, contingent attention, encouragement, and praise to support positive child behavior; (2) using incentives to motivate learning effort and engagement; (3) preventing behavior problems by structuring the classroom effectively, particularly planning for transitions; (4) decreasing inappropriate behavior with the use of nonpunitive consequences; and (5) building positive relationships with students. Based primarily on social learning theory, this intervention focuses on changing the contingencies and reinforcement for desired and undesired behaviors, in order to provide support for positive student development. Observational research suggests that teacher attention is often focused selectively on the behaviors that disrupt lessons, creating a situation in which a majority of positive student behaviors receive no teacher response (Martens, Hiralall, & Bradley, 1997). Incredible Years seeks to reorient teacher attention and affect, in order to provide children with a warm and supportive classroom environment in which the sensitive and contingent responding of teachers reinforces desired child behaviors, while the use of nonpunitive discipline strategies, such as planned ignoring, natural consequences, and time-out, reduces undesired behaviors (Webster-Stratton et al., 2001). The intervention is delivered via monthly workshops with teachers that involve review of modeling videotapes, group discussion, practice assignments, and consultation in response to the ongoing program experiences of the participating teachers.

In a randomized controlled study of the Incredible Years teacher and parent training programs, Webster-Stratton et al. (2001) examined differences between intervention teachers (i.e., teachers who followed the
Incredible Years program) and teachers engaging in their “usual practice” teaching in Head Start classrooms serving low-income children. Postintervention observations indicated that intervention teachers used more praise, more effective discipline techniques, and fewer harsh and critical techniques. In the Webster-Stratton et al. study, the children in the intervention classrooms also exhibited greater learning engagement and on-task behavior, increased prosocial behavior, and reduced aggression compared with their peers in the “usual practice” control condition classrooms.

In an independent evaluation, Raver and colleagues (2008) incorporated the Incredible Years Teacher Training Program into their Chicago School Readiness Project (CSRP), providing Head Start teachers with five 6-hour training sessions. In addition, CSRP provided a mental health consultant, who met with teachers weekly to support their implementation of the Incredible Years classroom management skills, and also to provide emotional support for their own stress reduction. Mental health consultants also implemented individualized management plans for children displaying high levels of disruptive behavior in the classroom. At the end of the year, observations documented significantly higher levels of positive climate, teacher sensitivity, and positive behavior management in intervention classrooms compared with the “usual practice” Head Start classrooms. Observations also documented lower levels of aggressive and disruptive behavior among children in the CSRP intervention classrooms compared with children in the control classrooms (Raver et al., 2009). Furthermore, significant benefits for children emerged in areas of preacademic skills, such as vocabulary, letter naming, math, and attention control (Raver et al., 2011). The investigators postulate that improvements in teacher classroom management skills led to increases in instructional time and child learning engagement, thereby promoting gains in academic as well as social-emotional skills.

Tools of the Mind

Taking a very different approach to the promotion of social-emotional school readiness is the Tools of the Mind program (Bodrova & Leong, 2007). Tools focuses on promoting child self-regulatory skills and aims to reduce child dependence on the external control provided by teachers. For this reason, Tools eschews the use of token or point reward systems in the classroom, although it supports teacher’s use of praise and attention to reinforce positive child behaviors. To enhance child self-regulation, Tools restructures learning activities to reduce large-group activities and passive waiting time and increase small-group and peer-pairing activities that keep children more actively engaged in the learning process. Tools
also places a special emphasis on sociodramatic play as a critical context for the development of self-regulatory skills. Teachers are taught how to introduce and support complex dramatic play themes in the classroom, and children spend time each day in planning and enacting sustained, collaborative sociodramatic peer play in prepared play centers. From a theoretical standpoint, reflecting Vygotsky, pretend sociodramatic play requires children to exercise executive function skills, as well as to regulate their social behavior (Blair & Diamond, 2008; Bodrova & Leong, 2007). Specifically, role playing requires children to (1) hold their own character role and those of others in mind, exercising working memory; (2) inhibit behavioral impulses to act out of character, exercising inhibitory control; and (3) flexibly adapt to unexpected changes in play scenarios, exercising attentional set-shifting skills. In the Tools program, teachers also lead games that involve turn taking, inhibitory control, and remembering to enact preplanned rather than impulsive behaviors, which are specifically designed to reinforce executive function skills. Tools represents a curriculum-based preschool intervention, but one that emphasizes the central role of the teacher in supporting and scaffolding child opportunities for engagement in the sorts of play and learning activities that foster the development of self-regulation skills.

