A First Look at the Head Start CARES Demonstration

Large-Scale Implementation of Programs to Improve Children's Social-Emotional Competence

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A First Look at the Head Start CARES Demonstration: Large-Scale Implementation of Programs to Improve Children's Social-Emotional Competence

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Overview

Low-income preschool children face many risks to their social-emotional development that can affect their school experience and social outcomes for years to come. Although there are some promising approaches to improving young children's social-emotional competence, the evidence base is limited, particularly on the effectiveness of these approaches when operating at large scale.

To help address this gap, the Head Start CARES demonstration evaluated the implementation and impacts of three interventions that included classroom-based social-emotional strategies, along with professional development (teacher training and coaching) and related supports for scaling up the program, in Head Start classrooms across the country. "The Incredible Years Teacher Training Program" trains teachers to create an organized classroom climate that supports children's behavior regulation (by both the teacher and by the children themselves) and promotes positive teacher-child relationships. "Preschool PATHS" focuses on improving children's social-emotional problem-solving skills, including defining problems and anticipating the consequences of different solutions. "Tools of the Mind — Play" focuses on training teachers to strengthen children's ability to regulate their behavior by using adult-supported, "make believe" play and other activities.

The demonstration was conducted with 17 Head Start grantees that varied by geographic location, organizational setting, and size, and generally represented the diversity of Head Start settings nationally. Centers within these 17 grantees were randomly assigned to one of the three interventions or to a "business as usual" control group. This report describes the extent to which each strategy and the professional development supports were implemented as intended, and the degree to which teachers' practices changed as a result.

Key Findings

Taken together, the following findings confirm that the Head Start CARES demonstration provided a fair test of large-scale implementation of the three interventions, thereby providing a sound basis for evaluating their impact on children and classrooms.

- Teacher attendance at training sessions and the quality of training were generally strong across all grantees and interventions. The dosage (frequency and duration) and quality of coaching for teachers in the classroom were also generally high.
- Despite challenges, teachers reported that they understood the interventions and were able to implement them. The Incredible Years and Preschool PATHS were easier for teachers to implement than was Tools of the Mind.
- Classroom implementation varied somewhat across the three interventions in terms of fidelity to the original model, but each intervention was implemented with fidelity at or above a predetermined threshold rating of 3 on a 5-point scale. Fidelity of classroom implementation improved over the course of the school year.
- Compared with the control classrooms, each intervention improved the specific teacher practice that it was hypothesized to affect. The Incredible Years improved teachers' classroom management, PATHS bolstered teachers' social-emotional instruction, and Tools of the Mind increased teachers' scaffolding of peer interactions and play, in which the teacher supports the children in their attempts to push beyond their current skill level.

A separate report examines the impacts of the three interventions on teacher-child interactions, children's preschool outcomes, and children's kindergarten outcomes.

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The Head Start CARES (Classroom-based Approaches and Resources for Emotion and Social skill promotion) demonstration is made possible by the Office of Head Start and the Office of Planning, Research and Evaluation (OPRE) in the Administration for Children and Families (ACF) in the U.S. Department of Health and Human Services (HHS). As the Head Start CARES program officers at ACF, Ann Rivera and Lauren Supplee provided wise guidance and vision at every step of writing the report and to the project as a whole. We also thank Naomi Goldstein, Mary Bruce Webb, and Christine Fortunato for their thoughtful review.

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The Authors

Executive Summary

Low-income preschool children face a number of risks that can cause their social-emotional development to lag behind that of their more affluent peers.[1] This imbalance is of concern because early social-emotional development is associated with better school readiness and peer relationships, which may contribute to a lower likelihood of high school dropout or lower rates of delinquency.[2] It has been suggested that social-emotional skills may allow children to engage more fully in the classroom, setting them up for even better classroom participation and potentially better academic outcomes.[3] Direct intervention to close the gap in social-emotional development between low- and higher-income children is, therefore, thought to be one way to boost low-income children's readiness for kindergarten, by helping to prepare them for the behavioral expectations of school.

This goal takes on considerable importance given that many preschool teachers report that they lack strategies and techniques to support children who have social-emotional challenges, and kindergarten teachers consistently rank children's emotional and behavioral issues as a top concern.[4] However, the evidence base is limited on the effectiveness of interventions to improve children's social-emotional competence, and there is even less evidence on the support systems that are needed to implement such interventions. To date, the evidence that does exist comes from small-scale tests in which the interventions' developers are directly involved and which they actively oversee, providing little information about how effective the interventions would be when implemented on a larger scale in a wider range of settings.

Head Start, which is the largest federally funded early childhood education program in the United States, aims to increase school readiness among low-income children from birth to age five years by boosting their cognitive, social, and emotional development. The Head Start CARES ("Classroom-based Approaches and Resources for Emotion and Social skill promotion") demonstration was designed to expand the current evidence base by evaluating enhancements to the standard curricula that have been used in Head Start classrooms.

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[1]The Center on the Social and Emotional Foundations for Early Learning (CSEFEL) defines social-emotional development as the developing capacity of the child from birth through five years of age to form close and secure adult and peer relationships; experience, regulate, and express emotions in socially and culturally appropriate ways; and explore the environment and learn — all in the context of family, community, and culture. For more information, see Yates et al. (2008).

[2]Dobbs, Doctoroff, Fisher, and Arnold (2006); Hawkins et al. (1999); Heckman, Stixrud, and Urzua (2006); Kellam et al. (1998); McClelland, Acock, and Morrison (2006); McWayne, Fantuzzo, and McDermott (2004); Raver et al. (2008); Reid, Eddy, Fetrow, and Stoolmiller (1999); Reynolds, Temple, and Ou (2010); Woodward and Fergusson (1999); Nagin and Tremblay (2001); Hamre and Pianta (2001).

[3]Morris et al. (2013); Raver et al. (2008).

[4]La Paro and Pianta (2000).

The demonstration included (1) selection of three different strategies, or program "enhancements," that in smaller-scale tests showed positive effects on children's social-emotional outcomes, such as reducing problem behaviors and promoting positive peer relationships; (2) implementation of these three enhancements in many different kinds of classrooms that operate within the regular Head Start system; and (3) the same professional development model, technical assistance, and program monitoring to support each of the three enhancements, in order to help ensure that they were implemented as designed while efforts were made to rapidly increase their scale, as Head Start CARES envisioned.

This report, which focuses on how well the three enhancements and the related supports were implemented, is part of a larger Head Start CARES randomized control trial that is also examining the impact of the approaches on classrooms and the children in them. The Head Start CARES demonstration was conceived and sponsored by the Office of Head Start and the Office of Planning, Research and Evaluation in the Administration for Children and Families in the U.S. Department of Health and Human Services. The demonstration was conducted by MDRC, a nonprofit, nonpartisan education and social policy research organization, in collaboration with MEF Associates and several academic partners.

The Head Start Cares Demonstration

As noted above, Head Start CARES sought to provide a fair test of the effectiveness of three different social-emotional approaches for preschool teachers that were implemented on a large scale in the Head Start system. In order to conduct this test, it was important that the approaches be implemented with reasonable quality and intensity. While the level of support that was put in place to help achieve this objective was less than might be expected in small "hothouse" studies (which are tightly controlled and have extensive resources), the full intervention, which included prepared classroom materials, ongoing teacher training and coaching, technical assistance, and continuous monitoring, extended beyond the typical implementation of a new preschool intervention.[5] Therefore, this demonstration approaches an "effectiveness" study, but with "efficacy" supports included: that is, it evaluates whether a fully developed intervention that has been shown to be efficacious under limited or ideal conditions is effective when it is implemented under more typical conditions through an independent study.[6]

[5]For example, see Odom (2009); Wise, da Silva, Webster, and Sanson (2005).

[6]See University Council for Educational Administration (n.d.) for the Institute of Education Science's definition of an "efficacy study" versus an "effectiveness study."

The Participating Head Start Grantees

The demonstration was conducted over the course of one academic year with 17 Head Start grantees located across the United States.[7] Each grantee had at least four centers where classes were held, which were similar in the racial and ethnic composition of the children who were enrolled and in the mix of full- and part-day classrooms.[8] Each center generally had at least two classrooms that served primarily four-year-olds. Typically four or eight centers were grouped together as a "block," and each center in a block was randomly assigned to one of the three social-emotional enhancements (the program group) or to a "business as usual" control group. Random assignment ensures that any observed effects, or "impacts," on outcomes (for example, teachers' classroom management skills, in this study) are a result of the intervention.

Four grantees that participated during the 2009-2010 school year (representing 24 centers and 78 classrooms) were in Cohort One, and 13 grantees that participated during the 2010-2011 school year (representing 80 centers and 229 classrooms) were in Cohort Two. A total of 104 centers, 307 classrooms, and over 3,600 children were part of the study. This report focuses on the 78 centers and 230 classrooms that were assigned to receive one of the three enhancements in either Cohort One or Cohort Two. (The remaining 26 centers and 77 classrooms were in the control group.)

Grantees varied on a number of characteristics, including organizational setting, geographic location, urban/rural status, size, and racial or ethnic composition. Centers had between one and six participating classrooms, with an average of three classrooms participating. Average quality ratings in the Head Start CARES classrooms were similar to the national averages for Head Start on measures of classroom quality.[9]

The Three Program Enhancements

The three interventions described below are referred to as "enhancements" in this report because they enriched and complemented the classroom curricula and practices that already existed in the Head Start system. The three enhancements were selected to represent three types of social-emotional programming. That is, while all three enhancements were aimed at children's

[7] A grantee is the local public or private nonprofit agency that has been designated as a Head Start agency.

[8] Two-thirds of classrooms were full day (more than 3.5 hours) and one-third were part day (3.5 hours or less, taught in the morning or afternoon); some teachers conducted two part-day classes per day.

[9] Classroom quality was measured using the Classroom Assessment Scoring System (CLASS), a widely used measure of teacher-child interactions (Pianta, LaParo, and Hamre, 2008). CLASS is composed of three domains: Instructional Support, Emotional Support, and Classroom Organization. Head Start CARES CLASS scores were compared with the Head Start Family and Children Experience Survey (FACES) CLASS scores. For more information, see Xue et al. (2012).

social-emotional development, they varied in their approach to changing this set of child outcomes by targeting somewhat different teacher practices.

The Incredible Years

The Incredible Years Teacher Training Program focuses on training teachers to create an organized classroom climate that supports children's ability to regulate their own behavior in the context of positive teacher-child relationships. The program includes problem-solving practices, classroom organization (rules and routines), clear and consistent methods for setting limits with the children, a system for rewarding children's positive behavior, praise and incentives to motivate students' learning, and proactive discipline and strategies. For instance, in "circle time" (a large-group activity period), some children may be sitting quietly, ready to learn, while others are playing with their friends and yelling. An Incredible Years teacher might say, "I really like the way Juan is sitting with his hands in his lap," instead of mentioning the children who are misbehaving.

Preschool PATHS

Preschool PATHS (Promoting Alternative Thinking Strategies) focuses on training teachers to use clearly outlined lessons to improve children's social problem-solving skills, including the ability to recognize and regulate emotions, define problems, and engage in "anticipatory planning," which considers the consequences of various reactions to problems. Teachers can use PATHS' weekly lesson plans during circle time, and they can incorporate other activities throughout the rest of the day, such as singing a song about an emotion or painting different emotions on faces, to give children opportunities to practice the targeted skills. In a PATHS classroom, teachers talk about their feelings and encourage children to think about their and others' feelings. For example, if two children are playing nicely together, the teacher might talk about the emotions they had been discussing in their lesson that day. She might say, "How do you think Ann felt when Neveah gave her a hug? That's right, she felt happy! How do you look when you feel happy? What makes you feel happy?"

Tools of the Mind — Play

Tools of the Mind focuses on training teachers to use adult-supported "make-believe" play and other activities to strengthen children's ability to regulate their own behavior, emotions, and thoughts ("self-regulation").[10] The Tools program requires the teacher to restructure the room and the school day, devoting large blocks of time to planning and enacting role-

[10]Make-believe (or "pretend") play is a form of high-level play in which children use their imaginations to role-play, become different "characters," play out different stories, and enact various scenarios that rely on and encourage creativity.

playing games. A central component of Tools, for instance, is a daily 50-minute period of make-believe play to enhance children's planning skills, understanding of social roles (such as "parent," "friend," or "family"), memory and focused attention, and social-emotional understanding. This time is characterized by "scaffolding," in which the teacher supports and encourages the children in their attempts to take on a challenging task or acquire a skill that is just beyond their current level of ability. For example, a child might first draw a picture showing that she intends to play house and will be the mother. The teacher would then help the child write out and expand on her plans, asking, "What will you do as the mother? How could you make dinner for your children?" She would help the child come up with a more complex role-play scenario. Then, while the child is playing, the teacher might help her expand the role-play even further, asking questions such as, "What might you need before you are able to cook dinner? How would you get to the grocery store?" In this way, the teacher helps the child to build self-regulation, including mental flexibility, memory, and inhibition of automatic responses, by creating a plan, sticking with a role for an extended period of time, and shifting between her own perspective and the perspective of the character she is pretending to be.

The Professional Development Model

The professional development model for the Head Start CARES demonstration included structured teacher training with follow-up coaching in the Head Start classrooms.

Teacher training included the use of well-developed manuals and other materials for each of the three enhancements; delivery of four to six training sessions to both lead and assistant teachers and to coaches throughout the school year; and trainers' support of coaches and teachers through classroom visits two to three times a year.

Coaching involved 60 minutes of scheduled in-classroom observation and a 30-minute meeting each week with the lead and assistant teachers jointly. Coaches, who were selected by the grantees, reflected with teachers on their practice, identified and helped resolve issues that hindered implementation of the enhancements, demonstrated techniques to use in the classroom, and set goals and planned for the next week. Fifty-two coaches provided support to an average of four classrooms each. The Head Start CARES coaching component was designed to focus on the teachers' practices, foster a collaboration between the coach and both teachers, provide instruction to teachers, identify areas for support, and place the coach in an evaluative but nonsupervisory position.

Technical Assistance and Program Monitoring

MDRC provided technical assistance to the developers of the three enhancements, trainers, coaches, teachers, and a member of each grantee's staff (called the "grantee liaison"). The technical assistance included the development of materials to support grantees' selection of

coaches, a toolkit to support the coaching process, a launch meeting to introduce all key stakeholders to the demonstration and the enhancements, support for planning the teacher training sessions, using data from a management information system (MIS) to determine what kind of technical assistance was needed, regular conference calls for coaches across the grantees, MDRC site teams' regular check-ins with grantee liaisons, and MDRC technical assistance team's check-ins with enhancement developers.

Program monitoring, also provided by MDRC, included use of the MIS, which served as a repository for coaches and trainers to submit information about how teachers were implementing the enhancements and how often coaches, teachers, and trainers interacted. The system included online weekly and monthly surveys. As part of ongoing monitoring, classrooms were rated on a scale of 1 (low) to 5 (high), with a rating at or above a 3 considered to be satisfactory.

Findings

This report focuses on whether the professional development supports and the in-classroom social-emotional enhancements were implemented at scale with fidelity to the original design — that is, in the amount and with the quality that the developers intended, as described in Box ES.1.

Overall, high levels of participation in the training and coaching components supported satisfactory levels of classroom implementation of all three enhancements, which received fidelity scores of 3 or higher. Despite challenges and some variation in the fidelity with which the three enhancements were implemented in the classroom, each enhancement led to the changes in teacher practices that it was designed to influence. Thus, it appears that the demonstration did ensure a fair test of large-scale implementation of the three enhancements, thereby providing a sound basis for evaluating their impact on children and classrooms in the Head Start system.

Fidelity to the Professional Development Model for Teacher Training and Coaching

On the whole, teacher training and coaching were delivered as intended to support implementation of the enhancements in the classroom.

- **Training quality and attendance were generally strong across all grantees and enhancements.**

Teacher attendance at the training sessions was high, with 93.5 percent of classrooms sending a lead teacher to training, and lead and assistant teachers attending together 82.4 percent of the time. Teachers reported that the training material was presented in an accessible way and that the trainers were supportive and concerned about their progress. Teachers also reported that

Box ES.1

Defining Fidelity in Head Start CARES

Fidelity in Head Start CARES focused on two components: *implementation* fidelity, meaning fidelity to the professional development model; and *intervention* fidelity, meaning fidelity to the design of the enhancement.

Implementation Fidelity: Fidelity to the Professional Development Model

Training Fidelity. Fidelity to the training component was achieved when grantees offered all of the planned training sessions, trainers delivered the full content of the training, and lead and assistant teachers attended enhancement training sessions together. Fidelity was assessed by examining (1) the dosage (that is, frequency and duration) of training received; (2) the quality of the training received; and (3) the trainer support received.

Coaching Fidelity. Fidelity to the coaching component was assessed by examining (1) the dosage of coaching received in classrooms; and (2) the quality of the coaching received in classrooms.

Intervention Fidelity: Fidelity of Classroom Implementation

Fidelity to the enhancement design was rated on a scale of 1 (low) to 5 (high), with a rating of 3 considered satisfactory. The rating reflected whether the teachers, children, and classrooms were clearly steeped in an evidence-based, social-emotional enhancement. For example, one item in the scale was, "The children are actively engaged in [specific enhancement] throughout the day. It is not just seen as a special event." Fidelity to the enhancement as designed was measured in terms of dosage and quality: high fidelity indicated that the enhancement was implemented exceptionally well and often, and low fidelity indicated that the enhancement was implemented poorly or rarely.

the training supported their relationships with the coaches and prepared them to successfully implement the enhancement's practices with their students.

- **Coaching dosage (frequency and duration) and coaching quality were generally high.**

Coaches met with teachers weekly to reflect on implementation for 51 minutes on average, which was longer than expected. Coaches met with their trainers for feedback and support as expected, about two to three times a month on average, although this rate varied by each enhancement's plan for coach support. Trainers found the coaches to be of moderately high quality — rating them 3.97 out of a possible 5, meaning that the coaches were professional, knowledgeable, and attentive to teachers' needs. Incredible Years and Tools of the Mind trainers gave

moderately high ratings to their coaches (3.74 and 3.89, respectively), and Preschool PATHS trainers gave a high rating to their coaches on average (4.30).

Fidelity to the Enhancement Design

- **All three enhancements were generally well received by teachers and other staff.**

Teachers reported that the enhancements made sense to them and that they were able to implement them in the classroom as the developers intended. Teachers did, however, feel that some of the less scripted, more theoretical enhancement components (like supporting make-believe play) were more difficult to implement than the more highly scripted activities (such as using written lessons). When asked in interviews how children responded to the enhancements, lead and assistant teachers, center directors, and other center-based staff believed that children benefited from them.

- **Coaches and trainers reported that each of the enhancements was implemented with satisfactory fidelity, as defined by quality and dosage. Fidelity improved over time.**

Both coaches and trainers evaluated fidelity of classroom implementation over the course of the year, with the average Head Start CARES classroom scoring 3.47 out of a possible 5. As rated by coaches, fidelity improved between September and April from acceptable implementation (around a score of 3) to proficient implementation (around a score of 4). Coaches rated fidelity somewhat higher than trainers did. Coaches reported that most (83 percent) Head Start CARES classrooms scored higher than the "satisfactory" threshold of 3 in January, and in April, 60 percent of Head Start CARES classrooms had scored higher than 4, indicating that they were implementing the enhancements well and consistently.

- **Fidelity in the classroom varied somewhat across the three interventions. The structure, goals, and activities that are intrinsic to each enhancement shaped their implementation.**

As rated by coaches and trainers, the average fidelity score for The Incredible Years (3.69 over the year) and Preschool PATHS (3.73) exceeded the "satisfactory" threshold of 3. Tools of the Mind implementation was not as strong (an average of 2.97 over the year), but was close to the rating of 3 that was considered satisfactory. Additionally, data about the ease and challenges of implementing the enhancements were synthesized from site visits, group technical assistance calls with coaches, and interviews with teachers, coaches, and trainers. Themes emerged from this review that reflected how the structure, goals, and activities of each enhancement were integral to the way in which teachers implemented it.

The Incredible Years

The Incredible Years enhancement may have been relatively easy for teachers to implement because they did not need to alter their classroom schedules to allow for additional lessons and activities. However, it may have been more difficult for teachers who had been using specific classroom management techniques to integrate the Incredible Years techniques into their practice. Incredible Years implementation required teachers to be mindful of their moment-to-moment interactions with children, and in some cases they had to break old habits and develop new ones.

Preschool PATHS

Preschool PATHS was also relatively easy for teachers to implement because it was generally highly structured, took up a defined and limited amount of time each week, and was well scripted. PATHS included a regular daily activity, a weekly lesson during circle time, a weekly activity that extended the concept from the week's lesson into other parts of the day, and generalization, in which teachers integrate the themes and core practices of the specific lesson into different activities throughout the day and week.

Tools of the Mind

Tools of the Mind required teachers to physically rearrange their classrooms and implement a block of Tools-specific activities daily. While some of the activities had helpful manuals and supportive materials, and were easy to implement, other activities required a considerable amount of effort by the teachers, including their acceptance of the enhancement's general philosophy. Tools also required a high degree of teacher focus and individualized attention for each child; instead of doing paperwork during the children's play time, for example, which is fairly typical, the teachers had to actively engage children in playing make-believe and had to intentionally scaffold their efforts.

Implementation Challenges

- **While teachers found it relatively easy to implement The Incredible Years and Preschool PATHS, they still faced some significant implementation challenges across all three enhancements.**

Challenges implementing the enhancements included a lack of basic classroom supplies (such as books or play clothes), as well as the need for translation of enhancement materials and manuals into Spanish. Teachers who taught two part-day sessions daily had difficulty finding time to prepare and meet with coaches during the school day, although they had more flexibility at the end of the week because they generally taught Monday through Thursday only. Additionally, teachers had only limited time to talk and share materials and support across classrooms,

and there was little collaboration within centers, which made it difficult for teachers to work together to find solutions to the implementation challenges they experienced. Organizational requirements that were triggered by, for example, new curricula or assessments made it difficult for teachers to make time to implement Head Start CARES. In addition, Head Start programs must comply with Head Start Program Performance Standards and be monitored regularly, which may have contributed to teachers' stress or feeling that study participation was just one more burdensome task.

- **The level of organizational support that grantees provided for the enhancements influenced fidelity to the original design when the enhancements were delivered in the classroom.**

The Head Start CARES data do not permit a formal test of the relationship between organizational capacity and overall fidelity. However, organizational support in the demonstration was evaluated from many different perspectives. In order to identify characteristics of a strong grantee, assessments by coaches, trainers, developers, and the research team were combined into a single rating system. These ratings suggest that organizational capacity played a key role in ensuring quality professional development and classroom implementation of the enhancements.

The grantees that demonstrated greater fidelity sent teachers strong messages of support for the enhancements, hired coaches with appropriate qualifications in a timely manner, provided administrative supervision and support for coaches, supported efforts to cross-walk and integrate the enhancement with their core curriculum, made time and space available for teacher training, and devised creative solutions to time management challenges. Among grantees that were rated lower on organizational support, messaging and communication between center and grantee staff were consistently cited as a challenge. The research team's perception was that grantee "buy-in" of and opinions about specific enhancements also seemed to influence implementation in the classroom.

Did Implementation of the Enhancements Lead to Changes in Teacher Practice?