Tools has been evaluated in a randomized controlled trial in which teachers and preschool children (ages 3 and 4 years old) were assigned to classrooms using the Tools curriculum or a curriculum developed by the school district (Barnett et al., 2008). Intervention teachers received 4 full days of training before classes began, along with additional training and discussion sessions scheduled during the school year. In addition, a Tools trainer provided ongoing coaching, making weekly, 30-minute classroom visits throughout the year, and meeting individually with teachers on an as-needed basis to clarify the curriculum and address implementation challenges. Observation documented a significant impact of the Tools curriculum on the quality of teaching in the classrooms, including measures assessing classroom structure and time use, quality of the literacy environment and instruction, and the use of scaffolding techniques by teachers in their interactions with children (Barnett et al., 2008). Observations were also conducted using the Classroom Assessment Scoring System (LaParo & Pianta, 2003), which focuses on the quality of teacher–student interactions, but these did not show a significant effect of the intervention. In terms of child outcomes, Barnett et al. (2008) found that intervention teachers rated children in their classrooms as having fewer behavior problems, and children also showed test gains in vocabulary but not in emergent literacy or math skills. Another assessment conducted a year later, after children had been exposed to the program for 2 years, also showed significant effects on children’s executive function
skills (Diamond, Barnett, Thomas, & Munro, 2007). However, these latter assessments were made after teachers and children were allowed to change programs if desired, thus compromising the original randomization and warranting confirmation in additional studies. Additional trials evaluating this program are currently under way.

In addition to the intervention approaches represented by the Incredible Years and Tools programs, a number of curriculum-based interventions have used explicit lessons and coaching to promote specific social-emotional skills.

**SOCIAL-EMOTIONAL LEARNING CURRICULA AND CHILDREN’S SCHOOL READINESS**

A rapidly growing research base suggests that social-emotional skills development can be enhanced using such systematic instructional approaches in the classroom, generally referred to as social-emotional learning (SEL) curricula (Consortium on the School-Based Promotion of Social Competence, 1994). SEL programs are informed, in part, by social learning theory and emphasize the acquisition of behavioral skills. They also emphasize the central role of children’s social cognitions and social information-processing skills in fostering adaptive social-emotional functioning. Reflecting their social learning theory roots, SEL programs include presentations that help children understand targeted skills concepts using a combination of modeling, instruction, and discussion. They include opportunities for children to practice those skills and receive feedback and support from teachers. SEL programs also emphasize the importance of covert thinking processes in fostering skillful social interaction and self-regulatory control. For example, children’s cognitive capacities to recognize and accurately assess social problems, to differentiate feelings and behaviors, to generate and evaluate multiple potential responses, to set goals, and to self-monitor their behavioral performance in light of those goals are considered critical building blocks for flexible and adaptive social behavior (for more detail, see Greenberg, 2006).

In SEL programs designed for young children, teachers use lessons, typically with modeling stories, puppets, and pictures to illustrate concepts and explain, demonstrate, and discuss the skills. These lessons also include practice activities, such as role plays, games, and cooperative activities that allow children to experience success enacting the skill. Finally, teachers provide support during the day to help children generalize the use of the skills in their everyday interactions in the classroom. This teacher role is important, because teachers model, prompt, and praise children for using the skills, thereby strengthening children’s
comfort and competence. There are several examples of preschool programs that utilize SEL curricula and have evidence of effectiveness based on randomized controlled evaluations.

The I Can Problem Solve (ICPS) program was one of the first such social-emotional learning programs designed specifically for preschool children (Shure, 1992; Shure & Spivack, 1982). In this program, children learn word concepts to help them describe social sequences (e.g., some vs. all, if–then, same–different). The next set of lessons focuses on helping children identify their own feelings and recognize the feelings of others. In subsequent lessons, teachers promote social problem-solving skills by introducing hypothetical preschool problem situations and asking children to generate and act out possible solutions. A randomized controlled trial showed that the ICPS program promoted gains in children's social problem-solving abilities and led to teacher-rated improvements in frustration tolerance, impulsivity, and task engagement (Shure & Spivack, 1982).