- **Each enhancement emphasized a specific teacher practice. As hypothesized, these practices improved in the program group classrooms, where the enhancements were implemented, compared with the control group classrooms.**

In the Head Start CARES demonstration, changes in teacher practice were conceptualized as "first order" effects; that is, teacher practice was considered the direct target of these enhancements. It was hypothesized that in order to see change in "second order" outcomes such as classroom interactions or children's social-emotional behaviors, change would first need to be

observed in the "first order" practices. Information about teacher practice was collected through an independent classroom observation called the Adapted Teaching Style Rating Scale (Adapted TSRS).[11] The measure focused on three distinct practices, representing each of the enhancements, and rated classrooms from 1 (low) to 5 (high).[12] The hypothesis for each enhancement is outlined below, and the results of the Adapted TSRS observations appear in Table ES.1.

The Incredible Years

The Incredible Years enhancement was expected to affect teachers' classroom management, which includes the ability to apply consistency and routines, preparedness for the day, awareness of what is happening around the classroom, and the use of positive behavior management practices instead of negative behavior management practices — that is, focusing on positive behavior ("Juan is sitting quietly") or using incentives to encourage good behavior rather than reprimanding children for negative behavior ("Timmy, stop yelling!"). In fact, on average, The Incredible Years resulted in small to moderate improvements in classroom management scores and social-emotional instruction scores in the centers that were in the program group, compared with the control group centers' average scores. These impacts are approximately the same magnitude as the lower range of effects that were observed in two smaller, more intensive trials of The Incredible Years (CSRP, formerly known as the Chicago School Readiness Project, and the Foundations of Learning demonstration).[13]

Preschool PATHS

PATHS was expected to affect teachers' social-emotional instruction, which includes modeling appropriate labeling (that is, identification) and regulation of emotions, supporting children's expression of emotions (whether positive or negative), encouraging children to regulate their emotions, facilitating children's social awareness and empathy, and teaching children social problem-solving skills. In fact, PATHS had a large positive impact on social-emotional instruction scores in program group centers compared with the control group centers' average scores. This impact was comparable to the upper range of effects found in a previous trial of PATHS and a language intervention (REsearch-based, Developmentally Informed, or REDI).[14]

[11]The Adapted TSRS was created by C. Cybele Raver, Celene E. Domitrovich, Mark T. Greenberg, Pamela A. Morris, and Shira Kolnik Mattera as part of the Head Start CARES demonstration.

[12]This scale is different from the one described earlier, on page 6, which measured fidelity.

[13]See Raver et al. (2008) for the CSRP study, formerly known as the Chicago School Readiness Project (not associated with The Chicago School®, which is a trademark of The Chicago School of Professional Psychology), and Morris et al. (2013) for the Foundations of Learning study.

[14]Domitrovich et al. (2009).

Head Start CARES Demonstration

Table ES.1

Classroom-Level Impacts: Teacher Practice Observations

Component	Control Group Rating	Incredible Years (IY) Program Group Rating	Incredible Years (IY) Difference (IY vs. Control)	Incredible Years (IY) Effect Size[a]	Preschool PATHS Program Group Rating	Preschool PATHS Difference (PATHS vs. Control)	Preschool PATHS Effect Size[a]	Tools of the Mind Program Group Rating	Tools of the Mind Difference (Tools vs. Control)	Tools of the Mind Effect Size[a]
Classroom management	3.79	4.09	0.30 **	0.44	3.90	0.12	0.17	3.89	0.10	0.15
Social-emotional instruction	1.76	1.98	0.22 *	0.30	2.42	0.66 ***	0.92	1.78	0.02	0.02
Scaffolding	1.44	1.41	-0.03	-0.06	1.48	0.05	0.09	1.78	0.35 ***	0.68
Sample size[b]										
Center	26	26			26			26		
Classroom	77	77			77			76		

SOURCE: MDRC calculations based on observational assessments completed using the Adapted Teaching Style Rating Scale (Adapted TSRS).

NOTES: Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Rounding may cause slight discrepancies in sums and differences.

All models are based on pooled analyses of program group status, controlling for the pretest and blocking variable used to randomly assign 4, 8, or 12 centers to the program group.

Each component was rated on a scale of 1 (low) to 5 (high), reflecting fidelity of classroom implementation.

[a]Effect size is calculated by dividing the impact of the program (the difference between the means for the program group and the control group) by the standard deviation for the control group.

[b]For all variables in the table, data are available for 100 percent of the sample.

Tools of the Mind

Tools of the Mind was expected to affect teachers' scaffolding of peer interactions and play by helping children plan for and expand their activities in ways that are challenging or novel. In fact, Tools exerted a moderate to large increase in the average scaffolding scores in the program group centers, compared with the control group centers' average scores. In a previous small-scale Tools trial, effect sizes for the early childhood environment and teachers' scaffolding practices were substantially larger than those found in this study.[15]

Summary and Conclusion

The Head Start CARES enhancements were implemented at scale as intended — that is, with fidelity to their design — and led to the hypothesized effects on teacher practice. Notably, a substantial support system helped to achieve these results. The support system included interventions that had prepared manuals and other materials to use in the classroom, knowledgeable trainers, and intensive coaching, as well as technical assistance and ongoing monitoring by a centralized entity using a flexible MIS. Fidelity was also facilitated when all involved parties demonstrated a sustained and coordinated commitment, including a clear and consistent message from the grantees' administration about the importance of the intervention.

In Head Start CARES, the theory of change specifies how the enhancements are hypothesized to change child outcomes at the end of the preschool year, as follows: (1) implementation of the enhancements with fidelity would strengthen existing teacher practices and/or lead to changes in teacher practice; (2) changes in teacher practice would lead to improved classroom interactions; and (3) improved classroom interactions would lead to improved child outcomes. This report focuses on the first of those three steps, and concludes that each enhancement was implemented with fidelity to its developer's design, which led to the expected changes in teacher practice. A separate report on the Head Start CARES demonstration examines the impacts of the three enhancements on teacher-child interactions and children's outcomes.[16]

[15]Barnett et al. (2008).
[16]Morris, Mattera, Castells, and Bangser (forthcoming).

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Chapter 1

Introduction

Social-emotional skills and competencies are crucial to young children's development. The Center on the Social and Emotional Foundations for Early Learning defines social-emotional development as the developing capacity of the child from birth through five years of age to form close and secure relationships with adults and peers; experience, regulate, and express emotions in socially and culturally appropriate ways; and explore the environment and learn — all in the context of family, community, and culture.[1]

Unfortunately, low-income children face a number of risks to their social-emotional development, generating gaps in social-emotional functioning between these children and their more affluent peers that are observed at the start of children's formal schooling and remain or increase during the elementary school years.[2] One potential pathway to closing this gap and boosting children's readiness for school is to intervene directly by preparing them to receive instruction and take better advantage of learning opportunities,[3] and to get along better with teachers and peers.[4]

Kindergarten teachers rank children's social-emotional competence and its associated behavioral challenges as their top concern.[5] Yet, many preschool teachers report that they lack skills to address the behavioral and emotional challenges that they encounter in their classrooms.[6] Only a small base of evidence exists about specific interventions to bolster children's social-emotional competencies, and even less evidence exists for the various support systems that have been (or could be) put in place to implement those interventions.[7] Such evidence comes from small-scale evaluations in which the developers of the interventions were directly involved and that they actively oversaw, yielding little information about their potential effectiveness on a national scale and in a larger and more diverse set of classrooms. Additionally, these interventions each used unique support systems to facilitate their implementation, again providing little guidance about how to consistently support implementation of social-emotional programs on a large scale.

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[1] Yates et al. (2008).

[2] Alexander, Entwisle, and Kabbani (2001); Brooks-Gunn, Duncan, and Aber (1997); Dodge, Pettit, and Bates (1994); Entwisle and Hayduk (1988); Hamre and Pianta (2001).

[3] McLelland, Morrison, and Holmes (2000); Raver, Garner, and Smith-Donald (2007).

[4] Morris et al. (2010); Raver et al. (2008).

[5] La Paro and Pianta (2000).

[6] Lloyd and Bangser (2009).

[7] Bierman et al. (2008a); Consortium on the School-Based Promotion of Social Competence (1994); Raver et al. (2008); Webster-Stratton, Reid, and Hammond (2001).

The Head Start CARES ("Classroom-based Approaches and Resources for Emotion and Social skill promotion") demonstration was designed to strengthen the evidence base for programs that focus on young children's social-emotional competence. The demonstration implemented and tested three promising interventions that were designed to support children's social-emotional competencies in a large number of diverse classrooms that operated within the Head Start system, a federal program that aims to increase school readiness among low-income children from birth to age five years by boosting their cognitive, social, and emotional development. The same comprehensive model of professional development, technical assistance, and program monitoring was used to support each of the three approaches, in order to help ensure that they were implemented as designed. The support system was especially important because of the rapid expansion, or "scale-up," that the demonstration required for full implementation, which involved 104 Head Start centers with 307 classrooms in total.

This report, focusing on how well the three interventions and the support system were implemented, is part of a larger study of the Head Start CARES demonstration that also examines the impact of the approaches on classrooms and the children in them. The demonstration was conceived and sponsored by the Office of Head Start and the Office of Planning, Research and Evaluation in the Administration for Children and Families in the U.S. Department of Health and Human Services. The demonstration was conducted by MDRC, a nonprofit, nonpartisan education and social policy research organization, in collaboration with MEF Associates, Survey Research Management, and several academic partners.

Most notably, the findings demonstrate that it is possible to implement well-structured social-emotional interventions on a large scale in a range of Head Start classrooms across the country. A separate report on Head Start CARES presents the impacts of each of the interventions on teacher-child interactions and on outcomes for children.[8]

The Head Start CARES Demonstration

Head Start CARES built on compelling research that shows that a focus on social-emotional competence is critical for preschool quality as well as children's longer-term development.[9] As noted above, a primary goal of the demonstration was to ensure a fair test of the large-scale implementation of three different social-emotional interventions. The demonstration included a systematic framework to support implementation scale-up and replication, including program packages consisting of prepared manuals and other materials to use in the classroom, ongoing teacher training and coaching, technical assistance, and performance feedback.

[8]Morris et al. (forthcoming).

[9]Dobbs, Doctoroff, Fisher, and Arnold (2006); Hawkins et al. (1999); Kellam et al. (1998); McWayne, Fantuzzo, and McDermott (2004); Raver et al. (2008); Reid, Eddy, Fetrow, and Stoolmiller (1999).

The three evidence-based, social-emotional interventions selected for the Head Start CARES demonstration are The Incredible Years Teacher Training Program,[10] Preschool PATHS (Promoting Alternative Thinking Strategies),[11] and Tools of the Mind — Play.[12] The demonstration referred to the three interventions as "enhancements" because they were intended to enrich and complement practices and curricula that already existed in Head Start classrooms.

The three enhancements were selected to represent three types of social-emotional programming. That is, while all three enhancements were aimed at children's social-emotional development, they varied in their approach to changing this set of child outcomes by targeting somewhat different teacher practices. Enriching social-emotional development is implicit in the Incredible Years classroom management and behavior management approach; Preschool PATHS uses an instructional approach to improving social-emotional development through structured lessons that are designed to teach children ways to think about emotions and respond to peers in social interactions; and Tools of the Mind promotes children's learning and regulation of behaviors, emotions, and thoughts through structured "make-believe" (or "pretend") play activities — a form of high-level play in which children use their imaginations to role-play, become different "characters," play out different stories, and enact various scenarios that rely on and encourage creativity.

Testing Social-Emotional Enhancements in the Context of Head Start

Head Start, the largest federally funded early childhood program in the United States, is particularly well suited for testing varied approaches to improving teachers' classroom practices. The program addresses the needs of low-income families and children in order to narrow the gap between disadvantaged children and their higher-income peers. Head Start provides early childhood education and care combined with comprehensive services during the preschool period to improve children's social competence, health, and academic readiness for school.

Because of its origin as a community-based program, Head Start provides an especially useful setting for testing the scale-up of evidence-based enhancements in a range of contexts. While focused on the common goal of serving low-income children and families using a "whole child" approach,[13] Head Start programs reflect a wide range of quality, resources, and pedagog-

[10]The Teacher Classroom Management Program, one of three Incredible Years programs, was studied in Head Start CARES.

[11]Domitrovich, Greenberg, Kusche, and Cortes (2004).

[12]Barnett et al. (2008); Domitrovich, Cortes, and Greenberg (2007); Webster-Stratton, Reid, and Hammond (2004).

[13]A "whole child approach" focuses on all aspects of development — physical, social-emotional, and cognitive.

ical theories that could interact with new classroom practices to support or hinder implementation. Moreover, Head Start programs are offered in rural, suburban, and urban contexts, serving a diverse group of families across the country. Evaluating the implementation of evidence-based enhancements in these varied contexts is important for determining whether they can be delivered well, if they can universally support children's social-emotional development, and under which contexts they can be implemented most effectively.

Characteristics of Participating Grantees

The Head Start CARES demonstration took place in 104 Head Start centers (each of which houses a varying number of classrooms) with 307 classrooms in total, administered by 17 grantees/delegate agencies (referred to as "grantees" throughout this report) — the local public or private nonprofit agencies that received federal funding to operate Head Start programs — located across the country. The three enhancements were implemented within the context of a randomized control trial in order to obtain rigorous evidence of their effectiveness. The demonstration, which operated from 2009 to 2011, used a lottery-like process to randomly assign the Head Start centers to one of the three different social-emotional enhancements or to a "business as usual" control group. (See Figure 1.1.) Random assignment ensures that any differences (or "impacts") that are observed in outcomes between the program and control groups can be attributed with a high level of confidence to the intervention that is being evaluated. For each grantee, at least four centers were randomly assigned to one of the three different social-emotional enhancements or to a control group; all three enhancements were tested by each grantee, but no more than one enhancement was implemented in each center. In each case, teachers were trained in the enhancement that was assigned to their center and then were provided with coaches, who helped them implement the new practices in their classrooms. The intervention was conducted for one year by each grantee.

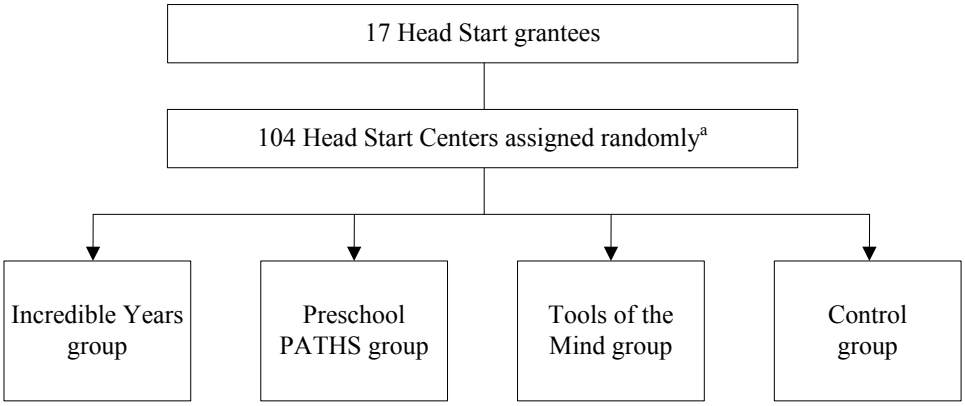
As discussed in more detail in Appendix A, the selection of grantees was a multi-step process that began with a population of potentially eligible Head Start grantees identified from a Program Information Report (PIR) database, which is held by the Office of Head Start. Grantees were stratified by region of the country, racial/ethnic composition of child enrollment,[14] and whether they were located in a metropolitan or rural area, or spread across both metropolitan and nonmetropolitan environments (a measure known as "urbanicity"[15]). Region was defined as one of four groups: Northeast, South, Midwest/Plains, and West. Four grantees in the Northeast

[14]See Appendix A for more information on racial/ethnic designations.
[15]See Appendix A for more information on urbanicity.

Head Start CARES Demonstration

Figure 1.1

Randomization Design



NOTE: [a]Nine grantees had 4 participating centers each; seven grantees had 8 participating centers each; and one grantee had 12 participating centers.

participated in the Head Start CARES demonstration during the 2009-2010 school year, forming Cohort One, and 13 grantees from the rest of the country participated during the 2010-2011 school year, forming Cohort Two. As shown in Figure 1.2, the 17 Head Start grantees that were selected to participate in the Head Start CARES demonstration were located in 10 states across the nation and were distributed fairly equally across the four regions of the country, with four grantees in the Northeast, four in the West, three in the South, and six in the Midwest/Plains.

The grantees varied considerably in terms of their venue, size, and neighborhood context. More than one-third of grantees were situated within community action agencies,[16] one-third were operated by stand-alone nonprofit entities, and about one-fourth were located in large local school systems. The grantees were spread approximately evenly among three size categories: about one-third of grantees were "small" (enrolling fewer than 800 children), one-third

[16]A community action agency is either a public or private nonprofit organization, funded primarily by a Community Services Block Grant (CSBG) to administer and coordinate programs on a communitywide basis. These agencies provide services that address the full range of family needs, from child development programs, to youth and adult employment and training programs, and services for seniors. Stand-alone nonprofit entities are organizations without governmental affiliations, such as religious institutions or nonprofit hospitals. For more information, see National Community Action Foundation (2011).

Head Start CARES Demonstration

Figure 1.2

Grantee Locations

were "medium" (enrolling between 800 and 1,500 children), and another third were "large" (enrolling more than 1,500 children). Across the two cohorts, nine grantees had 4 participating centers each, seven grantees had 8 participating centers each, and one grantee had 12 participating centers.

The centers were located in a variety of neighborhoods. Just under half (48 percent) of the centers were in primarily residential areas. Observers, who did not know the intervention status of the classrooms, were asked to rate the neighborhood context during site visits; these observers indicated that the centers were generally situated in safe areas and were in fair condition — that is, they mostly felt comfortable in the area, and the buildings and homes that surrounded the center of the neighborhood were in slightly better than fair condition.

Characteristics of Participating Centers

Between one and six classrooms in each Head Start center participated in the Head Start CARES demonstration, with an average of three classrooms participating per center. While the grantees varied, a typical Head Start CARES classroom had a minimum of one lead teacher and one assistant teacher. Two-thirds of classrooms were full day (more than 3.5 hours), and one-third of classrooms were part day (3.5 hours or less, in the morning or afternoon). In comparison, 54 percent of the children in programs that are based in Head Start centers nationally are enrolled in full-day programs, and 46 percent are in part-day programs. Some of the part-day classrooms in the demonstration operated as double sessions — that is, teachers taught one class in the morning and a second, separate class to another group of children in the afternoon. In double-session classrooms, only the first session was included in the research study.

The Head Start CARES social-emotional enhancements were implemented on top of "base curricula" that varied by grantee. As is typical in Head Start, where nearly 70 percent of programs use the Creative Curriculum or High/Scope curricula,[17] the majority of Head Start CARES grantees used Creative Curriculum (12) or High/Scope (3). Of the remaining two

[17]Aikens et al. (2011). The Creative Curriculum for Preschool is based on the following five fundamental principles, which guide practice and help intentionally set up preschool programs: (1) positive interactions and relationships with adults provide a critical foundation for successful learning; (2) social-emotional competence is a significant factor in school success; (3) constructive, purposeful play supports essential learning; (4) the physical environment affects the type and quality of learning interactions; and (5) teacher-family partnerships promote development and learning. See www.creativecurriculum.net for more information. High/Scope is a comprehensive curriculum and teaching practice that focuses on six dimensions of school readiness: (1) approaches to learning; (2) language, literacy, and communication; (3) social and emotional development; (4) physical development; (5) health and well-being; and (6) arts and sciences. Children engage in both individual and social play, participate in small and large groups, assist with clean-up, socialize during meals, develop self-care skills, and exercise their small and large muscles. See www.highscope.com for more information.

grantees, one reported that High/Scope and a state-adapted core curriculum served as the primary curricula, and the other grantee reported that DLM Early Childhood Express was the primary curriculum.[18]

Head Start CARES teachers were relatively typical of the general population of Head Start teachers. As shown in Table 1.1, lead teachers located in Head Start CARES classrooms were predominantly female (96 percent), had at least a bachelor's degree (62 percent), and were, on average, 43 years of age. The majority (63 percent) had taught for at least 10 years. Over half (64 percent) of Head Start lead teachers nationally have at least a bachelor's degree, and the average Head Start teacher has been in the classroom for nearly nine years (not shown in table).[19]

As shown in Table 1.2, Head Start CARES classrooms were also similar to classrooms in a nationally representative study of Head Start centers on the three most widely used dimensions of the Classroom Assessment Scoring System (CLASS) — Preschool Version,[20] a nationally utilized measure of classroom quality that focuses on three domains: Instructional Support, Emotional Support, and Classroom Organization. Nationally, scores on the CLASS Instructional Support domain are usually the lowest, with more elevated Emotional Support and Classroom Organization scores indicating that preschool classrooms are generally warmer emotionally and more highly structured than they are academically focused.[21]

Head Start serves a racially and ethnically diverse group of children, with about a third nationally identified as African-American and a third as Hispanic. The Head Start CARES sample was similarly diverse, with 33 percent of the children identified as non-Hispanic, African-American, and 43 percent identified as Hispanic. Hispanic children were slightly overrepresented, while non-Hispanic, white/other children were underrepresented (32 percent nationally versus 24 percent in the study sample).

[18]The DLM Early Childhood Express offers a comprehensive, child-centered curriculum with strong teacher support consisting of daily "read-alouds" to enrich students' imagination; nonfiction focus to build background, vocabulary, and oral language; rhymes, songs, and dances to develop phonological awareness; "how-to science" to teach observing and investigating; manipulatives (hands-on objects) and games to convey math and science concepts; and social emotional instruction to develop interpersonal skills. See www.mheonline.com for more information.

[19]U.S. Department of Health and Human Services, Administration of Children and Families (2012).

[20]See West et al. (2011) for the nationally representative study of Head Start centers. See La Paro, Pianta, and Stuhlman (2004) for a discussion of CLASS.

[21]National Center on Quality Teaching and Learning (n.d.); Minnesota Early Learning Foundation, Research Consortium (2011).

Head Start CARES Demonstration

Table 1.1

Selected Baseline Characteristics for Overall Lead Teacher Sample

Characteristic	Full Sample
Age (years)	42.87
Female (%)	96.17
Race and ethnicity (%)	
White, non-Hispanic	27.21
African-American, non-Hispanic	37.81
Hispanic	29.33
Other/multiracial[a]	5.65
Education (%)	
Lower than an associate's degree	11.34
Associate's degree but no bachelor's degree	27.15
Bachelor's degree but no graduate degree	53.61
Graduate degree	7.90
Teaching experience (%)	
Less than 3 years	6.97
3 years to <10 years	30.31
At least 10 years	62.72
Sample size[b]	307

SOURCE: MDRC calculations based on the spring lead teacher self-survey (baseline).

NOTES: [a]"Other" includes Asian, Native Hawaiian/Pacific Islander, and American Indian/Alaska Native.

[b]For all variables in the table, data are available for at least 90 percent of the sample.

Ensuring a Fair Test of the Enhancements in the Context of Scale-Up

Before the Head Start CARES demonstration was launched, each of the three enhancements had been shown to have positive impacts in at least one randomized control trial with low-income populations that were similar to those in Head Start. Four randomized control trials of the Incredible Years Teacher Training Program have been conducted in the United States with low-income children and published, two of which combined the Incredible Years teacher program with clinical classroom consultation and stress management training. Impacts on children's social-emotional outcomes in the latter two trials ranged from 0.22 to 0.43 of a standard

Head Start CARES Demonstration

Table 1.2

Classroom Climate of Head Start CARES and National Samples

Domain	CLASS Score[a]	
	Head Start CARES	FACES 2009[b]
CLASS Instructional Support	2.5	2.3
CLASS Emotional Support	5.2	5.3
CLASS Classroom Organization	4.7	4.7
Sample size (classrooms)[c]	307	370

SOURCE: MDRC calculations based on observational assessments completed using the Classroom Assessment Scoring System (CLASS); see Pianta, LaParo, and Hamre (2008).

NOTES: [a]The CLASS score is based on a scale of 1 (low) to 7 (high).

[b]The Head Start Family and Child Experiences Survey (FACES) is a nationally representative study of program performance (Moiduddin et al., 2012).

[c]For all variables in the table, data are available for at least 98 percent of the Head Start sample.

deviation — in other words, the program had effects ranging from small to moderate on a number of social-emotional outcomes.[22] Preschool PATHS alone or with a literacy or professional development component has been tested in three randomized control trials involving Head Start, also published, with impacts on children's social-emotional outcomes ranging from 0.12 to 0.48 standard deviation.[23] Tools of the Mind has been tested in one randomized control trial, which took place in an urban preschool and had an impact on children's problem behaviors of 0.47 standard deviation.[24]

However, because the enhancements had been previously implemented only on a smaller scale, little infrastructure existed for supporting larger-scale implementation. Each program had manuals, training materials, trainers, and some form of on-the-ground coaching or

[22]An effect size defines the proportion of a change — specified by change in the standard deviation — that is attributable to the intervention. See Box 5.2 in Chapter 5 for more information about effect sizes. See Morris et al. (2010); Raver et al. (2008). For the other Incredible Years studies, see Murray, Murr, and Rabiner (2012); Reid, Webster-Stratton, and Hammond (2003); Webster-Stratton, Reid, and Hammond (2001); and Webster-Stratton, Reid, and Hammond (2004).

[23]There have been three randomized control trials of Preschool PATHS, one of which examined PATHS alone (Domitrovich, Cortes, and Greenberg, 2007), a second trial that combined PATHS with a literacy curriculum (Bierman et al., 2008a; Bierman et al., 2008b), and a third trial of Preschool PATHS plus a professional development component (Hamre, Pianta, Mashburn, and Downer, 2012).

[24]Barnett et al. (2008).

technical assistance, but often there were not enough trainers to start up the program for many of the grantees at the same time or the trainers were not easily able to reach grantees in all parts of the country. Implementing the enhancements on a large scale to test their effectiveness in a manner consistent with the developers' intent for the appropriate intervention amount and quality called for significant supports. To provide in-depth classroom support and technical assistance, a comprehensive support system, including both training and coaching, as well as technical assistance, was needed. In addition, implementation in a research context created further challenges that were tied to the Head Start CARES design, which required random assignment for different centers within one grantee to different enhancements, a configuration that would rarely occur during normal implementation of an enhancement; that is, it is unlikely that different enhancements would be used by the same grantee in a non-study situation. Maintaining fidelity to the design of the enhancements, by making sure that they were implemented fully while scaling up, was considered a key goal of the Head Start CARES demonstration, since it was crucial to providing a fair test of the theory of change and the program impacts.

The effort to maintain fidelity included implementing a professional development model with enhancement training by highly skilled trainers who had the proper credentials, as well as a standardized coaching component. Both facets of the professional development model were conceptualized as a way to minimize problematic adaptations and to support the need to bring the enhancements to scale quickly. Trainers and coaches played an important role in supporting high-quality implementation of the professional development model as well as the teachers' implementation of the enhancements in the classroom. A centralized technical assistance team used an online management information system to monitor the coaching process and classroom implementation in real time and to systematically collect implementation data. Technical assistance, consisting of data-based quality monitoring and improvement and support of coaches and grantees, was provided by an MDRC-based technical assistance team working with the enhancement developers and trainers. Developers, coaches, trainers, and the technical assistance team worked together to integrate the enhancements into the existing Head Start context within each center.

Given the necessity for such support in scaling up these enhancements, the Head Start CARES demonstration falls between an efficacy trial (which, as defined by the Institute of Education Science, is designed to evaluate whether or not a fully developed intervention is efficacious under limited or ideal conditions) and an effectiveness study (which is designed to evaluate whether a fully developed intervention that has evidence of efficacy is effective when implemented under typical conditions through an independent evaluation).[25] The level of implementation support was less than what might be seen in small, tightly controlled efficacy stud-

[25]See University Council for Educational Administration (n.d.) for the Institute of Education Science's definition of an "efficacy study" versus an "effectiveness study."

ies, but it extended beyond what is typical when preschool centers take on a new initiative.[26] Along with the complexities of the research design, the existing capacity of developers to support implementation of the enhancements at the scale required by Head Start CARES was not always sufficient. Given the number of trainers available, coaching and technical assistance were needed to ensure strong classroom implementation and a fair test of effectiveness.

Overview of the Report

The remainder of the report is organized as follows: Chapter 2 describes the enhancements in detail and the support system that was put in place to strengthen implementation. Chapter 3 focuses on the findings that were observed about the professional development model — namely, the dosage (that is, the frequency and duration) and quality of the training and coaching that were provided. Chapter 4 discusses classroom implementation of the three enhancements and factors contributing to implementation, such as teacher and organizational characteristics. Chapter 5 addresses whether implementation resulted in changes in teacher practice in participating classrooms. Chapter 6 provides an overview of the findings and lessons from this implementation study of the Head Start CARES demonstration.

[26]For example, see Odom (2009) and Wise, da Silva, Webster, and Sanson (2005).

Chapter 2

The Head Start CARES Intervention: Enhancements and Support for Implementation

This chapter describes the three social-emotional program enhancements that were tested in the Head Start CARES demonstration: The Incredible Years Teacher Training Program, Preschool PATHS (Promoting Alternative Thinking Strategies), and Tools of the Mind — Play. Each enhancement has a distinct theory of change for affecting children's social-emotional competencies through teacher practices. Each enhancement also has evidence, from small-scale randomized control trials, that it has improved children's social-emotional outcomes.

The chapter also provides an overview of the extensive support system for "scale-up" — or expansion of the intervention — that was put in place to increase the likelihood of high-quality implementation. The supports included a professional development model, comprising year-long training and weekly coaching for teachers, as well as ongoing data monitoring and technical assistance. The chapter concludes with a presentation of the theory of change that guides the implementation research efforts in the Head Start CARES demonstration and serves as a road map for the balance of this report.

Social-Emotional Enhancements Tested in Head Start CARES

The following sections and Table 2.1 describe each social-emotional enhancement that was tested in Head Start CARES and its primary components, as well as vignettes of how key components of the enhancements might be used in the classroom. In addition, information is provided on adaptations of those components that were implemented for the Head Start CARES demonstration. Some of the adaptations occurred at the outset of the demonstration, before the enhancements were implemented with participating centers, while others occurred as the study progressed.

The Incredible Years Teacher Training Program

The Incredible Years Teacher Training Program is a research-based classroom management program that focuses on strengthening teachers' use of classroom-wide positive management and discipline practices, and promoting children's social and emotional competence in

Table 2.1

Head Start CARES Program Enhancements

Enhancement	Description	Primary Components	In Practice
Incredible Years	Promotes positive teacher/child relationships, evidence-based classroom management and coaching strategies, and teacher/ parent partnerships.	Positive attention, coaching methods, proactive discipline, and other behavior supports; structured behavior management plans; relationship building and parent involvement.	Positive attention: "I really like the way ____ is sitting with her hands in her lap."
Preschool PATHS	Enhances social-emotional development through explicit lessons and a set of generalized teaching strategies.	Daily exchange of compliments; weekly lessons that promote emotional knowledge, vocabulary describing feelings, self-regulation, positive peer relations, and problem-solving.	"How do you think ____ felt when ____ gave him a hug? That's right, he felt happy! How do you look when you feel happy? What makes you feel happy?"
Tools of the Mind	Focuses on mature make-believe play and specific learning activities to foster cognitive, self-regulation, and executive functioning skills.	Make-believe play planning, make-believe play, and make-believe play practice.	Sample child play plan: "I am going to be the bus driver." Teacher supporting play: "What route will your bus take?"

the classroom in the context of positive teacher-child relationships.[1] Originally designed to address the needs of children with high levels of problem behaviors, The Incredible Years has

[1]There have been two randomized trials of Incredible Years Teacher Training alone and two randomized trials of Incredible Years along with intensive classroom consultation and stress management training. The results across the four studies suggest that the teacher training program is associated with improvements in children's behavior regulation and with improvements in teacher classroom management skills. See Murray, Murr, and Rabiner (2012); Reid, Webster-Stratton, and Hammond (2003); Webster-Stratton, Reid, and Hammond (2001); Webster-Stratton, Reid, and Hammond (2004). CSRP (formerly known as the Chicago School Readiness Project) and the Foundations of Learning demonstration both tested Incredible Years Teacher Training in conjunction with clinical classroom consultation and stress management training, and both led to improvements in children's executive functioning (self-regulation abilities that underlie approaches to learning through a combination of attention, inhibitory control, and short-term memory skills) and teachers' classroom management. CSRP is not associated with The Chicago School®, which is a trademark of The Chicago School

(continued)

had large impacts on children's conduct problems (that is, acting-out behavior[2]) and attention-deficit/hyperactivity disorder (ADHD).[3] The basic framework for these programs is drawn from cognitive social learning theory, which posits that learning occurs within a social context, at least in part by observing others (such that children learn not only when they are encouraged with positive attention, but also when their peers observe them receiving this attention from the teacher). The primary focus is therefore on training teachers how to directly *promote children's adaptive social behavior* and how to *reduce their problem or inappropriate behaviors*. The approach includes strengthening of positive teacher-student relationships; proactive classroom organization (rules and predictable routines); clear and consistent limit-setting; social and emotional coaching; praise and incentives to motivate students to learn; and proactive discipline and strategies.

Table 2.2 describes the core components of a Head Start CARES Incredible Years classroom. An Incredible Years preschool classroom is characterized by a warm, supportive environment where the teachers use classroom management practices, instead of scripted lessons, to promote a positive environment. For example, an Incredible Years classroom has five clear rules that children can easily count on their hands; the schedule is posted on the wall; and transitions between activities are predictable. The teachers also work to build relationships with students by being warm, having fun, and using positive greetings and incentives. When children misbehave in the classroom, the teachers ignore them, distract them, and redirect their attention to create opportunities to praise positive opposites, and to model to other children how to respond to negative behavior. Similarly, teachers deal with negative behaviors by illustrating consequences for those behaviors and having the children take time away (by going into a corner, for example) to calm down and practice their breathing. Children with challenging behaviors are given behavior plans that involve specific strategies to regulate their behavior and for the teachers to guide them in the process. Children are also motivated by incentives such as special privileges or rewards for positive behaviors. Teachers support positive behaviors with praise and model positive coping strategies for children — such as breathing out or taking time to calm down — by enacting them with other adults in the classrooms. Collectively, these changes in teachers' skills in emotional and behavioral management in the classroom are intended to enhance the classroom environment by improving the relationships between teachers and children and reducing down time (when no activities are occurring) and transition time (from activity to activity), leading to fewer behavioral challenges in children.

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of Professional Psychology. See Morris et al. (2010); Raver et al. (2008). More information about Incredible Years can be found at www.incredibleyears.com. See Incredible Years Teacher Training Programs (2012).

[2]Acting-out behavior includes aggression, hostility, or opposition.

[3]Webster-Stratton, Reid, and Stoolmiller (2008).

Head Start CARES Demonstration

Table 2.2

Key Components of Incredible Years in Head Start CARES

Component	Description
Promoting positive relationships	Relationships are the foundation of Incredible Years, and teachers are encouraged to spend time building rapport and trust with each child in the class. Children are also encouraged to express their emotions with their peers ("feeling talk").
Praise and incentives	When a child demonstrates a positive behavior, teachers use a set of strategies, such as rewards and praise, to encourage that behavior through positive attention.
Effective limit setting	Teachers are trained to ignore, redirect, distract, and use other techniques to limit aggression and disruptiveness in the classroom and to maximize self-regulation.
Consequences	When children do not respond to the strategies above, teachers have the option of developing consequences for behavior, which can include time out or a loss of privileges.

SOURCES: Reid, Webster-Stratton, and Hammond (2003); Webster-Stratton, Reid, and Hammond (2004).

Box 2.1 provides a vignette of a teacher using Incredible Years practices in a Head Start CARES classroom. A number of key components of Incredible Years are demonstrated in this story. First, the teacher uses "persistence" coaching methods to support the child's willingness to wait (waiting behavior); then she uses "proximal praise," which entails giving attention to positive behavior that another child is exhibiting; and then she praises the other child's willingness and ability to share (sharing behavior). Second, she models language to both children to help them manage the interaction more effectively. Finally, she follows through with her promise.

At the start of and during the demonstration, some Head Start CARES grantees expressed concerns that some of the Incredible Years practices — for example, the use of food to reward positive behavior — were inconsistent with Head Start guidelines about not providing food outside of meals. In response to these early concerns, the Incredible Years program made slight modifications to the way in which trainers presented these subjects to Cohort Two. (Recall that the demonstration included two cohorts, one in 2009-2010 and one in 2010-2011.) The

Box 2.1

Praise and Incentives in The Incredible Years

A teacher sits with two children on the floor. Timmy wants one of the trucks that the other child, José, has. Timmy reaches for the truck and the teacher prompts him by saying, "Timmy, can you say to José, 'Can I have your truck?'"

José responds, "Later."

The teacher then says to Timmy, "I think you can wait 3 minutes." She shows with her three fingers. Then to José she says, "In 3 minutes, it will be Timmy's turn with the truck." Timmy sits on his hands watching and the teacher says, "Wow, Timmy, you are using your strong waiting muscles. Would you like to do something else while you are waiting?" Timmy looks like he wants to reach for the truck again and the teacher turns to a third child and says, "Look at Timmy waiting his turn; he is being such a good friend waiting." After 3 minutes have passed, the teacher prompts José to give Timmy a turn with the truck, and she praises José as he does so by saying, "José, you are also a good friend by sharing your truck with Timmy." She then helps José find another toy to play with.

NOTE: This vignette is based on Incredible Years Teacher Training videos, available at www.incredibleyears.com/program/teacher.asp.

trainer helped teachers understand that the Incredible Years principle of rewarding students involves finding a fun reward that will motivate the student. The trainer helped teachers share and create some possible rewards they could use in their classrooms. Another grantee expressed concern about the appropriateness of using "time out" in Head Start. The Incredible Years trainer responded by demonstrating how to effectively use time out to help a child calm down and to reframe it as "cool-down time" or "time away to think and calm down."

Preschool PATHS

The Preschool PATHS program is a research-based, social-emotional learning enhancement that includes explicit lessons and teaching strategies designed to teach children about emotions and responses to peers in social interactions.[4] PATHS is built on research into the im-

[4]Published studies of Preschool PATHS include one randomized control trial of PATHS alone, one randomized control trial of PATHS plus a literacy component called REDI (Research-based, Developmentally Informed), and one randomized control trial of PATHS plus a professional development component. The results suggest that the program led to improvements in direct assessments and teacher ratings of children's social problem-solving, emotion knowledge, and behavior regulation. See Bierman et al. (2008a); Bierman et al. (continued)

portance of "emotion knowledge," self-regulation, and problem-solving skills for children's school readiness and healthy development. The ability to identify and communicate about emotions (emotion knowledge) helps children accurately interpret the social cues of others, and it lays the foundation for effective problem-solving. The primary focus of the PATHS intervention is to help children *develop and internalize social and emotional skills.* PATHS helps teachers create a supportive classroom environment and interact with their students in ways that help the children understand and apply the skills that they are taught in the lessons.

Before the Head Start CARES demonstration began, the Preschool PATHS curriculum was adapted from a version that had been developed for elementary school, which targets students in kindergarten through fifth grade. The adaptation process was conducted in part through a Head Start University Partnership grant from the Office of Head Start, and the program was developed and tested in the Head Start environment. In preschool classrooms, PATHS has revealed moderate impacts on children's social interaction.[5]

PATHS lessons are taught to large and small groups, depending on the make-up of the class. Lessons cover a range of topics, including complimenting others, understanding feelings, stopping and calming down, and problem-solving. Teachers extend and generalize the lessons with "extension activities" (such as singing or doing artwork), which provide an opportunity to revisit lesson topics and are conducted at least once a week. The teaching strategies that complement PATHS lessons include emotion coaching, the support of self-regulation, and talking to children about social problems, such as what to do if a friend grabs your toy. The teaching strategies are designed to be used daily to provide children with opportunities to practice skills.

Table 2.3 summarizes the core components of a PATHS classroom in Head Start CARES. A PATHS classroom is characterized by explicit scripted activities and lessons that help children recognize and appropriately respond to their emotions. Each day, a PATHS "Kid of the Day" is identified; the child is given a special job and receives compliments from the teachers and the other children. Classroom rules are posted and proactively reviewed. Teachers also display visual reminders of the key curriculum concepts, such as hanging posters around the classroom. Teachers who implement PATHS with fidelity to the model use the teaching strategies daily to create a positive classroom environment. The teachers describe their positive expectations, praise positive models (for instance, when children compliment each other), and point out the interpersonal consequences of various kinds of behavior (for example, when friends are happy if they share toys). The teachers also learn to anticipate emotionally difficult

(2008b); Bierman et al. (2010); Bierman et al. (2013); Domitrovich, Cortes, and Greenberg (2007); Domitrovich et al. (2010); and Hamre, Pianta, Mashburn, and Downer (2012). More information about Preschool PATHS can be found at www.pathstraining.com. See Preschool PATHS (2012).

[5]Domitrovich, Cortes, and Greenberg (2007).

Table 2.3

Key Components of Preschool PATHS in Head Start CARES

Component	Description
Weekly "circle time" lessons	Weekly lessons introduce feelings and PATHS strategies to the classroom. Puppets of the PATHS characters, stories, and illustrations are used to deliver the lessons.
"Kid of the Day"	Every day, teachers choose a child at random to be Kid of the Day. The class practices giving compliments to this child, which are compiled by the teachers and sent home to his or her parents.
Extensions	A variety of extension activities are used to further incorporate the PATHS lessons into the classroom. These activities can be related to music, art, literacy, mathematics, etc.
The "turtle" technique	"Doing Turtle" is presented to children as a way to stay in control when they are feeling strong emotions. It combines a gesture (crossing the arms), controlled breathing, and verbalizing emotions and issues. ("The problem is___and it makes me feel___")
FREE strategies	Teachers use these strategies to provide children with feedback and support to help them reflect on their behavior and self-correct. They are used as an alternative to direct commands when children exhibit mild forms of disruptive behavior.

SOURCES: Bierman et al. (2008a); Bierman et al. (2008b); Domitrovich, Cortes, and Greenberg (2007).

situations and prepare children proactively, providing an opportunity for children to self-correct when they have inappropriate responses before the teacher exerts more control. Teachers treat conflicts as opportunities for learning, actively encouraging the children to be empathetic and to try to understand the perspective of someone else, providing feedback, pointing out consequences, and helping children to problem-solve and enlist the help of their peers.

The teaching strategies are also designed to help generalize the curriculum concepts. In PATHS classrooms, teachers work with children to identify and label children's emotional experiences, using a rich emotional vocabulary and modeling or demonstrating self-regulation techniques. When children need to calm down, for example, a teacher might prompt a child to engage in "turtle," an emotion regulation technique in which the children cross their arms, control their breathing, and articulate their emotions by saying, "The problem is ____ and it makes me feel ____." The teachers also foster a sense of community by engaging children in conversa-

tions, being physically and emotionally available to them, being sensitive to their needs, and communicating genuine caring. Finally, teachers encourage children to talk about their emotions and provide verbal and physical support when children express themselves.

Box 2.2 provides a vignette of Preschool PATHS in the classroom. As illustrated in the vignette, the primary focus of PATHS is children's understanding of emotions, which is theorized to be a necessary developmental prerequisite to the *internalization* of self-regulation, empathy, and pro-social behavior. Such a developmental approach allows teachers to support children at different stages and in a variety of contexts by "labeling" emotions (that is, giving emotions a name when observed) and helping children learn appropriate labels and emotional expressions, as well as by helping children understand emotions in the context of social interactions, the management of their own feelings, and problem-solving.

Preschool PATHS was not substantially altered for the Head Start CARES demonstration, in large part because of its genesis within Head Start. After the first cohort of grantees had implemented PATHS, however, the PATHS developers more clearly articulated the expectations regarding PATHS fidelity — a minimum of one lesson and one extension activity per week.

Box 2.2

"Feelings" Lesson in Preschool PATHS

The lead teacher sits in a circle with the whole class and says, "Let's play a game and look at a drawing of faces. I want you to tell me how the people in the picture are feeling. We can learn how someone is feeling on the inside by looking for clues. What parts of our faces show we are happy?"

A few children call out "smile" and "mouth."

"That's right," says the teacher. "Now let's talk about how mouths look when someone feels happy." The teacher holds up drawings of children and adults and asks the class to identify which people are happy and which ones are not. She then asks them to explain how they know the people in the drawings are happy. She draws attention to the eyes, ears, and noses, and asks the class to tell her if there is a difference between happy and sad eyes, ears, and noses. The teacher then hands out blank face templates and pictures of mouths, eyes, ears, and noses. She asks the children to make a happy face using the pictures and then asks them to make a sad face.

Later in the day the children are playing in play areas. The teacher walks around, calling attention to children who are happy, noting the facial cues that show how they feel. She asks one or two children to describe how other children feel by asking them to explain how they know what the child feels.

Tools of the Mind

Tools of the Mind is a curriculum based on the theories of Russian psychologist Lev Vygotskian,[6] which was developed for preschool and kindergarten classrooms.[7] This program is based on the belief that, particularly in early childhood settings, a focus on interpersonal (peer-to-peer) interactions is the most beneficial approach for introducing young children to their "tools of the mind."

This program targets cooperative play skills, self-regulation, and social problem-solving. Additionally, there is an extensive emphasis on fostering cognitive self-regulation (executive functioning) skills and related approaches to learning.[8] Executive functioning, a component of self-regulation, in early childhood includes working memory (or the ability to keep a number of pieces of information in the mind at once), set-shifting (or the ability to flexibly shift between pieces of information), and inhibition (or the ability to stop or repress an immediate response). Rather than providing explicit lessons on these skills, however, Tools of the Mind changes the way that make-believe (pretend) play and other learning experiences are structured and supported in the classroom.[9] Teachers focus the classroom on a specific theme for a few weeks, incorporating it into all activities, and all the Head Start play areas use that theme — such as jobs in the neighborhood or people in the family — to make children's play richer and more interactive. A central component of Tools of the Mind in preschool is a daily 50-minute block of time that is devoted to make-believe play, which teachers organize in very specific ways to enhance children's planning skills, understanding of social roles, memory and focused attention, and social-emotional understanding. In addition, the program includes self-regulation games and restructures "circle time" (a large-group activity period) to have less waiting time and fewer activities, and uses literacy, math, and science learning activities, to encourage children to take control of their own learning and support each other's learning.[10]

A previous experimental study that evaluated Tools of the Mind found moderate treatment effects for behavioral problems as reported by teachers.[11] An additional study

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[6]Vygotsky believed that children use interpersonal communication to learn and internalize tools that lead to higher mental functions and allow them to take charge of their own learning.