Al’s Pals: Kids Making Healthy Choices is another example of a social-emotional learning program designed for preschool, kindergarten, and first-grade children. The program includes 46 lessons that focus on a hand puppet named Al, who, along with his puppet friends, demonstrate a set of social-emotional skills in role plays, discussions, original songs, and books. In a randomized controlled evaluation of Al’s Pals, participating children showed improved social skills and problem-solving abilities, as assessed by teacher ratings, compared to children in “usual practice” classrooms (Dubas, Lynch, Gallano, Geller, & Hunt, 1998). Similarly, a second randomized controlled trial of this curriculum conducted in Head Start classrooms produced significant positive effects on teacher-rated behavior problems and independent functioning (Lynch, Geller, & Schmidt, 2004).

Similarly, the Incredible Years Dinosaur School Social Skills and Problem Solving curriculum is a social-emotional learning program designed to decrease aggression and promote social skills in young children ages 3–8 (Webster-Stratton, 2005). Findings from a randomized controlled group intervention study in 153 classrooms (including Head Start, kindergarten, and first-grade classes) with over 1,700 children indicated that teachers in classrooms offering the Dinosaur School program were significantly more nurturing and consistent with discipline, focused more on promoting social and emotional behaviors, and were less harsh and critical in their interactions with children. Compared with children in the “usual practice” classrooms, children in intervention classrooms were more cooperative with teachers and peers, and showed enhanced problem-solving skills (Webster-Stratton, Reid, & Stoolmiller, 2008).

The PATHS (Promoting Alternative Thinking Strategies) curriculum (Kusche & Greenberg, 1994) is one of the most comprehensive,
evidence-based, social-emotional learning programs available. A number of randomized trials conducted with students in the early elementary grades have shown that the use of PATHS is associated with improved social cognitions, more socially competent behaviors, and reduced aggression (Conduct Problems Prevention Research Group, 1999, 2010), as well as improved executive function skills (Riggs, Greenberg, Kusche, & Pentz, 2006).

More recently, a downward extension of this curriculum was created to address school readiness by improving young children’s emotional understanding and social problem-solving skills, and increasing their capacity to use language effectively in the service of emotion regulation (Domitrovich, Greenberg, Cortes, & Kusche, 1999). Preschool PATHS targets skills in four social-emotional domains: (1) friendship skills and prosocial behaviors (e.g., helping, sharing, taking turns); (2) emotional knowledge (e.g., recognizing and labeling core feelings); (3) self-control (e.g., using the “Turtle Technique” to stop, self-calm, and identify the feeling and problem); and (4) social problem solving (e.g., identifying the problem, generating solutions, considering consequences, and choosing the best plan). There are 33 brief lessons with stories, pictures, and puppets that provide skills instruction. Each lesson also includes ideas for formal and informal extension activities that teachers and preschool staff members can use throughout the day to generalize key concepts. Teachers are encouraged to provide emotion coaching throughout the day, modeling feeling statements themselves when appropriate, helping children notice the feelings of peers, and prompting children to describe their own feelings. Teachers are also encouraged to watch for naturally occurring “teachable moments,” such as peer disagreements or conflicts. At these times, teachers are taught to help children stop and calm down, then talk through the problem-solving steps of defining the problem and their feelings, listening to their friend’s feelings, and generating ideas for how to solve the problem. A randomized controlled trial compared the development of children in 10 Head Start classrooms using Preschool PATHS with children in 10 “usual practice” Head Start classrooms; 287 children were followed for 1 year. Children who received Preschool PATHS showed higher levels of emotional understanding and were rated as more socially competent by both teachers and parents than children in the control classrooms (Domitrovich, Cortes, & Greenberg, 2007).

Summary

The studies reviewed in this section demonstrate the substantial impact that preschool and early elementary school practices and programs can have on child social-emotional development and school readiness.
Effective interventions vary in their approach, alternatively placing a major emphasis on improving teacher classroom management skills, restructuring learning activities and investing in scaffolded sociodramatic play, or providing children with explicit lessons and coaching in social-emotional skills. Intervention programs using each of these approaches have proven effective in reducing child behavior problems and promoting child social competencies. Academic outcomes were not measured in all of the studies reviewed, but some showed evidence of the “crossover” impact of social-emotional intervention on child vocabulary (Barnett et al., 2008) and emergent literacy and math skills (Raver et al., 2011), suggesting that promoting social-emotional and self-regulation skills can foster cognitive as well as social-emotional school readiness (see also Durlak, Weissberg, Dymnicki, Taylor, & Shellinger, 2011). However, such “crossover” effects may not be sufficient by themselves to reduce the substantial gap in cognitive school readiness, including the emergent literacy and math skills associated with poverty and early adversity.