[7]More information about Tools of the Mind can be found at www.toolsofthemind.org. See Tools of the Mind (2013).

[8]Previous studies, such as the Foundations of Learning demonstration, have found that social-emotional interventions can improve children's executive functioning and other approaches to learning. See Morris et al. (2010).

[9]In make-believe, or pretend, play, children use their imaginations to role-play, pretend they are different characters, play out stories, and enact scenarios that rely on and encourage creativity.

[10]Teachers were also expected to change themes numerous times over the course of the year, which required creating multiple sets of props with which the children could play.

[11]The findings of one randomized control trial of Tools of the Mind have been published. The results suggest that the program led to improvements in teacher ratings of children's behavior at school. See Barnett et al.

(continued)

found that Tools of the Mind had a positive effect on children's executive functioning, specifically inhibition.[12]

Table 2.4 describes the core components of a Tools of the Mind classroom in Head Start CARES. A Tools classroom focuses on mature make-believe play as a way to foster self-regulation, as well as cognitive and executive functioning skills. In a Tools classroom, the teachers move with ease from student to student during play planning, "scaffolding" the activity, with students working at all levels. Scaffolding is a practice that teachers use to support a child's activity or response at his or her current level of understanding while extending the activity or response in order to push the child to the next level of ability. For example, a child may not yet know how to spell but may know the alphabet. A teacher would "scaffold" this child by telling her the letters in a word and letting her write them down until the child can write simple words by herself. Some children may be focused on "making a plan" by drawing on their own, while others might be writing in the parts of words that they are able to sound out. The teachers encourage children to talk and work together, and potential conflicts are worked out at the table before children leave to play.

A particular play theme is selected and represented in multiple play areas that have an abundance of child-made props, such as chef hats, "food" made from Play-Doh®, and hand-written menus. Teachers circulate throughout the room, scaffolding children during the daily 50-minute play block, and as many as half of the children are deeply engaged and stay in a role or scenario with peers for an extended period of time. The teachers participate in make-believe play practice and create inventive and engaging scenarios; for example, one teacher might pretend to be a customer in a restaurant, while the other teacher takes the role of a waitress who spills the drinks. "Fingerplays" or "pretend transitions" (such as "This Little Piggy" or pretending to be "quiet as a mouse") are used during all or most transitions between activities throughout the day, and all or most students are able to focus their attention quickly and remain regulated during transitions. The teachers use different pretend transitions throughout the day, and there are no extended large-group activities or wait times between activities without active engagement.

(2008). Since then, the findings (unpublished) from two randomized control trials of Tools and one randomized control trial of Tools in conjunction with a math curriculum have failed to show statistically significant differences (that is, differences that have a high probability of being attributable to the program) in literacy, language, and math skill acquisition or in executive functioning for children in Tools (or Tools plus math) classrooms compared with standard preschool programs. See Clements, Sarama, Unlu, and Layzer (2012); Farran, Lipsey, and Wilson (2012); and Lonigan and Phillips (2012).

[12]Diamond, Barnett, Thomas, and Monro (2007).

Table 2.4

Key Components of Tools of the Mind in Head Start CARES

Component	Description
Play planning and scaffolded writing	Teachers support all students while developing their play plans. A play plan might include the child's name, an illustration of the plan showing what the child will do during play time, lines representing the words of the play plan, and starting/beginning sounds to each word.
Make-believe play	Teachers set aside a required block of time for play with a clear theme. Teachers circulate the room scaffolding play and encouraging deep child engagement in play.
Make-believe play practice	Teachers create inventive and engaging scenarios that are meant to be carried over by the children into their own play. This activity is meant to have a playful feel with high levels of student participation.
Attention-gathering activities	Fingerplays or pretend transitions are used as attention-gathering activities during transition times. Fingerplays are games or songs for which the fingers are used, like "This Little Piggy." Pretend transitions are transitions in which a "pretend" element (such as pretending to be "quiet as a mouse") is used.

SOURCE: Barnett, Yarosz, Thomas, and Hornbeck (2006).

Box 2.3 provides a vignette of Tools of the Mind in the classroom. As described, children are asked to plan their play before they engage in it, and teachers are asked to scaffold that play and learning for children. Moreover, much of the learning takes place in extended pretend-play sequences, in which children regulate their own behavior as well as that of their friends to fit within the planned play sequence. In some ways, of the three enhancements, Tools of the Mind required the most from teachers — both in terms of their ability to match their response to children's skill levels and to effectively support children's play planning and pretend play. In addition, given the number of activities and the way in which the day is structured, Tools of the Mind required a high level of coordination between the lead and assistant teachers. As such, it was considered the most complex of the three enhancements.

Box 2.3

Make-Believe Play Planning in Tools of the Mind

The lead teacher is working with students who are seated at one table, and the assistant teacher is working with students at another table. Each child has a half-sheet of paper, with pictures or lines on some of their papers and lines with letters on them on others. The lead teacher works with one student, Ashley, to help her plan and develop her play scenario before she begins.

Pointing beneath each line, Ashley says, "I am going to train."

"Wonderful — I can see that in your picture!" says the teacher as she points to Ashley's drawing of herself sitting on a train in her play plan. "Now, all you need to do before going to the train station is to add in some more letters." Because it is half-way through the year and they have been practicing all year, Ashley is able to write "I am going to" on her own. The teacher and child work together to spell out train, with the teacher scaffolding Ashley's letter knowledge as necessary.

The teacher then asks, "What route will the train take?"

"I want to take the other kids to school," the child says.

The teacher helps Ashley extend the play scenario by responding, "Wow! You are a great train conductor. You know exactly how to get the passengers to school. Yesterday, we learned how to get all your passengers on the train and go 'All aboard!' Let's practice!"

The child goes to the train station center, makes the "All aboard!" gesture, and begins to play the "train" game with her peers, each taking on a different role in the activity.

In taking on pretend roles, Ashley and her friends are learning how to take on other perspectives, which is critical to social interaction, as well as strengthening their cognitive flexibility and inhibition skills by switching between "themselves" and their "pretend role" without switching back out of the pretend role or moving on to play something else.

In the typical implementation of Tools of the Mind, teachers conduct the comprehensive, full-day Tools model over a two-year period. Because this curriculum extends across multiple content areas, components are phased in over time to allow teachers to gradually implement the full curriculum. To accommodate the structure and time frame of the Head Start CARES demonstration, Tools developers adapted the curriculum to allow for implementation in one year, meaning that Tools was condensed into a one-year *enhancement* rather than a two-year curriculum designed to structure all components of the school day. The developers, however, maintained the traditional Tools emphasis on Vygotskian concepts and focused on make-

believe play planning (done by the children), make-believe play, and the teacher's make-believe play practice for the whole classroom.

Implementation Support System

A key challenge of many large-scale trials is maintaining fidelity to the intervention model as designed. In previous efficacy trials of early childhood interventions involving a relatively small number of classrooms, the developers of the intervention being tested were primarily responsible for monitoring and responding to implementation issues, and were able to respond in a highly individualized manner. While this arrangement provided support for each unique implementation challenge that arose, it was not useful for identifying a more systematic approach to assessing, categorizing, and addressing implementation challenges at scale when implementation was more removed from the developers.

Therefore, considerable attention was paid to ensuring that the three evidence-based enhancements in Head Start CARES were supported by a strong and systematic framework, depicted in Figure 2.1, when scaling up for the demonstration. As explained in Chapter 1, Head Start CARES involved 17 grantees spread out across 10 states around the country. As part of the research study, each grantee was required to implement three separate enhancements at the same time — an approach that is likely to be more burdensome than introducing only one new intervention per grantee, which is a more typical scenario. Initiation and implementation of three enhancements at the same time created an extra hurdle to overcome, potentially leading to less support and buy-in from grantee administrators.

As discussed below, given the need to scale up rapidly, a more structured and intensive support system for achieving fidelity was needed. This included (1) prepared enhancement materials, including manuals and various teaching props; (2) professional development, including training by certified trainers and classroom-based coaching; and (3) monitoring and technical assistance.

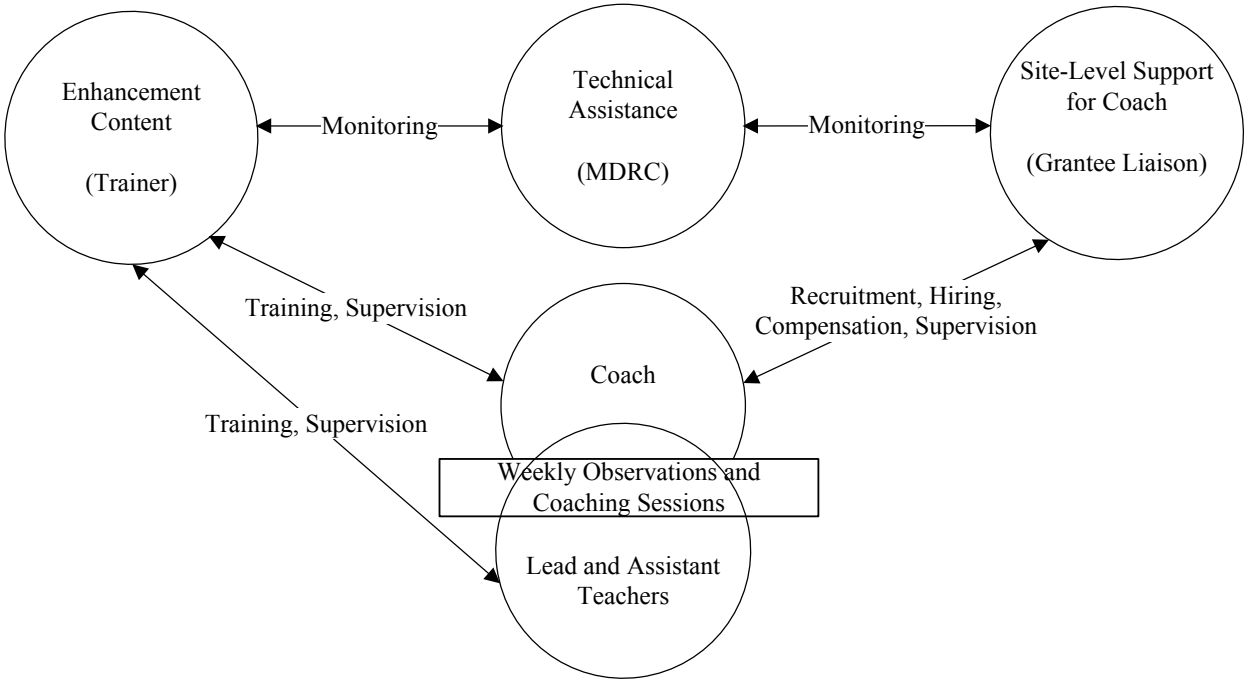
Prepared Materials for Trainers, Coaches, and Teachers

Trainers, coaches, and teachers used enhancement-specific materials that developers already had written and put in place. These previously developed manuals made up the foundation for supporting teachers while they implemented the enhancements in the classroom, providing lists of needed materials, scripts, and explanations for activities.

Head Start CARES Demonstration

Figure 2.1

Program Model Components



Professional Development

Training

The Head Start CARES training component included well-developed pre-existing curriculum manuals and training materials, provision of the appropriate training sessions to lead and assistant teachers, and the trainers' support of classrooms through classroom visits. Training took place both on- and off-site, and some sessions took place during "professional development days" that were set aside for that purpose, while others occurred during the week or on Saturdays.

Although the foci of the teacher training varied by enhancement, the structure for the delivery of content was similar across all three enhancements. Both lead and assistant teachers participated in a series of training sessions over the course of the academic year, with the training providing pedagogical and theoretical background about how to understand and implement the enhancements' practices and activities. The Incredible Years offered six days of training; Tools of the Mind offered five days; and Preschool PATHS offered four days. Preschool PATHS and Tools of the Mind provided new content in all the training sessions except for the final one, which was used as an opportunity to review and reinforce content from the previous training sessions. The Incredible Years, however, presented new content in all the training sessions, including the final one.

The trainers for Head Start CARES were certified or eligible for certification to deliver teacher training by the respective developers. The scaling up required that a large number of new trainers be certified to lead coaches and teachers in training. Due to the need to scale up rapidly, a number of trainers completed the certification processes during the implementation years. To become certified, Incredible Years trainers needed to be accredited or educated as a teacher, psychologist, or school counselor and attend a workshop for trainers, after which they needed to conduct Incredible Years teacher training and receive positive teacher evaluations and satisfactory feedback from a certified trainer. PATHS trainers were required to have at least two years of experience with the enhancement, attend a trainer's workshop, and receive ongoing training in PATHS delivery to be certified. The Tools certification process required participants to be certified as eligible by developers.

Coaching

Despite the existing pool of trainers, enhancement developers did not have the number of certified trainers needed to serve in a supportive role for teachers on a weekly basis and across multiple Head Start centers. In-classroom coaching was therefore viewed as an essential component of the professional development model for all three enhancements and was conceptualized as a way to augment and reinforce the training content as well as to standardize the

support provided to teachers for implementation across the enhancements. Although all the enhancements had some level of in-classroom consultation embedded in them before Head Start CARES began,[13] the research team collaborated with developers to create one standard coaching component that was used across all enhancements for replication and scale-up purposes. The coaching component in Head Start CARES was conceptualized as teacher-focused, collaborative, instructional, evaluative, and nonsupervisory, and was designed to help teachers use the enhancements with fidelity in their classrooms.

In general, in-classroom coaching complemented the training by providing a forum for teachers to experience the blending of the enhancement theory, content, and practice, and to receive ongoing feedback in order to become competent in the enhancement and sustain changes in their instructional practices. Coaching lead and assistant teachers was viewed as essential for strong classroom implementation and had the added benefit of ensuring that a teacher who was competent in implementing the enhancement would always be available in the case of teacher turnover or long-term absences.

Grantees hired coaches with funds provided by the study. Coaches were responsible for an average of 4, and as many as 13, classrooms each. The coaching component of the professional development model required coaches to spend a total of 90 minutes in the classroom each week, including a 30-minute meeting with teachers and a 60-minute observation period. The coaches also participated in regular supervisory phone calls with their trainers to discuss implementation progress and challenges. In addition to their coaching responsibilities, coaches provided logistical and implementation support, such as finding materials or helping to facilitate discussions, for the delivery of the enhancement-specific training sessions in coordination with the trainers and grantee liaisons (a staff person designated by the grantee, who sometimes supervised coaches and teachers).

The expected weekly commitment for coaches was an average of three hours per classroom, as coaches were also responsible for completing online logs that were used for monitoring implementation and collecting data, as explained in the next section.

[13]Previous trials of the three enhancements varied in the target (or focus), frequency, and modes of consultation. In The Incredible Years, the trainer was available to answer questions from the teachers, and coaching was also provided for implementation of a separate child component, called Dinosaur School. In Preschool PATHS, trainers supervised implementation with phone calls and periodic face-to-face meetings. In Tools of the Mind, coaches provided weekly in-classroom meetings.

Monitoring and Technical Assistance

Monitoring

An important tool for monitoring implementation was the Head Start CARES management information system (MIS), which served as a repository for coaches and trainers to submit information about how teachers were implementing the enhancements and how often coaches, teachers, and trainers interacted. The MIS allowed for "real-time" monitoring (as opposed to intermittent or retrospective monitoring) of both the coaching process and progress on classroom implementation.

The system was designed to support technical assistance, management, and monitoring of fidelity to the enhancement design as the enhancement was delivered in the classroom. It included user-friendly, online "coach weekly logs" and "coach monthly fidelity logs," as well as "trainer fidelity logs." Coach weekly logs captured and documented weekly coaching sessions; coach monthly fidelity logs documented fidelity to the enhancement design. The coach weekly logs and the coach monthly fidelity logs enabled the technical assistance team to monitor, react to, and track the progress of implementation. Coaches completed separate coach weekly logs and coach monthly fidelity logs for each classroom with which they worked. In addition to their weekly reports about coaching for each classroom and their monthly reports about fidelity to the enhancements, the coaches reported on such topics as the teacher-coach relationship lead teacher-assistant teacher relationship. Appendix B presents the questions from the coach weekly log and the coach monthly fidelity log, for which coaches provided answers in the MIS. Trainers similarly used logs to report on fidelity each time they visited a classroom, to rate coach quality, and to report on their contact with coaches each time they spoke.

As part of the ongoing monitoring of implementation, a technical assistance threshold was created on the coach monthly fidelity log for satisfactory implementation. On a scale of 1 (low) to 5 (high), classrooms with a monthly coach rating at or above a 3, meaning that teachers were implementing the enhancement occasionally but not consistently, were considered to have reached the threshold for satisfactory implementation. When classrooms were not able to reach or dropped below the threshold, technical assistance was provided. The technical assistance, described below, included additional support to the coach on classroom implementation challenges, outreach to the developers and trainers, or discussions with center directors or grantee liaisons if necessary. Coach weekly logs also included open-ended comment boxes in which coaches could leave remarks for the technical assistance team about implementation issues as they arose. Issues ranged from concerns about resistant teachers to observations about the need for supplies or problems with paychecks. This was supplemented by research team and trainer visits to Head Start CARES classrooms. Table 2.5 provides an overview of all the data sources

Head Start CARES Demonstration

Table 2.5

Head Start CARES Implementation Research Data Sources

	Quantitative						Qualitative	
Domain	Attendance Forms	Feedback Forms	Coach Logs[a]	Trainer Logs[b]	Teacher Self-Survey	Classroom Observations[c]	Research Team Interactions[d]	Interviews
Training[e]								
Dosage	X			X				X
Quality		X		X			X	X
Content		X					X	X
Coaching								
Dosage			X				X	X
Quality			X	X	X		X	X
Content			X		X			X
Coach support/supervision			X	X				X
Coach characteristics			X					X
Classroom implementation								
Fidelity			X	X			X	X
Teacher practices						X		
Contextual factors								
Child characteristics								X
Teacher characteristics			X		X			X
Classroom characteristics						X	X	X
Organization characteristics			X		X	X	X	X

NOTES: For a full explanation of all Head Start CARES data sources, see Appendix C.

[a]Coach logs include coach weekly logs, coach monthly fidelity logs, coach end-of-year reflections, and data from the coach demographics survey.

[b]Trainer logs include supervision logs and fidelity reports.

[c]Classroom observations include the Classroom Assessment Scoring System (CLASS) and the Adapted Teaching Style Rating Scale (Adapted TSRS).

[d]Research team interactions include phone calls, e-mail exchanges, and in-person meetings with key players.

[e]Training includes training sessions and trainer classroom visits.

that were used for the evaluation. For a full explanation of Head Start CARES implementation data sources, see Appendix C.

Ongoing Technical Assistance

Finally, MDRC provided technical assistance to all members of the implementation support network (which included enhancement developers, trainers, coaches, teachers, and grantee liaisons), supported the implementation of the enhancements, and facilitated communication. For grantees, the technical assistance team provided a grantee liaison tool kit that described key roles and responsibilities, outlined the implementation schedule, and contained copies of coach weekly logs and coach monthly fidelity logs, as well as materials such as draft job descriptions and interview guides for the grantees to use when they hired coaches. The technical assistance team also helped grantees and coaches plan the logistics of training sessions when necessary. Coaches were provided with a tool kit that articulated the coaching plan and related activities. For Cohort Two, coaches also participated in cross-grantee coach calls with the technical assistance team, which provided an opportunity for coaches who were working with the same enhancement to share successes as well as challenges that arose during implementation.

In order to facilitate communication among the many participants in the study, the technical assistance team conducted a three-day kick-off meeting and training workshop on Head Start CARES that introduced all key stakeholders in Cohort Two to the demonstration. The training workshop was conducted during the summer of 2010, before the enhancements were implemented in Cohort Two. Grantee liaisons and coaches from the Cohort Two grantees, developers, trainers, and the research team participated in the training. Grantee liaisons attended brief orientation sessions on each enhancement. Coaches received training in the coaching component, their specific enhancement, and completion of the coach weekly logs and coach monthly fidelity logs. The technical assistance team also monitored the incoming coach weekly logs and coach monthly fidelity logs throughout implementation, using the information to feed back to developers and grantees as necessary. This was accomplished through monthly site team discussions with grantees and developers.[14]

Processes for Supporting Implementation: Supervision and Communication

As described above, the demonstration required the support of many people playing complementary, and sometimes overlapping, roles. Their key roles and responsibilities are summarized

[14]Site teams, which comprised operations staff from MDRC and MEF Associates, met monthly with a designated member of the grantee to check in about implementation.

in Table 2.6. Enhancement developers, who had designed each of the enhancements, supported and supervised their designated enhancement experts, the trainers. Trainers trained and supervised the coaches, each of whom supported implementation for a specific grantee and was considered an expert in how to implement the enhancement in that center.[15] Coaches received enhancement-related supervision from the trainers and developers, and received administrative supervision from the grantee that hired them. Each grantee designated a staff person, the grantee liaison, who supervised coaches and teachers in various ways, either directly or as part of their Head Start CARES responsibilities.

Similarly, a complex network was needed to facilitate communication across the numerous key players. The grantee liaisons, who were responsible for sending clear messages to all of the staff about implementation expectations, recruiting and hiring of coaches, providing administrative oversight for the coaches, and ensuring that teaching staff received support for implementation of the enhancements in their classrooms, also directly communicated with MDRC. Site teams, made up of MDRC operations staff who were responsible for supporting grantees, each focused on a different grantee, holding monthly discussions with the grantee and at least one site visit to a grantee to discuss implementation progress and challenges. For each enhancement, the technical assistance team assigned a lead contact person who gathered information from developers, trainers, coaches, and grantees to address implementation challenges. The technical assistance team shared themes from developers, trainers, coaches, and grantees to identify issues that cut across grantees and to work with developers and trainers to address those issues.

In summary, implementation and scale-up of training, coaching, and the social-emotional enhancements required substantial effort among all the stakeholders who were involved in the demonstration. Strong implementation of the Head Start CARES enhancements required a well-articulated framework for scaling up professional development and support. As noted above, all three enhancements had prepared materials for teachers to use in the classroom, and classroom implementation was supported by focused training and coaching, as well as by continuous data monitoring and technical assistance. A Web-based MIS provided ongoing information to developers, trainers, and the technical assistance team on the coaching process and classroom implementation. Ongoing monitoring and real-time information from the MIS, together with consistent communication among all parties, enabled the Head Start CARES team to make adjustments along the way that supported and strengthened implementation of the enhancements.

[15]Coaches were hired by one grantee each and assigned to one enhancement each, which in many cases meant that they were responsible for only one center but in some cases meant that they served two or three centers.

Head Start CARES Demonstration

Table 2.6

Title, Responsibilities, Employment, and Supervision of Key Players in Head Start CARES

Title	Responsibilities in Head Start CARES	Employment and Supervision
Enhancement developer	Designed the enhancement, provided content-related support to coaches and teachers, and supervised trainers.	Various employment and supervision structures (e.g., universities, research centers).
Trainer	Delivered training sessions to coaches and teachers on enhancement content. Visited classrooms to support coaches and teachers with enhancement implementation. Provided supervision and regular. feedback on coaches' performance	Employed and supervised by the enhancement developer.
Coach	Attended training sessions with teachers. Received ongoing content-related support from trainer and enhancement developer. Observed and met with teachers weekly to discuss enhancement implementation.	Employed by grantee-level administrators and center-level administrators and directors. Supervised by the enhancement developer/trainer, grantee-level administrators, and center-level administrators and directors.
Lead teachers and assistant teachers	Attended training sessions alongside the coach. Received ongoing support from coaches and trainers throughout the year. Implemented assigned enhancement in the classroom.	Employed and supervised by grantee-level administrators and center-level administrators and directors.
Grantee liaison/grantee administrators	Recruited, hired, and supervised coaches. Monitored implementation throughout the year.	Employed and supervised by other senior administrative staff.
MDRC technical assistance team	Provided ongoing technical assistance to grantee-level administrators, center-level administrators and directors, enhancement developers, trainers, and coaches throughout the year (e.g., monitored log completion, facilitated communication between trainer and grantee-level administrators).	Awarded a contract by the Administration for Children and Families to implement and evaluate Head Start CARES.

Theory of Change Guiding the Implementation Study

As shown in Figure 2.2, the Head Start CARES implementation study was guided by a logic model framework. As mentioned previously, fidelity to the enhancements as they were intended to be used was considered critical to ensuring a fair test. As such, the theory of change hypothesized that:

1. Implementation of the enhancements with fidelity to the model would strengthen existing practices and/or lead to changes in teacher practice.

2. Changes in teacher practice would lead to improved classroom interactions.

3. Improved classroom interactions would lead to improved child outcomes.

The implementation study focuses on the first of these three steps — implementing the enhancements with fidelity and changing teacher practice. Chapters 3 through 5 assess whether the enhancements were implemented with fidelity and preview preliminary findings about changes in teacher practice. The last two steps of the theory of change are examined in a separate report on the impacts of Head Start CARES.[16]

In this theory of change, three facets were deemed central to the process of implementation:[17] the professional development model that was created to support implementation on an ongoing basis (that is, the training, in-classroom coaching, and technical assistance discussed above), teachers' *actual* implementation of the enhancements in the classroom, and environmental or contextual factors that could support or hinder fidelity.[18] The professional development model is described in detail above. With regard to classroom implementation, it was expected that given a sufficient dosage and quality of training and coaching, program teachers would build the necessary enhancement-specific knowledge and skills, view the program as acceptable, and be confident and motivated in implementing the enhancements. As shown in Figure 2.2, it was expected that the same model might be implemented differently across the diversity of contexts in which Head Start CARES operated. That is, environmental and contextual factors such as the characteristics of the people and organizations involved may have

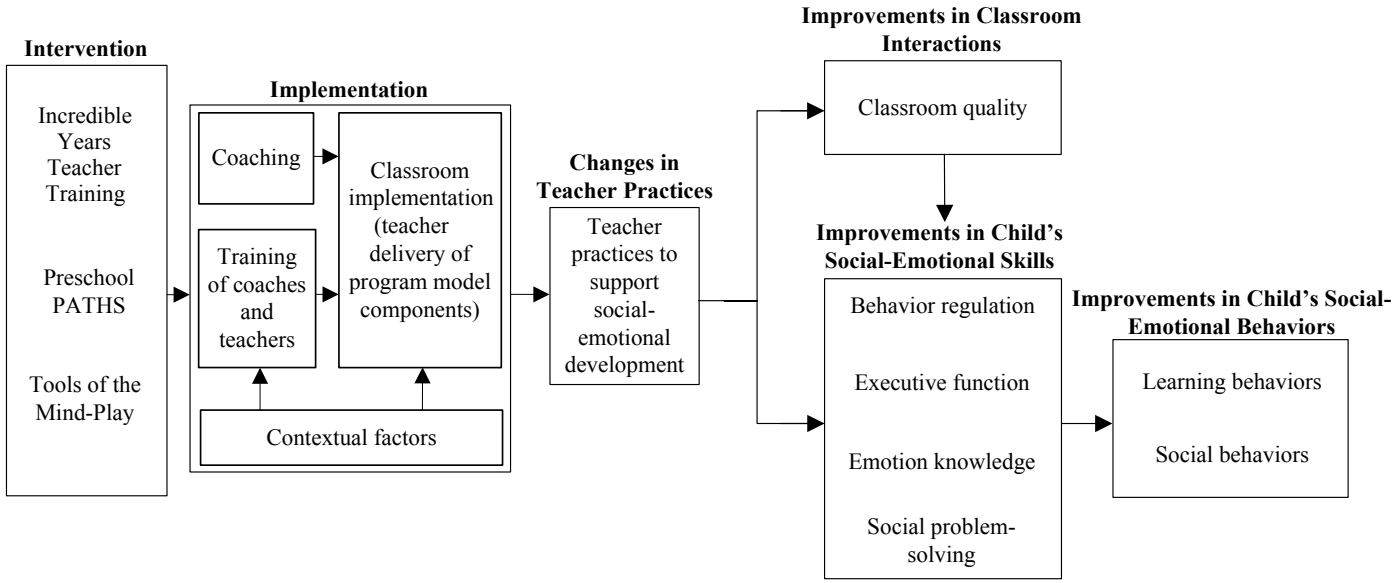
[16]Morris, Mattera, Castells, and Bangser (forthcoming).

[17]All three facets focus on lead teachers (instead of both the lead and assistant teachers) and their implementation of the Head Start CARES enhancements. This decision was based on the level of resources available and is consistent with the companion impact report (Morris, Mattera, Castells, and Bangser, forthcoming).

[18]Head Start traditionally emphasizes parent involvement, and the enhancements did include varied degrees of parental outreach, though fiscal constraints did not allow for allocating resources toward exploring the role of parents in implementation.

Figure 2.2

Head Start CARES Theory of Change



shaped how the enhancements were implemented in the classroom. In the Head Start CARES demonstration, these factors included characteristics of teachers, classrooms, and centers, as well as characteristics of the broader Head Start grantees. The next chapters address all three constructs — the professional development model, teachers' implementation of the enhancements, and contextual factors — and their delivery in the Head Start CARES study.

Chapter 3

Fidelity to the Professional Development Model

This chapter describes how closely the professional development model, which includes training and in-classroom coaching, was followed in the Head Start CARES demonstration. To assess the fidelity to the professional development model that was achieved during implementation, the chapter presents information on the dosage (frequency and duration) and quality of the training and coaching. Costs associated with training and coaching for each of the three enhancements are presented in Appendix D.

On the whole, teacher training and coaching were implemented as intended. Certified trainers provided engaging learning materials to teachers throughout the school year, with teachers and coaches participating in the training sessions at high rates. Coaches were able to meet with teachers often, facilitating the implementation of the enhancements in the classroom by developing relationships with the teachers and conducting weekly coaching sessions. Trainers who supervised and supported the coaches indicated that coaches were of moderately high quality and helped strengthen classroom implementation.

Understanding Fidelity to the Head Start CARES Demonstration Professional Development Model

Fidelity is a construct that assesses the gap between an intended intervention or service and how it was actually provided. Fidelity includes the measurement of adherence, dosage, and quality of an evidence-based practice or service.[1] Fidelity in Head Start CARES focused on two components: implementation fidelity, or fidelity to the professional development model; and intervention fidelity, or fidelity to the enhancement model, or design, as the intervention was delivered in the classroom. This chapter presents findings about the *quality* and *dosage* with which the professional development model was implemented, as well as the support that trainers gave through phone calls and visits to classrooms and coaches. Fidelity to the enhancement design as it was delivered in the classroom is examined in Chapter 4.

Training and coaching were assessed by examining (1) the extent to which they adhered to the professional development model as designed; (2) the frequency (number) and duration (length) of completed coaching sessions; (3) the quality of coaching and training; (4) participant responsiveness to coaching and training; and (5) the amount of support that trainers provided to classrooms and coaches. Drawing from the theory of change that is presented at the end of

[1]Dusenbury, Brannigan, Falco, and Hansen (2003); Lloyd, Supplee, and Mattera (2013).

Chapter 2, it was hypothesized that if the training and coaching adhered fully to the professional development model and were implemented at a high dosage and quality, the likelihood that the enhancements would be implemented, and implemented well, in the classroom would increase.

Training in the Head Start CARES Demonstration

Fidelity to the Head Start CARES training component was determined by the extent to which grantees offered all of the planned training sessions, trainers delivered the full content of the training, and lead and assistant teachers attended enhancement trainings together. As such, fidelity was assessed by examining (1) the dosage of training received; (2) the quality of training received; and (3) the support that trainers provided for classrooms.

Dosage of Training

A first step in assessing fidelity to the professional development model was understanding whether training was delivered as intended. As shown in Table 3.1, the planned number of training sessions differed across enhancements, with six days of training for The Incredible Years, four days of training for Preschool PATHS, and five days of training for Tools of the Mind — Play.

Head Start CARES Demonstration

Table 3.1

Head Start CARES Training Sessions Throughout the School Year, by Enhancement

Enhancement	Aug./Sept.	Oct.	Nov.	Jan.	Feb.	Mar.
Incredible Years	1 day	1 day	1 day	1 day	1 day	1 day
Preschool PATHS	2 days	1 day		1 day		
Tools of the Mind	2 days	1 day		1 day		1 day

NOTES: The table shows an estimated schedule of training sessions for each enhancement. Some grantees held training earlier or later than the estimated months listed for each training.

A day of training lasted between 6 and 8 hours, with time for breaks and lunch.

Incredible Years presented new content in each training session. Preschool PATHS and Tools of the Mind provided new content in the first three and four training sessions, respectively, and reinforced the content during the last training session.

- **Teacher attendance at the training sessions was generally high across all grantees and all enhancements. Lead and assistant teachers generally attended the training sessions together.**

As shown in Table 3.2, training was generally well attended by both cohorts, with 82.4 percent of all sessions attended by lead and assistant teachers together, 93.5 percent attended by lead teachers, and 87.1 percent attended by assistant teachers. Moreover, lead and assistant teachers often attended the training sessions together, although that was not achieved uniformly across grantees. (That is, attendance by lead teachers was higher than attendance by assistant teachers.) Lead teachers were somewhat more likely to attend training than assistant teachers, possibly because it was difficult for both teachers to be absent from the classroom at the same time, and lead teachers were often sent to represent the classroom.

Head Start CARES Demonstration

Table 3.2

Attendance of Lead and Assistant Teachers at Training Sessions, by Enhancement

	Percentage of Sessions Attended			
Attendee	All Enhancements	Incredible Years	Preschool PATHS	Tools of the Mind
Lead and assistant teachers together	82.4	81.8	83.4	81.8
Lead teacher	93.5	94.4	94.2	91.8
Assistant teacher	87.1	86.6	88.3	86.3
Sample size[a]	230	77	77	76

SOURCE: MDRC calculations based on the training attendance forms.

NOTES: Training spanned a full school year, from summer through the following spring.
[a]For all variables in the table, data are available for 100 percent of the sample.

Training of lead and assistant teachers together was conceptualized as a way to support implementation of the enhancements. For example, if both teachers were trained, classroom dosage would not necessarily be reduced if one teacher was absent or left the classroom, because children would still be exposed to the enhancement content by the co-teacher. The research team also believed that if teachers attended training sessions together, they would have a common framework and language to use when discussing classroom issues related to implementation of the enhancements. One assistant teacher in Tools of the Mind explained, "[Training sessions were] very supportive of what [the lead teacher] told me and then they would elab-

orate on it even more." Teachers indicated that attending training sessions together was helpful because it supported their efforts to work together and share the tasks related to implementing the enhancements.

Coaches attended training as well, providing additional support to teachers at the training sessions. Aside from an introductory training workshop that was conducted for Cohort Two, coaches were trained in the enhancement content alongside teachers. Coaches' attendance at training was generally high as well, with coaches attending, on average, 86 percent of the scheduled teacher training sessions. Teachers reported that the coaches' attendance at the training sessions with them was very valuable as a support; however, teachers also wanted coaches to be more knowledgeable about the content of the enhancements *before* they began their actual work in the classroom (rather than just learning the content simultaneously with the teachers). In other words, teachers wanted coaches to have expertise in the enhancement content ahead of time, but they also appreciated having coaches join the training as an added support.

Training Quality

Fidelity to the professional development model was also assessed by observing how well the training was received by participants and the quality of the training sessions. Three sets of perspectives on the quality of the training were collected, from the teachers, the coaches, and the research team. These multiple perspectives provided a more complete picture of how the training was implemented, given that different participants sometimes had differing opinions about implementation.[2] For instance, teachers and coaches were the primary participants in training, with teachers experiencing the training as it was actually delivered and coaches playing a logistical and supportive role in training as well as attending the training. In comparison, the research team was not the target of training and thus had a more removed viewpoint. Taken together, these perspectives provide insight about the quality of the training for teachers and coaches.

- **Training quality was generally strong across all grantees and all enhancements.**

Teachers shared their perspectives about the quality of the training sessions through teacher training feedback forms that were completed at the first and last sessions of each enhancement training. Teachers gave a high rating to the quality of training for all enhancements, mostly ranging from 4 to 5 on a scale of 1 (low) to 5 (high). On average, teachers rated the training material as accessible and easy to understand, and the trainers as supportive, interested, and concerned about teachers' progress. Teachers also reported that the training helped to facilitate bet-

[2]Werner (2004).

ter relationships with the coaches and prepared them to successfully implement the enhancements' strategies with their students, as this lead teacher in Tools of the Mind said: "The easiest part was having her [the coach] to help get it implemented…We got a good start with the Saturday [training sessions]."

Coaches also reported that the training sessions were of high quality and beneficial to teachers. Coaches rated the training highly: 4 to 5 on a scale of 1 (low) to 5 (high) on the coach training feedback forms. On average, coaches responded positively to questions that addressed, for instance, whether the material was presented in an accessible and easy-to-understand manner; whether suggested classroom activity assignments were useful; whether the trainer was supportive, interested, and concerned about the coach's progress; and whether the coach would recommend the workshop to teachers.

The research team attended the training sessions with an eye toward gaining a better understanding of how the enhancement content was being delivered. Based on qualitative observations recorded in research team training observation forms, the researchers' evaluations differed somewhat from the teacher training feedback forms, identifying more variation in how the content was delivered across training sessions. In other words, the research team identified some slightly lower-quality and higher-quality training sessions. The general conclusion from those evaluations, however, was that most training sessions were of satisfactory quality, in that they accomplished the intended goals of preparing teachers to implement the assigned enhancement.

Support by Trainers

As part of each model, trainers also provided on-the-ground technical assistance to teachers and coaches in addition to conducting the training. In general, trainers for PATHS and Tools of the Mind were scheduled to visit classrooms once in the fall and once in the spring. The Incredible Years trainers usually stayed another day after training to either meet with coaches or observe classrooms, resulting in a greater number of trainer visit days in classrooms.

- **As planned, trainers visited classrooms between two and three times a year to support implementation of the enhancements.**

Trainer visits varied in terms of length, focus, and teachers' perception of the visit's usefulness. While some teachers thought the visits provided an important opportunity for them to check in with trainers and get hands-on support, other teachers found the visits less helpful. In general, teachers liked intensive, focused support from the trainers, and they believed that visits were not as helpful when they had less access to trainers.

Coaching in the Head Start CARES Demonstration

Coaches played a critical role, ensuring that teachers understood the enhancement practices that they learned in the training and implemented them in the classrooms. The typical Head Start CARES coach was female, 46 years of age, and white. A typical coach had a graduate degree in early childhood education, a minimum of 11 years of experience in early childhood settings, zero to four years of experience in adult education, and minimal training as a coach in a social-emotional intervention. Coaches were either full- or part-time employees of the grantee, and they had not generally been part of the Head Start system before the demonstration began. Most coaches were hired at the start of the implementation year by the grantee. The technical assistance team provided support to grantees who wanted it during the hiring process.

Fifty-two coaches supported implementation in the classroom; generally, each grantee hired three coaches, with each coach supporting a different enhancement. There was some turnover in coaching staff over the course of each year of enhancement implementation. For Cohort One, three coaches were hired or started late after replacing coaches who left the demonstration. For Cohort Two, four coaches left in the course of the year. (A separate report provides more information about coach hiring and other aspects of the Head Start CARES coaching process.)[3] This level of turnover was fairly low, and it did not seem to affect dosage and quality of the coaching component.

Fidelity of coaching was assessed by examining the dosage and the quality of coaching that teachers received. The fidelity of the coaching component was measured by observing whether coaches gathered information about implementation of the enhancement from weekly hour-long classroom observations and conducted weekly 30-minute coaching meetings that reviewed teachers' progress toward goals, addressed implementation-related issues, and made plans for future observations and meetings. Coaches were intended to be high quality, meaning that they were professional, steeped in early childhood development or teaching, and able to help teachers implement the enhancements well. Coaches were also required to meet with trainers to receive ongoing supervision. Consistent with the training component's goal of creating a team of teachers immersed in the learning and application of the enhancement content, lead and assistant teachers were expected to attend coaching sessions together.

Coaching Dosage

As described above, coaches were expected to meet with lead and assistant teachers for 30 minutes each week, in addition to conducting hour-long classroom observations weekly.

[3] Lloyd and Modlin (2012).

Given teachers' busy schedules and the additional demands of a comprehensive program such as Head Start — in which classrooms also provide children with meals, naps, and health initiatives such as brushing teeth — it was important to understand whether coaches were actually able to meet with teachers.

- **Dosage of coaching was closely aligned with what was prescribed.**

As shown in Table 3.3, coaches reported observing and meeting with teachers an average of three times a month. (The goal was to meet four times.) Observations of teacher practice lasted over 70 minutes on average (60 minutes was the expectation) and meeting times across enhancements averaged 51 minutes, exceeding the expected 30-minute meeting time specified in the model. In total, teachers and coaches worked together, on average, about two hours per week. Although the coach weekly logs indicate that coaches met with teachers for longer than the prescribed time, qualitative and survey data from interviews with coaches as well as with lead and assistant teachers indicate that creating time for coach-teacher meetings was a frequent challenge. Teachers often had to meet a number of requirements during the school day, and it was hard to find 30 minutes when both adults could leave the classroom. Additional probing of coaches about these findings suggests that they may have been coaching teachers

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Table 3.3

Number and Length of Coaching Meetings and Classroom Observations

Coaching Components	All Enhancements	Incredible Years	Preschool PATHS	Tools of the Mind
Coaching meeting				
Number throughout the year	23.89	23.69	23.73	24.25
Number per month	2.99	2.96	2.97	3.03
Average meeting length (minutes)	51.02	51.81	54.17	47.04
Classroom observation				
Number throughout the year	24.22	24.34	23.84	24.49
Average number per month	3.03	3.04	2.98	3.06
Average observation length (minutes)	77.25	75.48	73.95	82.37
Sample size[a]	230	77	77	76

SOURCE: MDRC calculations based on the coach weekly logs.

NOTES: Coach weekly logs were submitted weekly between September and April.
[a]For all variables in the table, data are available for 100 percent of the sample.

informally while the teachers were engaged in other classroom tasks. As discussed in more detail in Chapter 4, teachers in part-day classrooms had especially limited time for coaching during the days when they provided services to double sessions of children, with one immediately following the other.[4] However, part-day programs often operated for only four days of the week, leaving the fifth day for teachers to complete their planning, handle other work, and potentially receive coaching.

Coaching Quality

In addition to the frequency of coaches' meetings with teachers, fidelity to the coaching component required the coaches to deliver high-quality support. Enhancement trainers and teachers were the primary reporters of coaching quality. Trainers rated coaches using the trainer logs of coach quality an average of three times over the course of the implementation year on a scale of 1 (low) to 5 (high), which assessed items such as whether the coach ably demonstrated techniques or strategies of the enhancement; provided good feedback on observations using notes or data; helped teachers problem-solve about children, other staff, or center issues; and helped all teachers to implement the enhancement with fidelity to the model.

- **Coaches were of moderately high quality, based on trainers' reports, and they felt effective in their positions.**

Trainers reported that the quality of the coaches was moderately high, rating them an average of 3.97 out of a possible 5. There was, however, some variation across the enhancements: as shown in Table 3.4, Incredible Years and Tools of the Mind trainers rated their coaches at a moderately high level of quality,[5] with averages of 3.74 and 3.89, respectively, and PATHS trainers gave their coaches strong ratings, with an average of 4.30. Generally, coaches were able to support the implementation of their enhancement, with more than 89 percent of them receiving a score of 3 or higher, although developers observed during a year-end summary review that coaches' skill levels varied. Teachers also rated coaches highly in a lead teacher self-survey — an average of 4.63 for both the quality of coach support of implementation and of the coach-teacher relationship items (not shown in table).

[4]Full-day sessions lasted more than 3.5 hours. Part-day sessions lasted 3.5 hours or less, and some teachers taught two part-day sessions in one day.

[5]Trainers rated coaches on a scale of 1 (low) to 5 (high) in the trainer logs of coach quality based on observations of coaches and their classrooms, as well as trainers' impressions of coaches from training sessions, meetings, and supervisory phone calls. Trainers responded to items such as "the coach is knowledgeable about the strategies or program and can answer teachers' questions" and "the coach provides emotional support to his or her teachers."

Head Start CARES Demonstration

Table 3.4

Trainers' Ratings of Coach Quality, by Enhancement

Enhancement	Average Rating of Coach Quality	Percentage of Coaches Rated at Least 3	Percentage of Coaches Rated at Least 4	N[a]
Incredible Years	3.74	83.3	38.9	18
Preschool PATHS	4.30	94.1	76.5	17
Tools of the Mind	3.89	88.2	52.9	17
All enhancements	3.97	88.5	55.8	52

SOURCE: MDRC calculations based on the trainer logs of coach quality.

NOTES: Trainers rated coaches 2-3 times on average over the course of the school year, between September and April.

The ratings shown in the table measure 10 items and are assigned on a scale of 1 (low) to 5 (high).

[a]For all variables in the table, data are available for 100 percent of the sample.

Trainers and teachers reported that successful coaches exhibited skill in three important areas: knowledge of the enhancement being coached, general coaching and consultation skills, and knowledge of and experience in early childhood development and/or teaching.

Summary

Overall, training and coaching in the Head Start CARES demonstration were implemented as intended. Although the quality of coaching varied somewhat across the enhancements, teachers generally received well-structured training and coaching on an ongoing basis, setting the stage for them to implement the enhancements well in the classrooms. The next chapter examines how classroom implementation of the enhancements actually unfolded during the Head Start CARES demonstration, given the amount and quality of professional development and support that was provided to teachers.

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Chapter 4

Implementation of the Enhancements in the Classrooms

This chapter describes the extent to which the three Head Start CARES enhancements were delivered in the classroom with fidelity to the original design. It provides an overview of what implementation looked like in the classroom for each enhancement and summarizes the successes and challenges of the implementation process. It also outlines organizational challenges and supports that appeared to be important to teachers' classroom implementation.

Overall, the Head Start CARES enhancements were implemented successfully: when rated on a scale of 1 (low) to 5 (high), they scored above the predetermined threshold of 3 (satisfactory). Coaches and trainers independently described classroom implementation as satisfactory and continuously improving over the course of the year. When asked to describe their and children's reactions to the enhancements in their classrooms, teachers and staff from the Head Start centers generally replied positively, reporting that they liked the enhancements, which they believed made a difference in children's behavior.