**The Need for Preschool Academic Enrichment**

The relative importance of addressing the delays in cognitive versus social-emotional school readiness among children growing up in poverty has been a topic of considerable debate (see Barnett et al., 2008). Fueling the argument that instruction focused on promoting emergent literacy skills should begin during the preschool years are data demonstrating that skills such as knowledge of print (e.g., letter names), phonological awareness (e.g., being able to rhyme), and writing (e.g., being able to print one’s name) are strong predictors of reading success well into elementary school (Whitehurst, 2001) and, furthermore, that prekindergarten instruction in these skills has a significant impact on promoting rapid skills acquisition, facilitating cognitive school readiness (Lonigan, 2006).

In contrast, other investigators have expressed concerns about the early push toward teacher-directed instruction and academic attainment during the preschool years (Elkind, 2001; Parker & Neuharth-Pritchett, 2006). They cite a lack of evidence showing long-term academic gains associated with preschool academic acceleration and note that academically focused preschool programs do not address the behavioral and social-emotional needs of at-risk children. Reflecting this concern, the longitudinal follow-up of a study that compared a highly academic preschool program, Direct Instruction, with a balanced curriculum that emphasized teacher-scaffolded, child-centered learning, High/Scope, found that the former failed to produce the long-term gains in child social
competence and the reductions in child antisocial behavior produced by the latter (Schweinhart, Weikart, & Larner, 1986).

Clearly, given that children growing up under conditions of adversity often show delays in both cognitive and social-emotional school readiness, enhancing skills in both domains is important. Ideally, one would not choose between cognitive and social-emotional approaches in promoting school readiness, but rather combine intervention approaches to maximize gains in both domains. The Head Start REDI project was designed with this goal in mind.

The Head Start REDI Project

Head Start REDI was designed to provide an enrichment intervention that could be integrated into the existing framework of Head Start programs (Bierman, Domitrovich, et al., 2008). The goal was to demonstrate that evidence-based curricular enhancements targeting social-emotional learning and emergent literacy skills could complement the broad educational programming provided by High/Scope or Creative Curriculum, increasing the systematic emphasis teachers placed on target skills and improving child outcomes in areas of both social-emotional and cognitive school readiness. The REDI intervention was delivered by classroom teachers and integrated into their ongoing classroom programs. It included curriculum-based lessons, center-based extension activities, and training in teaching strategies to use throughout the day. These skills were selected because they are important predictors of grade school adjustment and achievement, and are associated with socioeconomic disparities in school readiness (Blair, 2002; Lonigan, 2006). In addition, prior efficacy studies had demonstrated that these instructional approaches used in isolation produced improvements in child skills and school readiness. A key question was whether teachers could implement these multiple approaches at the same time, so that children would show positive outcomes across domains, or alternatively, whether the combined approach would overburden teachers and therefore lead to a dilution of program effects.

REDI Intervention Components

In REDI, the Preschool PATHS curriculum (Domitrovich et al., 1999) was used to promote children's social-emotional skills. The 33 lessons that comprise this curriculum were delivered by teachers during circle time, supporting child understanding of prosocial friendship skills, emotional understanding and emotional expression skills, self-control, and social
problem-solving skills. In addition to teaching one lesson per week, teachers conducted a weekly extension activity, leading a cooperative game or project that provided children with opportunities to practice the PATHS skills with teacher support. Teachers received mentoring that encouraged them to use PATHS compliments and positive classroom management strategies daily, and to support generalized skills development with ongoing emotion coaching and support for student use of the self-control technique (called the “Turtle Technique”) and social problem-solving steps. The goal was to help students apply PATHS skills in their everyday interactions in the classroom.