Implementation varied across enhancements, however; The Incredible Years and Preschool PATHS were implemented with moderately high fidelity, and Tools of the Mind was implemented with lower but still generally satisfactory fidelity. Each enhancement had a unique set of activities that affected fidelity, but all the enhancements also faced some common challenges, such as a lack of time, resources, and organizational support. The findings suggest that, in addition to training, coaching, and technical assistance, grantee support and resources helped teachers to implement the enhancements.

How Was Fidelity Determined?

Coaches used coach monthly fidelity logs to document their impressions of teachers' implementation of each enhancement's core components. As explained in Box 4.1, these logs included sections in which coaches recorded their perceptions about areas of fidelity that were similar across the three social-emotional enhancements as well as those that were unique to each enhancement. Across all fidelity instruments, items were scored on a scale of 1 (low) to 5 (high).

Trainers completed trainer fidelity logs when they visited classrooms. These logs included a section in which trainers could record the extent to which both the lead and assistant teachers generalized and modeled the enhancement — for example, "Teachers are prepared for [enhancement] activities and seem familiar with what to do." Trainers also provided fidelity ratings on the extent to which the teachers implemented enhancement-specific activities.

Box 4.1

Maintaining Fidelity: Delivering the Enhancements in the Classroom as Intended

As with coaching and training, fidelity to the original design of the enhancements was measured in terms of both quality and dosage (frequency and duration). High fidelity was defined as implementing each of the enhancement components exceptionally well and often, and low fidelity was defined as implementing each of the enhancement components poorly or rarely. Benchmarks that were predetermined by the technical assistance team were used to track and monitor fidelity. On a scale of 1 (low) to 5 (high), classrooms with a rating above a 3, meaning that teachers were implementing the enhancement occasionally but not consistently, were considered to be above the threshold for implementing satisfactorily.

Fidelity was defined in two ways, taking into consideration coaches' and trainers' perceptions about global components of fidelity that were *similar* across the three social-emotional enhancements and components that were *unique* to each enhancement. Global items focused on the general feel of the classroom and whether the enhancement appeared to be implemented well, based on responses to questions that sought to determine whether, for example, "it is clear when you enter this classroom and look around, it is a [specific enhancement] classroom" and "the children are actively engaged in [specific enhancement] throughout the day. It is not just seen as a special event." Overall fidelity related to global components was determined based on an average of the responses to these questions.

Enhancement-specific questions included items about components that were unique to each enhancement, such as weekly large-group lessons in Preschool PATHS and having the children draw and write "play plans" in Tools of the Mind.

The full set of global and enhancement-specific items is listed in Appendix B.

What Did Classroom Implementation Look Like?

Given a sufficient level of support, including training, coaching, and technical assistance, it was hypothesized that teachers would be able to implement the enhancements well. The following sections detail what implementation of the enhancements looked like in the classrooms during the course of the implementation year and whether the enhancements were delivered in the classroom with sufficient fidelity to the original design.

- **All three enhancements were generally well received by teachers and Head Start staff.**

Teachers reported that the enhancements made sense to them and that they were able to implement the enhancements, although they felt that some aspects were harder than others. In addition, they reported that implementing the enhancements made a difference in their classrooms. Explaining how The Incredible Years has improved her ability to address children's behavioral issues in her classroom, one lead teacher said:

> A lot of times when children misbehave, you think, "My hands are tied. I can't do time out, I can't do this." Instead of, "I can't, I can't, I can't," Incredible Years made me think, "I can do this." It has helped, it really has. It has helped me to come up with solutions with what I'm doing in my room.

The perception among local Head Start staff, including lead and assistant teachers, center directors, and instructional coordinators, was that the children benefited from the enhancements. A lead teacher who was implementing PATHS commented that the children not only learned how to control their own emotions but also learned to help other children control their emotions. She perceived that these lessons led not only to more emotionally well-regulated children, but also to improvement in how children interacted with each other:

> Just the behavior of the children, you know, there are the changes in them, the way that they speak to one another…more respect. If one of my children is upset, they go to each other, "Do you need to do turtle?" or if one is upset: "You're hurting my feelings and that makes me sad." They pay good compliments to one another.

An assistant teacher who was implementing Tools of the Mind also commented that Tools taught children to control themselves. She noticed that where children had floated between play centers (play areas) during "center time" in an unregulated fashion before Tools was implemented, they now were able to play in one area for the full allotted time:

> I think it helped on the self-regulation, too, because we in the past had the kids…go from center to center to center…. [T]his changed [in Tools] because they had to play for 30 minutes. And at first, we didn't know how it was going to work, but…it helped; they finally got the hang of it…four- and five-year-olds got it. And they did regulate.

- **Fidelity of classroom implementation was above the predetermined threshold of "satisfactory."**

As mentioned previously, coaches completed coach monthly fidelity logs, and trainers completed trainer fidelity logs, documenting the implementation process and rating fidelity. Trainers completed the logs when they visited classrooms,[1] typically two times over the course

[1]For more information about the trainer visits, see Chapter 2.

of the year. The technical assistance team, in collaboration with the enhancement developers, set a predetermined threshold for assessing adequate global fidelity during the demonstration. A score of 3 on a scale of 1 (low) to 5 (high) was considered satisfactory, indicating that teachers were implementing the enhancement occasionally, though inconsistently. On average, Head Start CARES classrooms achieved, and often exceeded, this benchmark. Coaches gave classrooms an average score of 3.68, while trainers scored classrooms a 3.25, averaging a 3.47 between the two, as shown in Table 4.1.

Head Start CARES Demonstration

Table 4.1

Coaches' and Trainers' Ratings of Fidelity of Classroom Implementation

	Average Rating			
Perspective	All Enhancements	Incredible Years	Preschool PATHS	Tools of the Mind
Average coach and trainer perspective[a]	3.47	3.69	3.73	2.97
Trainer perspective	3.25	3.42	3.63	2.69
Coach perspective	3.68	3.96	3.82	3.25
Change over time (coach perspective)[b]	0.75	0.78	0.72	0.74
Sample size[c]	230	77	77	76

SOURCES: MDRC calculations based on the coach monthly fidelity logs and the trainer fidelity logs recorded in the management information system.

NOTES: Coaches filed coach monthly fidelity logs each month, between September and April.

Trainers rated classrooms an average of 2-3 times over the course of the school year, between September and April.

The ratings shown in the table measure 10 items and are assigned on a scale of 1 (low) to 5 (high).

[a]The average coach and trainer perspective rating is the average of the average coach perspective throughout the year and the average trainer perspective throughout the year.

[b]The change score is the difference between the coach rating from April or, if missing, March, and from September or, if missing, October.

[c]For all variables in the table, data are available for 100 percent of the sample, except for the "change over time" variable, for which data are available for at least 87 percent of the sample.

Associations between coach fidelity and trainer fidelity ratings suggest that although coaches and trainers rated classrooms differently (with coaches generally assigning higher fidelity ratings than trainers did), coaches and trainers generally agreed about classroom implemen-

tation.[2] The coaches' higher ratings may be explained by their more frequent interaction with teachers, allowing them to have a more complete view of the teachers' regular practices across many days. Trainers were less knowledgeable about teachers' day-to-day practices and observed teachers for only one day per rating observation. However, although they were not as familiar with the classrooms, trainers had more expertise in the enhancement content and had more experience with implementation across many classrooms and grantees. The fact that the coaches' and trainers' ratings are associated so strongly suggests that the rating instrument did in fact measure the constructs it was intended to assess.

- **Fidelity of classroom implementation improved over the course of the school year for all enhancements.**

As shown in Figure 4.1, management information system (MIS) data (that is, the fidelity log ratings) from coaches show that over the course of the school year, from September to April,[3] the average Head Start CARES classroom improved 0.75 point along a scale of 1 (low) to 5 (high). This is approximately three-fourths of a standard deviation of change, demonstrating that over eight months, teachers were able to substantially and positively change their level of implementation. As shown in Figure 4.2, coaches reported that most Head Start CARES classrooms (83 percent) scored at least at the basic technical assistance threshold of 3 in January, and in April, 60 percent of Head Start CARES classrooms scored at least a 4, indicating that they were implementing the enhancement well and consistently.

Most (75 percent) of the teachers who started the year with low classroom implementation scores ended the year at least at the threshold for satisfactory implementation (at or above a score of 3). Moreover, even teachers who began implementation well (at or above a 3) were able to improve: a majority of the teachers (64 percent) who started the year with a score between 3 and 4 ended the year with a score at or above a 4. It is encouraging that teachers continued to learn and improve classroom implementation over the course of the year; however, this change in implementation levels throughout the year also means that children did not necessarily receive high-quality implementation above the technical assistance threshold of a 3 for the whole year.

- **Implementation of the enhancement in the classroom with fidelity varied across enhancements, with moderately high levels for The Incredible Years and Preschool PATHS and a slightly lower level of fidelity for Tools of the Mind.**

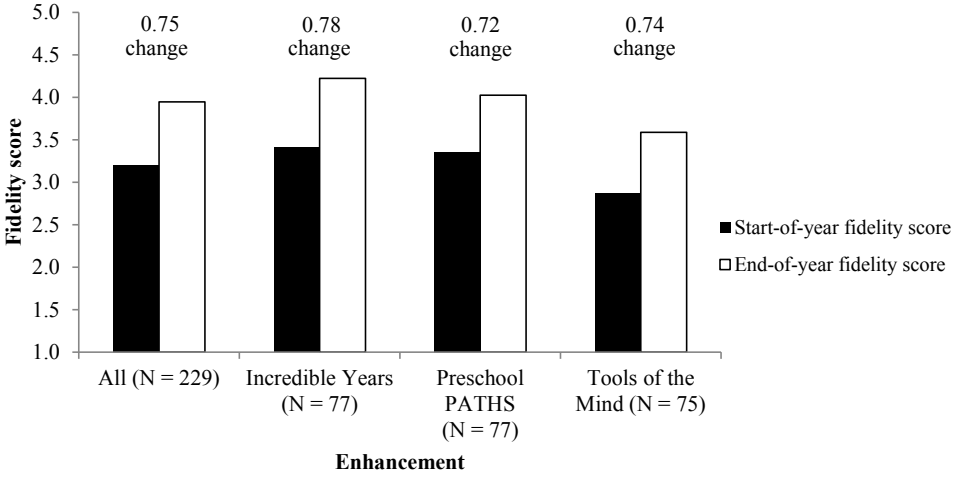
[2] A moderately high correlation was seen between coach and trainer ratings, with a correlation coefficient (Pearson's *r*) of 0.73.

[3] The change score is the difference between the coach rating from April or, if missing, March, and from September or, if missing, October.

Head Start CARES Demonstration

Figure 4.1

Classroom Fidelity Scores: Change Over Time



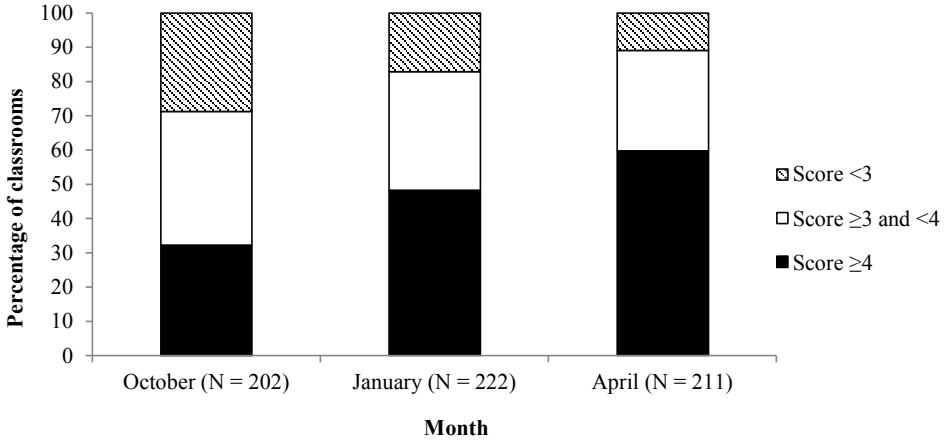
SOURCE: MDRC calculations based on the coach monthly fidelity logs.

NOTE: Coaches filed coach monthly fidelity logs each month between September and April. The "Start-of-year" score is from the coach rating in September or, if missing, October. The "End-of-year" score is from the coach rating in April or, if missing, March. The "Change score," shown above the columns, subtracts the start-of-year score from the end-of-year score.

The scores shown in the figure reflect 10 items and are assigned on a scale of 1 (low) to 5 (high).

Figure 4.2

Distribution of Classrooms, by Fidelity Scores



SOURCE: MDRC calculations based on the coach monthly fidelity logs.
NOTE: The scores shown in the figure reflect 10 items and are assigned on a scale of 1 (low) to 5 (high).

As shown in Table 4.1, fidelity varied by enhancement. Coaches and trainers rated fidelity as moderately high for The Incredible Years (3.69) and Preschool PATHS (3.73), while fidelity for Tools of the Mind implementation was not as strong (2.97), but still nearly reached the threshold of 3 that was considered to be satisfactory. Within these averages, individual classrooms implemented their respective enhancements at different levels of fidelity. Figure 4.3 demonstrates that, according to Incredible Years and PATHS coaches, about 70 percent of classrooms scored at least a 4 in April, while about 40 percent of Tools of the Mind classrooms had a similar score at the same time. Across all of the enhancements, however, there was still room for improvement in the level of classroom implementation. Although implementation *levels* differed across enhancements, the *improvement* in teacher implementation practices was similar across enhancements, ranging from a change in score of 0.72 point (PATHS) to 0.78 point (Incredible Years).

What Contributed to Classroom Implementation?

This section explores the characteristics of the enhancements and the teachers that may have contributed to implementation, other determinants of implementation, and potential solutions to the challenges that arose.

Characteristics of the Enhancements

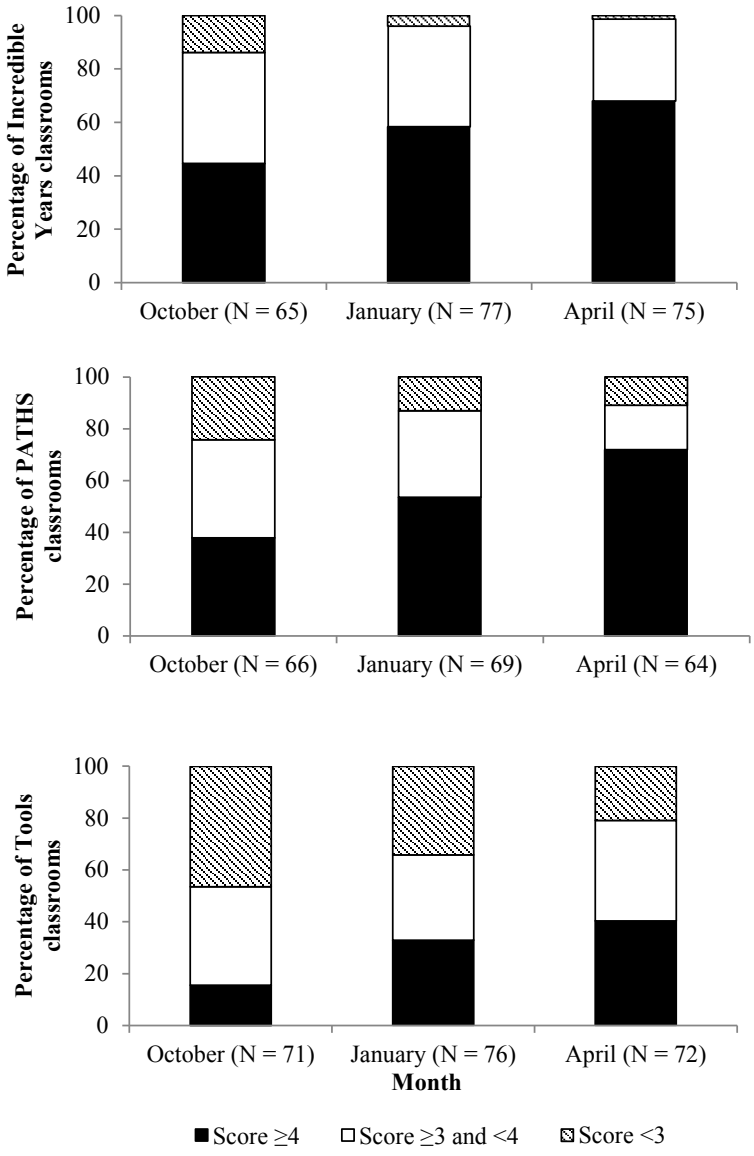
- **The structure, goals, and activities that are intrinsic to each enhancement may have affected implementation in the classroom.**

Implementation and technical assistance data suggest that the variation across enhancements may be related to the structure of the enhancements themselves. It was easier for teachers to implement an enhancement that was scripted and that involved activities or skills with which they were familiar. For example, scripted language that was similar to what teachers were already doing in classrooms made The Incredible Years easier to implement than Tools of the Mind. Likewise, Preschool PATHS gave teachers scripted support to implement relatively straightforward lessons in emotions and social skills. By contrast, Tools of the Mind required teachers to engage in more theoretically complex practices that were less familiar to them, and to change more of their daily practices, which may have been difficult to accomplish in one year of implementation.

Head Start CARES Demonstration

Figure 4.3

Distribution of Classrooms, by Fidelity Scores, for The Incredible Years, Preschool PATHS, and Tools of the Mind



SOURCE: MDRC calculations based on the coach monthly fidelity logs.

NOTE: The scores shown in the figure reflect 10 items and are assigned on a scale of 1 (low) to 5 (high).

The Incredible Years

The content of The Incredible Years Teacher Training Program focused heavily on building positive relationships with children and their families and teaching proactive classroom management techniques. The Incredible Years enhancement is based on best practices for early childhood teaching with minimal focus on preparing teachers to present specific lessons or content. On the one hand, this approach made it easier for teachers to implement the Incredible Years enhancement, as they were generally familiar with many of the practices being implemented and they did not need to alter their classroom schedule to allow for additional lessons and activities. Many teachers even commented that the Incredible Years practices were similar to rules and practices that they were already using. As one lead teacher observed, "A lot of the same rules that we learned in Incredible Years are very close to the classroom rules we have."

On the other hand, some teachers needed to adapt to the "Incredible Years way" by changing preexisting classroom management techniques. For example, faithful Incredible Years implementation required that some teachers modify their moment-to-moment interactions with the children in order to establish new classroom management norms. One lead teacher recalled struggling at the beginning of the year with the practice of ignoring the conduct of children who were misbehaving, a sentiment that other teachers expressed as well: "Ignoring was very difficult. If there was a behavior that a child wanted to get attention for, it was really hard to just let the child keep doing it."

Teachers were, however, used to some of the more common behavior management techniques, such as praising or complimenting. As shown in Table 4.2, fidelity was high for practices that are specific to The Incredible Years, but the level of fidelity was lower for practices that were less familiar to teachers or different from general practices that teachers were already using in the classroom. For example, The Incredible Years has teachers create behavior plans for children who are being disruptive; these plans lay out specific consequences for individual behaviors that a child is exhibiting. This more intensive behavior management practice, unique to the Incredible Years enhancement, was scored lower (3.5 out of 5) on fidelity than other components, such as commenting on good behavior (4.05), an activity with which most early childhood educators are already familiar.

Preschool PATHS

PATHS lessons and extension activities take up a clearly defined and limited amount of time each week, with one lesson and one extension activity lasting about 30 to 40 minutes for the week. The program also includes a regular daily activity (called "Kid of the Day," in which

Table 4.2

Fidelity Scores on Specific Components of The Incredible Years in the Classroom

Component	Score[a]
Comments on good behavior	4.05
Clear classroom rules	4.01
Ignoring[b]	3.85
Behavior plans	3.50
Sample size[c]	77

SOURCE: MDRC calculations based on the Incredible Years coach monthly fidelity logs.

NOTES: Coaches filed coach monthly fidelity logs each month between September and April.

[a]The scores shown in the table measure 13 items and are assigned on a scale of 1 (low) to 5 (high).

[b]Data for "Ignoring" start in February.

[c]For all variables in the table, data are available for 100 percent of the sample.

one child is given a special job and receives compliments from the teachers and the other children) and "generalization" (in which teachers integrate the themes and core practices of the enhancement into various activities throughout the day). As shown in Table 4.3, the more concrete aspects of PATHS were more easily implemented, with PATHS lessons, which are highly scripted, rating an average fidelity score of 3.76 over the course of the year, while fostering self-regulation, which was a later and less concrete part of PATHS, averaged 3.08. Many teachers explicitly pointed out PATHS' scripting as a reason for its ease of implementation, as this lead teacher remarked:

> I think because it is just scripted, you can read it, you can either follow the script, or you can put your own words into that situation because it's similar…I think that if you are able to kind of go along with the script, it's easy.

This relatively contained, highly scripted enhancement was easy for teachers to access and prepare, even though they hadn't implemented it before.

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Table 4.3

Fidelity Scores on Specific Components of Preschool PATHS in the Classroom

Component	Score[a]
Building a caring classroom: structure	3.79
PATHS lessons	3.76
"Kid of the Day" and compliments	3.76
Building a caring classroom: relationships	3.76
Nurturing emotional understanding	3.56
Fostering self-regulation	3.08
Sample size[b]	77

SOURCE: MDRC calculations based on the Preschool PATHS coach monthly fidelity logs.

NOTES: Coaches filed coach monthly fidelity logs each month between September and April.

[a]The scores shown in the table measure 10 items and are assigned on a scale of 1 (low) to 5 (high).

[b]For all variables in the table, data are available for 100 percent of the sample.

Tools of the Mind

As previously described in Chapter 2, the content in Tools of the Mind was condensed from a comprehensive curriculum as part of a two-year implementation process to an "enhancement" that could be implemented over the course of one year. Tools of the Mind was, however, tested under the same conditions as the other enhancements, with teachers randomly assigned to the enhancement and supported by a strong training and coaching professional development model.

Even in abbreviated form, Tools of the Mind required teachers to rearrange their classrooms or toys when a new play theme was started and to implement a set of new or less common activities daily. Some of the activities (buddy reading, message of the day, fingerplays)[4] were supported with well-prepared manuals and other classroom materials, and, according to teachers, were easy to implement. As one lead teacher explained:

[4]"Buddy reading" is when children take turns reading to each other. "Message of the day" is an activity in which the teacher and the children work to write a message. "Fingerplay" is any game that is acted out with the fingers, like "This Little Piggy."

> The must dos, those were simple…I always had a message of the day; it probably wasn't as detailed as how Tools desires, but I would definitely write with children every morning.

Other activities, such as play planning and play time, which required substantial scaffolding and support of children by both the lead and assistant teachers,[5] demanded a significant amount of teacher effort. These activities were theoretically complex: in addition to implementing the activity, teachers had to make knowledgeable decisions in the moment about how to support children and children's play, even if they had just learned the theory. For example, even by the end of the year, this lead teacher said the class still struggled with play plans:

> To me, [play plans are] still a little difficult; it's still a little shaky…Some of them that are artists or drawers, you know, it [the plan] would look more advanced, [because they] would draw their plans and move [on],… whereas with some of them, that concept just didn't register. It would take longer then, the concentration would stop, they're looking around and then they would just scribble and give something. That was hard.