Three program components were used to support the development of language and emergent literacy skills in REDI, including an interactive reading program, a set of sound games, and print center activities. The interactive reading program was based on the shared reading program developed by Wasik, Bond, and Hindman, 2006; see also Wasik & Hindman, Chapter 7, this volume, which in turn was an adaptation of the dialogic reading program (Whitehurst et al., 1994). The curriculum included two books per week, which were scripted with interactive questions. Each book had a list of targeted vocabulary words, presented with the aid of physical props and illustrations. In addition to presenting these materials in a systematic way during the week, teachers received mentoring in the use of language coaching strategies, such as expansions and grammatical recasts, to provide a general scaffold for language development in the classroom (Dickinson & Smith, 1994). The overall goal was to improve teachers’ strategic use of language in ways that would increase child oral language skills, including vocabulary, narrative, and syntax. To enhance synergy across the social-emotional and cognitive curriculum components of REDI, the PATHS themes were linked systematically with the interactive reading program. Many of the interactive reading books teachers used featured the PATHS theme of the week, thereby serving as a second PATHS extension activity and tying together the reading and social-emotional learning programs. Conversely, language and literacy skills also were incorporated into many of the PATHS extension activities.

In addition, REDI provided teachers with curricular materials to promote phonological awareness and print knowledge. A set of sound games was based primarily upon the work of Adams, Foorman, Lundberg, and Beeler (1998). The games were organized developmentally, moving from easier to more difficult skills during the course of the year (e.g., listening, rhyming, alliteration, words and sentences, syllables, and phonemes). Teachers were asked to use a 10- to 15-minute sound game activity at least three times per week. Teachers also were provided with a developmentally sequenced set of activities and materials to be used in their alphabet
centers, including letter stickers, a letter bucket, materials to create a letter wall, and craft materials for various letter-learning activities. Teachers were asked to make sure that each child visited the alphabet center several times per week, and they were given materials to track the children’s acquisition of letter names.

The interactive reading program and emphasis on language use, as well as the emotion coaching and social problem-solving strategies that were central to the REDI program were philosophically compatible with the strategic, child-centered teaching approach used in High/Scope and Creative Curriculum. In contrast, the sound games and print center activities utilized more direct teacher instruction, about which some early childhood educators have worried because of the possibility of failing to engage motivated learning in young children (Elkind, 2001). These curriculum components were included in REDI based upon research documenting the essential nature of emergent literacy skills for school success and evidence of the effectiveness of these approaches in promoting emergent literacy skills in disadvantaged preschool children (Lonigan, 2006). In addition, it was anticipated that the previously limited effects of a direct instruction approach (Schweinhart et al., 1986) could be circumvented by integrating these strategies into a more comprehensive educational approach that included specific supports for social-emotional skills development.

Finally, to strengthen home–school connections, three take-home packets were mailed to parents during the course of the year, each containing a modeling videotape, with parenting tips and learning activities to use at home. In addition, the PATHS curriculum included handouts for parents, with suggestions for home activities. Children also took home letter stickers and compliment pages to prompt their parents to ask them about their school day and provide positive support at home.

**The REDI Professional Development Model**

To support teachers in their implementation of the multifaceted REDI model, they received detailed manuals and kits containing all materials needed to implement the intervention. A 3-day professional training was conducted in August, prior to initiating the intervention, and a 1-day booster training session was conducted midyear. Teachers also received weekly mentoring support provided by local educational consultants called REDI trainers, who were experienced master teachers supervised by two project-based, senior educational specialists. The weekly consultations were intended to enhance the quality of implementation through modeling, coaching, and providing ongoing feedback regarding program
delivery. REDI trainers spent an average of 3 hours per week in each classroom observing, demonstrating, or team-teaching lessons. They also met with the head and assistant teachers for 1 hour each week outside of class. REDI trainers provided teachers with suggestions in the area of effective classroom management, such as establishing clear and appropriate rules and directions, providing positive and corrective feedback for appropriate behavior, applying natural response cost procedures to reduce problem behaviors, and strengthening positive relationships with children and parents.

**REDI Research Evaluation Design**

To evaluate its effectiveness, the REDI project employed a randomized controlled trial design, assigning 44 Head Start classrooms serving low-income children to intervention or usual practice conditions. Although classrooms contained 3- and 4-year-old children, only 4-year-olds participated in this evaluation. Teachers were studied as they implemented the intervention for the first time, and 4-year-old children in the intervention condition were assessed after receiving 1 year of REDI. Teachers in the comparison classrooms continued to implement High/Scope or Creative Curriculum as usual.