Teachers were asked to actively engage with children in make-believe play and to scaffold children's efforts when they were playing with each other. This approach often contrasted with previous teacher behaviors during play time, when they typically focused on completing paperwork or relaxing and playing with the children.[6] As shown in Table 4.4, teachers did a better job of implementing "graphics practice/buddy reading," which received an average fidelity score of 3.26 over the course of the year, while the more complex and time-intensive make-believe play practice, which was a key activity of the Tools enhancement, received a score of only 2.62.

Characteristics of the Teachers

- **Some teacher characteristics, such as age and motivation to implement the enhancement, were associated with a teacher's implementation fidelity.**

In addition to the characteristics of the enhancements, it was possible that teacher characteristics, as shown in Table 4.5, were also associated with fidelity to the design of the enhancement as delivered in the classroom. To explore this issue, analyses were conducted of ass-

[5]Recall from Chapter 2 that scaffolding is a practice that teachers use to support a child's activity or response at his or her current level of understanding while extending the activity or response in order to push the child to the next level of ability.

[6]Other studies have shown that teachers spend as much as 60 percent of free play time completing tasks such as talking with other teachers and parents and handling administrative duties. For more information, see Coplan and Prakesh (2003); Kontos (1999).

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Table 4.4

Fidelity Scores on Specific Components of Tools of the Mind in the Classroom

Components	Score[a]
Graphics practice/buddy reading	3.26
Play planning and scaffolded writing	3.10
Make-believe play	2.96
Make-believe play practice	2.62
Sample size[b]	76

SOURCE: MDRC calculations based on the Tools of the Mind coach monthly fidelity logs.

NOTES: Coaches filed coach monthly fidelity logs each month between September and April.

[a]The scores shown in the table measure 6 items and are assigned on a scale of 1 (low) to 5 (high).

[b]For all variables in the table, data are available for 100 percent of the sample.

ociations between lead teachers' baseline characteristics, collected via a teacher self-survey (at baseline), and scores reflecting fidelity of classroom implementation. In the time between baseline in the spring and implementation during the school year, some teachers left the study and were replaced by new teachers. Therefore, some teachers do not have baseline data available and are not included in these analyses.

The results show that age was somewhat negatively associated with the teacher's fidelity.[7] That is, older teachers implemented the enhancements less faithfully than did younger teachers, a similar pattern to that seen in previous research.[8] Although there is no definitive evidence to explain this finding, it may be that younger teachers are more open to taking advantage of new practices than older teachers are. Somewhat surprisingly, teachers' level of experience, years teaching, and years of education were *not* associated with teachers' implementation of the enhancements, although, as can be seen in Table 4.5, there was little variability in some of these, particularly teachers' experience level. Taken together, these findings suggest that there is

[7]The correlation and p-value are as follows: $r = -0.15$; $p = 0.066$.

[8]Klimes-Dougan et al. (2009).

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Table 4.5

Selected Baseline Characteristics of Lead Teachers in the Program Sample

Characteristic	Mean	Standard Deviation
Age (years)	44.54	11.87
Education (%)		
Less than an associate's degree	8.82	–
Associate's degree but no bachelor's degree	28.82	–
Bachelor's degree but no graduate degree	55.29	–
Graduate degree	7.06	–
Teaching experience level (%)		
Novice (0 to less than 3 years)	5.33	–
Experienced (3 to less than 10 years)	26.04	–
Seasoned (10 years or more)	68.64	–
Years teaching	16.26	9.87
Scored measures[a]		
Motivation to implement (1-5)	4.18	0.77
Burnout (0-54)	13.16	10.54
Reactions to childrens' negative emotions (0-4)	3.55	0.56
Lead teacher-teaching assistant relationship (1-5)	4.51	0.80
Adaptability (0-4)	3.07	0.62
Sample size[b]		171

SOURCE: MDRC calculations based on the spring teacher self-survey (baseline).

NOTE: [a]The scale (range of scores) for each measure is shown in parentheses.
[b]For all variables in the table except for "Motivation to implement," the sample size is 171, and data are available for at least 94 percent of that sample. Data for "Motivation to implement" are available for 184 teachers because they were collected at a later date, after some teachers in the sample had already left and were replaced.

no clear relationship between age, credentials, or experience and implementation of the Head Start CARES enhancements, and in fact teachers of varying levels of experience and background are likely equally able to implement them successfully.

Teachers' implementation of the enhancements with fidelity was also positively associated with their motivation to implement the intervention at the beginning of the school year.[9] At

[9]The correlation and p-value are as follows: $r = 0.23$; $p = 0.002$.

the beginning of the year, teachers were asked whether they felt motivated to use the strategies in their classrooms. Teachers who reported higher levels of motivation to implement the enhancement in their classrooms at the start of the school year also showed higher levels of fidelity to the original model when delivering the enhancement in the classroom. This finding aligns with recent work demonstrating that practitioners' pre-implementation beliefs and enthusiasm about an enhancement are positively associated with the number of intervention sessions delivered, a measure of intervention fidelity.[10] While not surprising, so little is known about what leads teachers to implement evidence-based practices that this connection between teachers' self-described motivation to implement an intervention and their actual implementation of the enhancement adds important information to the field's preliminary knowledge base.

Delivering the enhancement as intended in the classroom was not significantly associated, however, with teachers' "burnout" at the beginning of the study, teachers' reactions to children's negative emotions, the relationship between the lead and assistant teachers as rated by lead teachers, or the teachers' view of their own adaptability to change. Notably, in this demonstration, there seems to be little variability in many of these more nuanced teacher psychosocial measures. This low variability may have contributed to the lack of associations between teacher characteristics and fidelity.

Other Determinants of and Barriers to Implementation

Aside from enhancement and teacher characteristics, other factors such as resources, time, and language played a role in how well teachers could implement the enhancements. This section explores some of those factors and the solutions derived to address them.

- **Significant challenges to classroom implementation arose, but teachers, coaches, and grantees developed creative solutions for many of them.**

Although implementation of the enhancements was satisfactory or better, teachers and coaches identified barriers to implementation throughout the year. Not all of the issues affected teachers equally across grantees and enhancements, however.

In general, barriers to implementation included (1) a lack of resources and materials; (2) insufficient time for teachers to plan and meet with coaches; (3) a mismatch in language among children, teachers, and coaches; (4) the absence of support for teachers and coaches from the Head Start centers; (5) additional curricular or assessment requirements; and (6) Head Start performance standards monitoring. Teacher turnover and teacher stress also made classroom im-

[10]Klimes-Dougan et al. (2009).

plementation more difficult. Despite these difficulties, teachers, coaches, and grantees often worked together to develop creative and context-appropriate solutions.

Resources and Materials

A few of the classrooms lacked basic supplies like materials, books, and toys that were needed to support enhancement implementation. It became challenging for those low-resource classrooms to implement certain activities — for instance, when they were unable to make photocopies of turtle pictures in Preschool PATHS classrooms or did not have enough books to support buddy reading in Tools of the Mind classrooms. Coaches and teachers helped support the need for basic supplies by making toys from materials found at home or in low-cost or secondhand stores. To proactively address these issues in Cohort Two centers, teachers were provided with a $100 gift card to an educational store to buy supplies as needed for implementation. Teachers and coaches worked together to identify the class's implementation needs and to make decisions about how best to spend the gift card.

Time to Plan and Meet with Coaches

Teachers and coaches consistently described challenges in finding time to meet with one another, despite data showing that coaching meetings happened frequently and for longer than expected. One way grantees supported teacher-coach meetings was to hire "floating" substitutes for the days when the coach visited the center, so that teachers could rotate out of the classroom for their coach meeting without being concerned that their classrooms would lack an educator. Coaches also reported "coaching on the fly," meaning they worked and reflected with teachers throughout the day in the classroom, instead of in a separate, more formal meeting.

Teachers in Tools of the Mind classrooms may have been even more pressed for time than teachers implementing Incredible Years or Preschool PATHS, because Tools required a substantial amount of time to implement all of the activities and intensive amounts of the teachers' focus and attention on each individual child to scaffold their play and learning. In addition, as described previously, the Tools enhancement included changes in learning themes throughout the year, requiring teachers to spend time (and sometimes money) to create new props and items for implementing the theme.

Teachers in double-session, part-day classrooms also had difficulty finding time to implement and plan. In Head Start CARES, some of the part-day classrooms operated as double sessions, where teachers taught one class in the morning and a second, separate class in the afternoon. To accommodate teachers' need to plan and make home visits (which are part of the Head Start system of services to families), most part-day programs also offered programming for four days a week instead of five days. The classroom time for each session was often very short (3.5 hours or less), and teachers had two groups of children to plan for with little time dur-

ing the day to prepare. Coaches and teachers in such part-day classrooms identified the lack of time as a barrier to implementation, as described by this lead teacher in PATHS: "I work in a half-day program. The morning session has breakfast and lunch, and mandated play time. So, it can be very difficult to get everything in."

Interestingly, fidelity to the design of the enhancement among teachers in full-day classrooms (with a mean score of 3.41 out of 5) was actually significantly lower than fidelity among part-day classrooms (with a mean score of 3.74 out of 5).[11] In other words, despite the lack of time, coaches and trainers reported that the enhancements were more likely to be implemented as intended in part-day classrooms than in full-day classrooms. Although the reason for this finding is unclear, there are a few possibilities. Perhaps the amount of time in part-day classrooms that is devoted to instruction and active participation is higher compared with that in full-day classrooms, which also include time for naps, lunch, and other, less formal activities. Less "down time" in classrooms may force teachers to be more diligent about ensuring that implementation occurs throughout the day. Alternatively, part-day classroom settings may have made teachers, coaches, and centers more committed to overcoming these time challenges. As noted above, part-day programs generally operated four days a week, and teachers had one day available for planning and other responsibilities. Coaches and teachers may have been more cognizant of the lack of time and had more focused or more structured coaching sessions or taken advantage of the one day a week that teachers had free for planning.

Language Mismatch

While teachers were trained in the enhancements in English with the expectation that they would also implement the intervention in English, that did not always happen. Some teachers who spoke English as a second language struggled during the training sessions because the content was delivered in English. Teachers in bilingual classrooms often delivered the enhancement to children in Spanish, the children's language of comfort, in an effort to better engage them in the activities. Because the enhancement materials were not available in Spanish, translations may have been less than accurate, as teachers often translated the material in the classroom as they were talking to children. In some cases, only one member of the teaching team spoke Spanish, making implementation on the part of both teachers a greater challenge. Additionally, often the coaches were not hired to match the linguistic make-up of the Head Start centers. This made coaching difficult, as coaches were not able to understand non-English inter-

[11]The difference in the fidelity scores between full- and part-day classrooms was statistically significant at the $p = 0.01$ level. That is, there was a 1 percent probability that the difference was a result of chance alone, meaning that the difference could be attributed to the type of classroom with a high degree of confidence.

actions among children or between teachers and children. In those situations, coaches had to work with both teachers to come up with solutions; for instance, the teachers might translate for the coach as she watched or the assistant teacher might conduct some lessons in Spanish for children who needed it.

Level of Support from the Head Start Center

Some teachers were also affected by other center-level factors, such as lack of support or a difficult space in which to work. Cross-classroom support and collaboration within centers was limited; teachers basically operated on their own in the classrooms. Lead and assistant teacher interviews revealed that they valued whatever opportunities they had to communicate with other teachers. Oftentimes, these opportunities occurred during training, according to this Tools of the Mind lead teacher:

> I love gleaning from other educators, so I enjoyed the initial training because more people were there. Even if just another school was there, we could compare and see how things are working for them. I like having a fresh set of eyes and fresh perspective. It might motivate you to look at things a little differently.

In addition to interpersonal support, some teachers also needed support to manage the physical environment in the center. In a few cases, teachers had to pack up their classrooms at the end of the week so the room could be used for other purposes. The need to pack up their belongings may have cut into teachers' time for implementation or coaching; in particular, Tools teachers in this situation struggled because they needed to continuously recreate elaborate make-believe play areas.

Additional Curricular or Assessment Requirements

Teachers were challenged to implement multiple curricula, special programs, and child assessments at the same time that they were implementing their Head Start CARES enhancement. All 17 grantees were already using a base curriculum — usually Creative Curriculum or High/Scope — and implementing the Head Start CARES enhancements on top of it. To balance the competing implementation needs of these curricula or assessments along with the Head Start CARES enhancements, developers created "crosswalks" to help teachers and program administrators understand how each enhancement fulfilled other program requirements. For example, developers might point out that documentation of child interactions during a specific social-emotional activity in their enhancement would also help teachers fulfill the requirement for documenting social-emotional school readiness. While these crosswalks were an important first step, it was still often difficult for teachers to balance competing demands for their time and attention.

National Head Start Performance Standards and Administrative Monitoring and Oversight

In addition to ongoing classroom demands and requirements, all Head Start centers are subject to national Head Start performance regulations. These requirements are accompanied by a strict and fixed monitoring schedule, a high level of administrative oversight, and significant consequences for poor performance.

For this reason, adhering to the requirements of the Head Start CARES project was not a simple undertaking for grantees that were scheduled for a monitoring visit during the implementation year. In some cases, particular aspects of the enhancements created real or perceived conflicts with Head Start regulations, leading to a heightened sensitivity on the part of grantee administrators and classroom teachers about implementing activities that monitors might view as outside of usual and required practice. The need to prepare for monitoring visits also created additional demands on teaching staff. As a counterpoint, some grantees reported that implementation of the enhancements strengthened their classroom programs and contributed to performing well on the monitoring requirements.

Which Organizational Characteristics Are Important for Implementation?

Organizational characteristics and support appeared to be integral to whether teachers could implement the enhancements well in their classrooms. Organizational support manifested itself in many ways, including the communication of support for the demonstration and implementation of each enhancement, the provision of materials, and how well grantees thought the enhancements fit with their mission.

The design of the research study was also a factor. Grantees were asked to allow their centers to implement three separate enhancements at the same time, while being encouraged to remain neutral and not favor a particular enhancement over another. In an effort to remain neutral, administrators may have been effectively silent about all the enhancements.

The Head Start CARES data do not formally reflect the relationship between organizational capacity and fidelity. However, organizational support in the demonstration was evaluated from many different perspectives. Coaches, trainers, and developers completed written assessments based on their interactions with and knowledge about grantees throughout the year. The research team assessed the grantees based on site visits and the technical assistance they provided. In order to identify characteristics of a strong grantee, coach assessments, trainer assessments, developer assessments, research team assessments, and a qualitative ranking were

combined into a single rating system.[12] The ratings of grantees that the research team gathered from site visits suggest that organizational capacity was a key facilitator of quality professional development and classroom implementation of the enhancements.

- **Grantees that provided higher levels of organizational support did so in different ways, including sending encouraging messages about implementation, hiring appropriate staff in a timely manner, providing resources for implementation, and helping teachers overcome obstacles such as a lack of time.**

Grantees that were better able to support implementation sent strong messages of support for Head Start CARES implementation to their teachers, hired and provided administrative supervision for coaches, helped efforts to crosswalk and integrate the enhancement with their core curriculum, made time and space available for teacher training, and devised solutions to time management challenges, such as providing "floating" teachers or substitutes during coach-teacher meetings, as described earlier.

Grantees with a high level of organizational support had backing from multiple members of the administration. Center directors or administrators may not have unanimously supported or been involved in the implementation process, but more than one staff member with administrative clout tended to work closely with the teachers and coaches to actively support enhancement implementation. In some cases, the center administrator attended training sessions and sometimes even drove teachers to training themselves. In other cases, the enthusiastic support came from mental health specialists, education coordinators, or education specialists.[13] In highly supportive grantees, additional staff members or administrators who were neither grantee liaisons nor teachers were consistently and actively involved in implementation.

In many cases, these grantees also established concrete performance expectations for teachers. The coach and grantee liaison communicated regularly with the center administrators, educational specialists, and other center-based staff. The grantee liaison and administration showed interest in what was happening in the classrooms and checked in to make sure that implementation was continuing as expected. In some centers, this came in the form of regular

[12]At the end of implementation, but before any impact findings were known, MDRC research and site teams held a final meeting to reflect on implementation using information collected from a range of MIS and interview data, as well as data from coach calls, developer meetings, and other sources. The team rated each grantee, by enhancement, on the quality of training, coaching, classroom implementation, and organizational support. The ratings were assigned on a scale of low, medium-low, medium, medium-high, and high, and were reached through a process of consensus building.

[13]Head Start provides comprehensive education, physical health, and mental health services to low-income children. Education coordinators and specialists help support curriculum and educational programs, and mental health specialists work with classrooms and individual children with regard to mental health services.

meetings; in other centers, administrators or education specialists made themselves available for questions.

Conversely, it also seemed important that administrators were flexible and not too minutely involved in implementation. Some teachers and coaches commented that strong administrators were "hands off" and did not "micro-manage," which made teachers feel supported and trusted in their work. Teachers' personal time was respected and teachers were able to change their work schedule to suit their needs and adapt it as they went through training. In grantees with strong organizational support, teachers were permitted to drop some of the responsibilities that they previously had in order to implement the enhancement. Building on a more complete understanding of the crosswalks, administrators were able to understand why certain lesson plans may have been replaced or became more relaxed about curricula that weren't specific to Head Start CARES.

Finally, grantees that were characterized as offering strong organizational support tended to provide teachers and coaches with all the materials that they needed. Materials were usually easy to obtain, and teachers were reimbursed relatively quickly, if necessary. In most cases, materials were provided and teachers did not have to lay out any money. These grantees were characterized as being generally positive and maintaining supportive environments. Staff from more than one such grantee said they felt that they were part of a family.

- **Among grantees who were ranked lower on organizational support, messaging and communication between center and grantee staff were consistently cited as challenges.**

In some cases, grantee- or center-level administrators or directors sent mixed messages with regard to support for Head Start CARES implementation. They might, for instance, require teachers to focus on other center-level issues that diverted time and attention away from Head Start CARES implementation. Some grantees were implementing multiple interventions during the school year, without providing follow-up to help teachers prioritize the demands on their time. At other times, teachers described feeling disconnected from grantee staff and any message of support. In part, this may have been the result of turnover in key management positions and management structures in which center staff had limited interaction with upper-level administration.

- **Grantee perspectives on specific enhancements may have influenced implementation in the classroom.**

Throughout the course of implementation, most Head Start CARES grantees developed opinions about the fit and suitability of the enhancements for their centers despite the research requirement that grantees remain neutral on this score. A grantee's negative perception of an

enhancement may have affected organizational support and had a negative effect on teachers' motivation or implementation with fidelity to the original enhancement design. Although teachers' and administrators' perceptions of a particular enhancement tended to be similar within a grantee, each of the three enhancements was perceived differently within grantees; for example, a grantee might find that one enhancement was more consistent with its approach to providing services for children than another enhancement. Concerns about a specific enhancement generally focused on how it fit with the classroom curricula, Head Start performance standards, or program philosophy.

In general, Incredible Years and PATHS teachers and coaches felt supported by grantees, while Tools of the Mind teachers and coaches felt less supported. This difference may be related in part to Tools' complexity and origins as a full curriculum, as well as what some grantee liaisons saw as a "prescribed" or teacher-directed approach to classroom learning. As explained earlier, Tools of the Mind involved more changes to the classroom structure, therefore requiring increased flexibility and comprehension on the part of the administrators to ensure that other criteria were still met. Several Tools trainers speculated that a lack of grantee support affected implementation because, as one trainer said, "the teachers seemed particularly concerned with their jobs and did not want to do anything they felt the supervisor didn't support" or because, according to another, "the teachers just don't really want to do [the enhancement]" without the administration's ongoing support and presence. Poor organizational support for The Incredible Years tended to focus on issues of Head Start performance requirements, which grantees sometimes perceived as conflicting with the enhancement. The research team did not learn of any instances in which PATHS conflicted with the organization's mission or vision.

Overcoming such resistance was possible, however, and some grantees supported implementation despite concerns about some aspect of the Head Start CARES enhancements. In one case, the grantee made minor concessions on agency policies and practice to support implementation despite some discomfort with two enhancements. This may have made a difference in the teachers' attitudes because it communicated that the agency cared how well and completely the enhancements were implemented by showing their interest in minimizing the challenges in the classroom.

Summary

Fidelity of classroom implementation exceeded the predetermined threshold of "satisfactory" and improved over the course of the year. Fidelity varied across enhancements, possibly based on the structure and content of each enhancement. Teachers and coaches worked together to find creative solutions to implementation challenges. Organizational support and resources, as

well as teachers' characteristics, influenced the quality of implementation. Teachers who started with greater motivation to deliver the enhancements and younger teachers were slightly better at implementation than were less motivated and older teachers, on average. When grantees communicated openly, were receptive to the enhancement, and provided teachers and coaches with the time and materials necessary to implement the intervention, classroom implementation went more smoothly.

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Chapter 5

Changes in Teacher Practice

This chapter explores whether implementation of the three Head Start CARES program enhancements changed teachers' day-to-day practices in the classroom. It presents the first impacts (or effects) of the enhancements by comparing teacher practices in the Head Start centers where the enhancements were implemented with teacher practices in the control group (or "business as usual") centers.

Did Implementation of the Enhancements Lead to Changes in Teacher Practice?

According to the theory of change for Head Start CARES, faithful implementation of the intervention should lead to positive change in teacher practice. Previous research across a range of social service interventions has found that the extent to which an intervention was implemented with fidelity to its original design was strongly associated with the intervention's effect on outcomes of interest.[1] In the Head Start CARES demonstration, changes in teacher practice were conceptualized as "first order" effects; that is, teacher practice was considered to be the direct target of these enhancements. It was hypothesized that in order to see change in "second order" outcomes such as classroom interactions or children's social-emotional behaviors, change would first need to be observed in the "first order" practices.

Findings in this report demonstrate that implementation of the enhancements in the classroom was satisfactory or better. Given that coaching and training were implemented well and implementation of the enhancements in the classroom was described as satisfactory or better, the next logical question was whether this level of implementation was sufficient to produce measurable changes in teacher practice.

- **Each enhancement emphasized a specific teacher behavior that was distinct from those emphasized in the other social-emotional enhancements.**

Given the different focus of each enhancement, it was hypothesized that each would emphasize a different teacher skill or practice in the classroom. For instance, Tools of the Mind — Play focuses directly and explicitly on teachers' scaffolding of children's behavior during play — that is, bolstering children's current ability to play and supporting them in their progress toward a more complex level of play. The other enhancements did not as directly emphasize

[1] Martinez-Beck (2013).

scaffolding of children's "pretend play" behavior. In fact, each enhancement emphasized a particular practice that would be expected to change once teachers implemented that enhancement.

However, the specific set of skills and behaviors that each enhancement directly emphasize were not necessarily the only teacher practices that the enhancement could have influenced. Each enhancement addressed a number of different teacher behaviors, including some of the primary teacher practices of the other enhancements. For instance, The Incredible Years focused on classroom management, but also trained teachers to help the children with social problem-solving and emotion regulation. Preschool PATHS targeted emotional competence, self-regulation, and social problem-solving development in children, but also promoted good classroom management as an integral part of a teacher's ability to instruct children on the other skills. Tools of the Mind emphasized the support of teachers' scaffolding behavior, but also attempted to change teachers' use of time for transitions between activities, teachers' interaction with children's play, and teachers' behavior and practices during literacy activities, among many others. A content-focused review of the three enhancements' lessons or manuals that was conducted before Head Start CARES began demonstrated that the enhancements share some content, but the emphasis of each enhancement is different.[2]

The teacher skills and practices that each enhancement targeted directly could also be observable to some extent in classrooms where the intervention was not delivered. That is, teachers in the control group may have used classroom management techniques, instructed children in social-emotional skills, and scaffolded children's interactions.