Study participants included 356 children (17% Hispanic, 25% African American, 42% European American; 54% girls), who represented a majority (86%) of the 4-year-old children in the participating classrooms. At the beginning of the Head Start year, these children were, on average, 4.49 years old ($SD = 0.31$, range $= 3.72$–$5.65$). On the Block Design scale of the Wechsler Preschool and Primary Scale of Intelligence—Third Edition (WPPSI-III), a measure of nonverbal cognitive ability that is highly correlated with Full Scale IQ ($r = .72$; Wechsler, 2002), children received an average standard score of 7.98 ($SD = 2.88$), approximately two-thirds of a standard deviation below the national mean of 10 and comparable to similar samples of children growing up in poverty.

At the beginning and end of the year, research assistants visited schools and conducted individual assessments with all child participants. In addition, teachers and parents provided ratings on each child in the study, and each child was observed during two 12- to 15-minute play sessions. Teachers were also observed to assess the quality of student–teacher interactions and quality of language use in the classroom.

**Intervention Implementation**

An important initial question was whether teachers were able to implement the multiple components of the REDI intervention effectively. Based
on teacher reports, it appeared that most teachers were able to complete a majority of the REDI lessons and activities. On average, teachers reported conducting 1.77 PATHS lessons and extension activities, 6.08 dialogic reading activities, 2.57 sound game activities, and 3.56 alphabet center activities each week.

Rating 10 questions regarding the quality of their implementation, teachers gave an average quality rating of 2.78 on a 3-point scale, reflecting their feelings that the lessons were relatively easy to implement as written, children were engaged, and children seemed to understand the skills being taught. REDI trainers also observed and rated the fidelity and quality of the teachers’ implementation of program components, using a 6-point Likert scale with response options ranging from poor to exemplary. REDI trainer ratings indicated “4 = adequate” to “5 = strong” implementation across intervention components. On average, teachers received a score of 4.61 (SD = 0.74) in their implementation of PATHS, a score of 4.39 (SD = 0.57) in their implementation of dialogic reading, a score of 4.70 (SD = 0.55) in their implementation of alphabet center activities, a score of 4.52 (SD = 0.72) in their implementation of sound games, and an overall score of 4.55 (SD = 0.67). In general, these data suggest that, with the manuals, materials, and professional development support teachers were given, they were able to implement the multiple components of REDI effectively in both emergent literacy and social-emotional learning domains.

**Impact on Teaching Quality**

The second question we addressed was the degree to which the REDI program improved the quality of teacher behavioral management, teacher–student interactions, and language use in the classroom. Research assistants who were blind to the teachers’ intervention status visited classrooms in the spring of the year, and used the Classroom Assessment Scoring System (CLASS; LaParo & Pianta, 2003) to assess the quality of emotional support and instructional support evident in classrooms. In addition, observers rated teachers on teaching practices targeted specifically by the PATHS curriculum, and they assessed the quality of language used in the classroom.

On the CLASS Emotional Support subscales, REDI produced significant or near-significant increases in positive climate ($p < .04$) and teacher sensitivity ($p < .07$). REDI also produced a nearly significant effect on the CLASS Instructional Support scale ($p < .08$), indicating improvements in teachers use of instructional time and student productivity and engagement. Reflecting the specific teaching strategies that were a target of the intervention, observers also scored REDI teachers as significantly
or nearly significantly higher than teachers in comparison classrooms on rating scales reflecting positive emotional climate \((p < .05)\), which includes items reflecting emotion expression, support for emotion regulation, and emotion modeling, and classroom management skills \((p < .001)\), which include items on setting clear expectations, consistent limit setting, and proactive/preventive management. Finally, positive changes were observed in teachers’ language use in the classroom: REDI teachers made more statements \((p < .001)\), asked more questions \((p < .001)\), used more decontextualized talk \((p < .005)\), and engaged in richer and more sensitive talk with children \((p < .004)\) than teachers in the usual practice control group. The magnitude of these effects was in the small-to-moderate range for the ratings reflecting teacher social-emotional support, with effect sizes ranging from \(d = 0.39\) to 0.61, and in the moderate-to-large range for the language use scales, with effect sizes ranging from \(d = 0.67\) to 0.89 (see Domitrovich et al., 2009, for details). Overall, these findings indicate that the REDI intervention helped teachers establish a more positive classroom climate, use more preventive behavior management strategies, and talk with children more frequently and in more cognitively complex ways.

Impact on Child Outcomes

REDI intervention effects on child outcomes were evaluated using hierarchical linear models that accounted for the nesting of children within classrooms and controlled for child sex, race, and cohort (see Bierman, Domitrovich, et al., 2008; Bierman, Nix, Greenberg, Blair, & Domitrovich, 2008, for a full description). In the domain of language/emergent literacy skills, positive effects for REDI were found on children’s growth in vocabulary skills \((d = 0.15, p < .05)\), phonemic awareness \((d = 0.35–0.39, p < .001)\), and print awareness \((d = 0.16, p < .10)\). In the domain of social-cognitive skills and emotional understanding, children who received REDI, compared to those in the usual practice control classrooms, gained more in their ability to identify and recognize emotions in photographs \((d = 0.21, p < .06)\) and stories \((d = 0.23, p < .05)\). They also showed more ability to generate competent and nonaggressive solutions to hypothetical social problems \((d = 0.21–0.35, p < .05)\). Teachers rated children who received REDI as more socially competent \((d = 0.24, p < .10)\) and less aggressive \((d = 0.28, p < .05)\) than children in the comparison classrooms, and observers who were blind to condition also rated children who received REDI as more socially competent \((d = 0.26, p < .10)\). Finally, assessments of children’s executive function skills revealed that REDI produced gains in children’s attention regulation skills, reflected in their performance on the Dimensional Change Card Sort (Frye, Zelazo, & Palfai, 1995) a task measuring working memory, attention control, response inhibition,
and set-shifting. Moreover, assessors rated REDI children higher on items reflecting their task persistence, ability to sustain concentration, frustration tolerance, and motivated engagement during the testing session (see Bierman, Nix, et al., 2008, for more details).

**Summary and Future Directions**

Interventions that promote school readiness represent a critical effort toward reducing the achievement gap associated with growing up in poverty. Developmental research documents delays in both cognitive and social-emotional school readiness associated with early adversity. As a result, interventions may be most effective when they take a dual focus on promoting cognitive and social-emotional competencies. Research conducted in the context of rigorous randomized controlled trials demonstrates that interventions targeting positive classroom management and supportive teacher–student relationships, and those that promote children’s acquisition of emotional awareness, empathy, social interaction skills, and social problem-solving skills are effective at reducing problem behaviors and enhancing children’s learning engagement in the classroom. A critical goal for the future is the broad dissemination of these evidence-based practices in order to improve the impact of preschool and early elementary school on child skills acquisition and social-emotional adjustment.

The REDI program was designed as an enrichment program that could be integrated into more comprehensive core programs, such as High/Scope or Creative Curriculum, to strengthen program impact on key school readiness skills. To make the integration of research-based practices easier, REDI provided teachers with manualized enrichment curricula that comprise brief lessons, hands-on extension activities, and specific instructional strategies, all arranged strategically to address a scope and sequence of social-emotional and language/emergent literacy skills. The value of this sort of specific curriculum is that it not only reduces the burden on teachers but it also provides the guidance and support necessary for easy incorporation of evidence-based practice into everyday classroom planning.

In addition, REDI provided mentoring to support teacher understanding and effective use of these instructional strategies. Increasingly, education research is documenting the value of ongoing professional development in the form of mentoring or coaching to foster teacher implementation of evidence-based practice and positive teaching strategies. Developing strategies to support the availability of this kind of professional development is an ongoing goal, and promising approaches
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are emerging. For example, a recent study documented the value of a Web-based platform to deliver professional development support (Pianta, Mashburn, Downer, Hamre, & Justice, 2008). The online coaching program, My TeachingPartner, facilitated teacher implementation of a social-emotional learning program (Preschool PATHS) by providing an array of Web-based professional development resources, including video exemplars and lesson plans. Teachers met regularly with an online coach, sharing videotaped excerpts of their classroom lessons, and receiving positive support and individualized feedback and suggestions. This kind of strategy offers hope for making teacher coaching widely accessible. Future research may contribute additional knowledge regarding optimal and efficient strategies to provide teachers with the professional development and curriculum resources they need to close the achievement gap associated with poverty and promote positive school outcomes for all children.

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