Given this possibility, it was hypothesized that:

1. **The Incredible Years would demonstrate an impact on teachers' classroom management skills.** Strengthening classroom management skills and building positive relationships with students and their parents are main targets of The Incredible Years and include the teachers' use of a consistent routine; preparedness for classroom activities; awareness of what is happening in the classroom at all times; use of persistence, social and emotional coaching strategies, and proactive behavior management techniques, such as praising and rewarding good behavior and providing clear consequences; minimal use of negative behavior techniques, such as yelling or harshness; and use of gestures and cues to get the class's attention.

2. **Preschool PATHS would demonstrate an impact on teachers' social-emotional instruction skills.** These skills include modeling emotion identifi-

[2]See Appendix E for more details about the content foci of each enhancement and how they do and do not overlap.

cation and labeling;[3] creating an environment that is supportive of children's emotional expression; encouraging techniques for calming down; facilitating social awareness such as empathy; helping problem-solve in social situations; and supporting children's efforts to regain emotional control.

3. **Tools of the Mind would demonstrate an impact on teachers' scaffolding of peer interactions and play.** Scaffolding is a practice teachers use to support children's activities or responses at their current level of understanding while extending the activities or responses in order to help the children advance to their next level of ability. Tools directly promotes teachers' scaffolding skills, which include scaffolding children's pretend play through extended planning and expanding or extending children's games to be more elaborate, as well as scaffolding children's interactions with each other while they are playing together.

To measure the targeted teacher practices, independent observers collected information about teacher classroom management, teacher social-emotional instruction, and teacher scaffolding in all Head Start CARES classrooms. Observations were conducted in the spring before implementation began and in the spring of the implementation year. Box 5.1 describes the instrument that was used to observe teacher practice.

In the spring *before* implementation began, teachers in each enhancement group and the control group were similar for the most part, as shown in Table 5.1. Enhancement and control classrooms also scored similarly on baseline measures of teachers' classroom management, teachers' social-emotional instruction, and teachers' scaffolding. Baseline data demonstrate that while only a little scaffolding and social-emotional instruction occurred in preschool classrooms generally, teachers spent a fair amount of time on classroom management. Because of this high level of classroom management at baseline, it was possible that it would be difficult for The Incredible Years to produce significant improvement in teachers' classroom management.

One of the challenges of assessing change in teacher practice is that teachers may change their practice over the course of the year even in classrooms where there is no special social-emotional intervention. For example, teachers may have a particularly challenging child in the classroom that year and change the way they manage their class to address the child's behavior. Fortunately, because Head Start CARES was implemented in a well-conducted random assignment evaluation, teacher practice in classrooms where the enhancements were delivered could be

[3] "Emotion identification" is the ability to comprehend an emotion that someone is exhibiting. "Emotion labeling" is the act of verbally naming an emotion while someone is expressing it.

Box 5.1

Teacher Practice Measure

Observations that were collected through an instrument called the Adapted Teaching Style Rating Scale (Adapted TSRS) provide information about teacher practice. In the spring before the start of Head Start CARES implementation and in the spring of the implementation year, observers who were blind to the intervention status of the classrooms observed the teachers and classrooms for one day. Appendix F lists all items on the instrument. Teachers were rated on:

1. Classroom management: consistency/routine, preparedness, classroom awareness, positive behavior management, negative behavior management, and attention to/engagement with behavior in the classroom.
2. Social-emotional instruction: emotion modeling, emotion expression, emotion regulation, social awareness, social problem-solving, and provision of interpersonal support.
3. Scaffolding: supporting/extending dramatic play and peer interactions.

compared with teacher practice in the control group classrooms. In a sufficiently large study sample such as this one, because assignment to one of the enhancements or to the control condition occurred randomly, any changes in teacher practice or children's behavior that were observed were not indicative of baseline differences among teachers, but instead reflected the implementation of the social-emotional enhancements. As such, analyses compare teacher practice scores in the spring of the implementation year for teachers in Head Start centers where enhancements were assigned with teachers in control group centers. Any differences between the two groups of teachers are presented below as the effect, or *impact*, of the enhancement.[4] Those differences that are unlikely to have occurred by chance are described as statistically significant.

[4]To estimate impacts for this report, mean outcomes for each enhancement group were compared with corresponding means for the control group, in models pooled across all three enhancements. Models also controlled for key background characteristics, including a pretest on the outcome measure (for example, the previous spring's observation score). Multilevel modeling was used to account for the nested nature of the data, where classrooms are nested within centers and centers are nested within "blocks." Not all the centers that were associated with some of the larger grantees were similar in racial/ethnic composition, part-day/full-day status, and classrooms with only four-year-olds versus classrooms with students who were a mix of ages. For those grantees, participating Head Start centers were grouped into smaller four- or eight-center random assignment blocks, so that all the centers in each block were comparable across these characteristics. Fixed effects accounted for the nesting of centers within blocks.

Head Start CARES Demonstration

Table 5.1

Selected Baseline Characteristics of Teachers, by Enhancement

Characteristic	Control Group	Incredible Years (IY) Program Group	Incredible Years (IY) Difference (IY vs. Control)	Preschool PATHS Program Group	Preschool PATHS Difference (PATHS vs. Control)	Tools of the Mind Program Group	Tools of the Mind Difference (Tools vs. Control)
Demographics							
Age (years)	40.38	41.09	0.71	43.48	3.10	43.83	3.45 *
Race and ethnicity (%)							
White, non-Hispanic	28.02	30.39	2.37	31.59	3.57	27.25	-0.77
African-American, non-Hispanic	30.68	25.77	-4.91	32.91	2.24	30.40	-0.27
Hispanic	36.24	34.05	-2.19	29.11	-7.13	34.38	-1.86
Other/multiracial[a]	4.54	9.80	5.26	6.35	1.81	7.95	3.41
Bachelor's degree or higher (%)	64.69	68.77	4.08	66.41	1.72	59.38	-5.31
Teacher burnout[b]							
Maslach Burnout Inventory:							
Emotional Exhaustion Subscale (0-54)	13.28	16.72	3.45 *	14.50	1.23	13.98	0.70
Teacher depression[b]							
K-6 Depression Score (0-24)	2.14	3.17	1.04 *	3.74	1.60 ***	3.04	0.90
Teacher emotion and socialization practices[b]							
Social-emotional practices (%)							
Focus on academics	2.57	8.06	5.49	1.21	-1.37	9.22	6.64 *
Neutral focus	79.63	73.72	-5.91	75.34	-4.30	72.43	-7.21
Focus on social-emotional development	17.79	18.28	0.50	23.45	5.67	18.37	0.58
Mean of emotion coaching items[c] (0-4)	3.61	3.41	-0.20 **	3.50	-0.11	3.55	-0.06
Sample size[d]	77	77		77		76	

SOURCE: MDRC calculations based on the spring lead teacher self-survey (conducted at baseline).

NOTES: Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Rounding may cause slight discrepancies in sums and differences.

[a]"Other" includes Asian, Native Hawaiian/Pacific Islander, and American Indian/Alaska Native.

[b]Scale (range of scores) is shown in parentheses.

[c]Emotion coaching was defined as teachers' ability to positively support children's navigation of negative or difficult emotions.

[d]For all variables in the table, data are available for at least 90 percent of the sample.

- **As expected, teacher practice improved in classrooms where the enhancements were implemented compared with the control group ("business as usual") classrooms.**

Each enhancement changed the skill it emphasized, as hypothesized, and it is extremely unlikely that this pattern of effects would be seen by chance. Despite hypotheses that these teacher practices were *theorized* to change, it was not at all clear before implementation that changes in teacher practice would actually occur as intended. In fact, all three enhancements affected the teacher practice they emphasized, with moderate to large effect sizes, as shown in Table 5.2. In addition, The Incredible Years also had a small effect on social-emotional instruction. See Box 5.2 for an explanation of effect sizes.

The Incredible Years enhancement increased classroom management by 0.44 standard deviation and social-emotional instruction by 0.30 standard deviation — reflecting statistically significant, moderately sized effects compared with other studies of early childhood interventions,[5] as explained in Box 5.2. In other words, teachers implementing the Incredible Years enhancement were better able to positively manage behavior and provide social-emotional instruction to children compared with teachers in the control group, who had an average score of 3.79 (out of a possible 5) on classroom management. In comparison, teachers in the Incredible Years group had an average score of a 4.09 on classroom management. Although classroom management was already relatively strong in the control classrooms, teachers in the Incredible Years group were still able to strengthen their classroom management practices further. One lead teacher described in detail how she used various Incredible Years behavior management strategies to address two children's different behavioral needs:

> I had two students on behavior plans. One, we used the ignoring with the unwanted behavior, which was all the whining. That whining has vanished. That was wonderful. For the other guy, this fellow was touchy. He was nonchalant. He didn't care about anything. He wasn't going to do his work or anything. With him, we did the extra praising. We would catch him doing something well, we would praise and encourage. Now, he's writing, he doesn't meddle. I owe that to Incredible Years. That was an incredible thing. Before I was thinking, wow I want to help him, but I don't know how.

The PATHS enhancement increased social-emotional instruction by 0.92 standard deviation, which reflects a statistically significant, relatively strong impact. PATHS teachers were better able than their control group counterparts to model the appropriate identification of emotions and use of social problem-solving techniques in challenging social situations. A

[5]Raver et al. (2008, 2011); Bierman et al. (2008a); Morris et al. (2010); Domitrovich et al. (2009).

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Table 5.2

Classroom-Level Ratings and Impacts, by Observation of Teacher Practices

Teachers' Practice	Control Group Rating	Incredible Years (IY) Program Group Rating	Difference (IY vs. Control)	Effect Size[a]	Preschool PATHS Program Group Rating	Difference (PATHS vs. Control)	Effect Size[a]	Tools of the Mind Program Group Rating	Difference (Tools vs. Control)	Effect Size[a]
Classroom management	3.79	4.09	0.30 **	0.44	3.90	0.12	0.17	3.89	0.10	0.15
Social-emotional instruction	1.76	1.98	0.22 *	0.30	2.42	0.66 ***	0.92	1.78	0.02	0.02
Scaffolding	1.44	1.41	-0.03	-0.06	1.48	0.05	0.09	1.78	0.35 ***	0.68
Sample size[b]										
Head Start center	26	26			26			26		
Classroom	77	77			77			76		

SOURCE: MDRC calculations based on observational assessments completed using the Adapted Teaching Style Rating Scale (Adapted TSRS).

NOTES: Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Rounding may cause slight discrepancies in sums and differences.

All models are based on pooled analyses of program group status, controlling for the pretest and blocking variable used to randomly assign 4, 8, or 12 centers to the program group.

Teachers' practice was rated on a scale of 1 (low) to 5 (high), reflecting fidelity of classroom implementation.

[a]Effect size is calculated by dividing the impact of the program (the difference between the means for the program group and the control group) by the standard deviation for the control group.

[b]For all variables in the table, data are available for 100 percent of the sample.

Box 5.2

Understanding and Contextualizing Effect Sizes

Effect sizes provide a way to compare the findings in Head Start CARES with findings from other studies to determine the magnitude of the impacts across different measures. The effect size defines the proportion of a change that takes place following implementation of the intervention — specified by change in the standard deviation, or variation, of the outcome — that can be attributed to the intervention.

Bloom and colleagues suggest that the magnitude of effects in educational interventions can be understood by comparing the size of the effects in similar policy-relevant contexts.[1] Other preschool interventions that have focused on early childhood social-emotional development have been smaller in scale, have had richer resources, and have been more intensive than the enhancements that were implemented in Head Start CARES. For instance, in the Foundations of Learning demonstration and CSRP (formerly known as the Chicago School Readiness Project),[†] highly credentialed and clinically licensed coaches provided a full day of consultation each week for teachers, at times directly intervening one-on-one with children. In the Head Start REDI Program,[‡] another early childhood intervention, teachers received support for both the social-emotional and literacy domains. In these more intensive early childhood interventions, effect sizes on teacher practices of 0.50 were considered moderate, and effect sizes above 0.80 were considered large.[§] In Head Start CARES, although more widely scaled up and less intensive, the first-order effect sizes are still moderate to large, ranging from 0.30 to 0.92.

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[1]Bloom, Hill, Black, and Lipsey (2008).

[†]Raver et al. (2011). CSRP is not associated with The Chicago School®, which is a trademark of The Chicago School of Professional Psychology

[‡]Bierman et al. (2008a).

[§]For instance, in the Foundations of Learning demonstration, for pre-kindergarten classroom management impacts, the teacher practice effect sizes that were measured using the Classroom Assessment Scoring System (CLASS) were moderate (0.46 for teacher sensitivity) to large (−0.90 for negative climate); see Morris et al. (2010). In CSRP, CLASS impacts ranged from 0.52 to 0.89 (Raver et al., 2008). In REDI, CLASS impacts ranged from 0.39 to 0.61 (Domitrovich et al., 2009). These impacts on teacher practice were also sufficiently large to lead to impacts in child outcomes (Morris et al., 2010).

PATHS coach described how she saw teachers change their behavior to model appropriate social interactions:

> The teachers are doing emotion coaching, using the term "friends." At this point it feels very natural for the teachers. The children seem to respond well to what the teachers are doing, but the teachers are the driving force.

In fact, the coach ascribed the changes she saw in the classroom directly to the teachers' ability to change their practice. And it seems that there is room to change such practice: teachers in the PATHS group had an average social-emotional instruction score of 2.42 (out of a possible 5) in comparison with the control group's average score of 1.76. Given the low levels of social-emotional instruction in control group classrooms and the capacity for teachers to change nearly a full standard deviation over the course of a year, this practice seems to be a particularly malleable teacher skill.

Finally, the Tools of the Mind enhancement increased teacher scaffolding by 0.68 standard deviation, also statistically significant and relatively strong. Looking at the control group mean of 1.44, it is clear that teachers generally do some but not much scaffolding of children's play and peer interactions, in comparison with the program group's average score of 1.78. The Tools enhancement helped teachers provide more scaffolding for children as they played, demonstrating that scaffolding is a changeable practice that teachers can learn. A lead teacher using Tools of the Mind described how difficult it was to scaffold children to self-regulate and to resist playing with a toy:

> [I]n pretend play, we used dinosaur figurines to help to tell the story, and it was hard for the children to refrain from playing with them right away. We have to teach the children about their boundaries and limitations, and that was just challenging.

The moderate to large "first order" impacts on directly targeted teacher practices and skills are an encouraging first step in confirming the Head Start CARES theory of change. They also demonstrate that, even with a more geographically dispersed implementation support system than was provided for the efficacy trials of the enhancements,[6] it is possible to change teacher practice at scale. However, it is important to note that a support system was put in place to achieve implementation at this level. As hypothesized, teachers implemented the enhancements with quality, and teacher practices also changed as a result. A future report will examine the next steps in the theory of change — teacher-child interactions and children's outcomes.

Summary

Changing an individual's behavior and day-to-day practices is not an easy task. These promising results demonstrate that, with the necessary support and attention, teachers can implement sometimes complex interventions that lead to change in their classroom practices. The implementation of the Head Start CARES enhancements and the resulting changes in teacher practice represent an important first step in better supporting the development of children's social-emotional competencies.

[6]Domitrovich, Cortes, and Greenberg (2007); Webster-Stratton, Reid, and Hammond (2001); Barnett et al. (2008).

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Chapter 6

Head Start CARES: Findings and Lessons About Implementation and Scale-Up

This chapter summarizes the Head Start CARES findings thus far, as well as practical lessons on the implementation and scale-up of social-emotional enhancements of the type tested in the Head Start CARES demonstration.

Main Findings

Overall, Head Start CARES provided a fair test of three social-emotional interventions, or Head Start program "enhancements," which were intended to enrich and complement existing Head Start practices and curricula: The Incredible Years Teacher Training Program, Preschool PATHS (Promoting Alternative Thinking Strategies), and Tools of the Mind — Play. Teachers were randomly assigned among the enhancements, and all teachers in the study sample had similar characteristics when the study began. Coaching, training, and ongoing monitoring were also designed to be generally the same across the enhancements. The support system that was put in place to bolster expansion, or "scale-up," of the intervention — from the initial small efficacy trials to delivery in 104 Head Start centers — was implemented as intended across all three enhancements.

The enhancements were implemented at or above the threshold level of satisfactory fidelity — meaning that they were implemented as intended — albeit with some variation across all three of them. While The Incredible Years and Preschool PATHS were implemented at moderately high levels of fidelity to the original design, Tools of the Mind was implemented on a weaker, but still satisfactory, level. Because teachers and the support system were similar across the three enhancements, it is likely that the characteristics of the enhancements themselves — and not differences among teachers, coaching, or training — were the reason for varying levels of implementation. Despite this variation, all three enhancements reached or exceeded the threshold for satisfactory fidelity, leading to moderate to strong effects on the hypothesized changes in teacher practices. Despite the magnitude of the effects, the absolute levels of teacher practice for both social-emotional instruction (the emphasis in Preschool PATHS) and scaffolding (the emphasis in Tools of the Mind) were still low, below a rating of 3 on a scale of 1 (low) to 5 (high).

These findings reflect the first of three steps in a theory of change for the Head Start CARES demonstration. The theory of change specifies how the enhancements are hypothesized to change child outcomes at the end of the preschool year. The first step hypothesizes that im-

plementation of the enhancements with fidelity to the original design will strengthen some existing teacher practices and lead to changes in other practices. As seen in this report, the enhancements were indeed implemented with fidelity, and this led to the expected changes in teacher practice.

The next two steps in the theory of change hypothesize that the changes in teacher practice will lead to improved classroom interactions and that those changes in classroom interactions will, in turn, lead to improved child outcomes. This report confirms that the enhancements were implemented with the level of fidelity needed to provide a fair test of whether the next two steps in the theory of change will result. A separate report on Head Start CARES examines the impacts of the three enhancements on teacher-child interactions and children's outcomes.[1]

Lessons Learned

The remainder of this chapter draws on information that was collected during site visits, as well as the multiple data sources used in the Head Start CARES demonstration, and builds on the findings from earlier chapters in this report to present important considerations for the implementation of social-emotional enhancements. Although the demonstration was conducted in Head Start classrooms, the lessons are also relevant to other early childhood programs. Nevertheless, the application of these lessons should be considered in light of the specific context of each particular program.

The effort to implement the Head Start CARES enhancements with fidelity appeared to benefit in particular from (1) a comprehensive professional development model that included training and coaching, (2) ongoing monitoring and technical assistance, (3) well-articulated enhancements, and (4) organizational "buy-in" and support. Each of these factors is discussed below.

Comprehensive Professional Development

Training and coaching were valuable and complementary parts of the Head Start CARES professional development model. Training built a base of understanding from which coaches and teachers could work, while coaches expanded upon and individualized the information they received in the training. Teachers and coaches reported that the professional development facilitated implementation of the enhancements.

[1]Morris et al. (forthcoming).

In order to scale up an enhancement, particular attention should be paid to maintaining the "dosage" — or frequency and duration — of professional development, which can be easily diluted because of challenges in hiring and retaining trainers and coaches, or because of obstacles to teacher attendance at training sessions. Enough trainers should be available to provide multiple training days throughout the year, and teachers should be urged to attend all training sessions. There should also be enough coaches to provide teachers with regular meetings and classroom observations, and time and resources should be set aside to allow teachers to meet with coaches. High-quality professional development requires certified and skilled trainers who understand the enhancements and can train teachers to use them, as well as coaches who are expert in the enhancement and have the skills to help teams of teachers learn. Overall, the professional development model benefited from a professional workforce of high-quality trainers and coaches, and was an important component of the intervention.

Training

- **Teachers implementing social-emotional interventions appear to benefit from *ongoing* training.**

One-time workshops for teachers have been found to be ineffective in supporting implementation of new practices in early childhood settings; research suggests that more intensive training may lead to improved teacher outcomes.[2] In Head Start CARES, training was provided throughout the year. Teachers benefited from learning strategies in the training sessions, practicing them in the classroom, and then returning to training to discuss the implementation process. Training that occurred throughout the year not only enabled teachers to learn new content and build upon content that they had learned previously, but also promoted continuous feedback and support about the enhancement practices from trainers, coaches, and the teachers' peers.

- **Training lead and assistant teachers together can improve implementation and sustainability, but it is resource-intensive and requires careful planning.**

Lead and assistant teachers reported that being trained together strengthened their relationship and helped bolster implementation. In addition, training together seemed to empower assistant teachers to play an active role in implementation. (It was particularly helpful to have joint training for Tools of the Mind, which was time-intensive and required both teachers to actively participate in the implementation process.) However, joint training requires careful planning to address issues such as space, classroom coverage, and additional materials and transportation needs.

[2]Wasik, Mattera, Lloyd, and Boller (2013).

Attendance was aided by holding training on designated "professional development days" when possible and paying teachers to attend training when a professional development day was not available. In addition, training sessions that were conducted off site or required travel were more difficult for teachers to attend than those that were nearby. Therefore, training planners should consider whether the sessions can be held on site, take place during existing professional development days, and include compensation for teachers who attend.

Coaching and Coaches

- **Coaches need to be hired and trained before the school year starts.**

In a few cases in Head Start CARES, coaches did not start the school year and training sequence with the teachers. This made it difficult to complete the coaches' training and to build their rapport with teachers. In fact, coaches should be trained *ahead* of teachers in order to develop their expertise in the content on which they will be coaching. While pre-training for coaches can be logistically challenging and costly, both teachers and coaches believe that it is important.

In order to train coaches on time, they should be hired before the start of the school year. Depending on geography, the number of coaches needed, and the type of skills required, the recruitment and hiring process can be lengthy, so it should be started early. In Head Start CARES, this meant at least three to four months in advance of the start of implementation (and perhaps even earlier if coaches were to be fully trained ahead of time).

- **The coaches should reflect the needs of the particular organization and population that the organization serves.**

Each organization serves a unique population with its own needs. During the hiring process, careful thought should be given to whether the coaches' abilities and credentials match the needs of the students and teachers. For example, in Head Start CARES, the coaches had to speak the language used in the classrooms in order to support implementation.

- **Coaches need supervision and support.**

The coaches in Head Start CARES needed supervision and support in multiple areas, including both the more typical administrative and logistical support as well as supervision to ensure high-quality implementation of the enhancement. Coaches received expert support from the trainers on enhancement content. From the grantees, coaches needed help with building and maintaining teacher rapport and enthusiasm, along with support for logistical matters such as salary payments and performance reviews. Depending on the intervention and process for im-

plementation, supervision can come from only one source or from multiple sources, as in Head Start CARES. Either way, coaches will need support for both content and logistics.

Ongoing Monitoring and Technical Assistance

The collection and monitoring of timely implementation data were crucial to the quick and comprehensive provision of technical assistance. Monitoring implementation in the classrooms allowed developers to work better with trainers and coaches on how to support teacher practice, and allowed the technical assistance team to address any logistical needs. Implementation of social-emotional enhancements, particularly at scale, would benefit from a monitoring system that is similarly able to communicate the data to key stakeholders, including developers, trainers, coaches, and centers.

- **A designated entity is needed to oversee implementation, including an ongoing monitoring effort that uses a flexible management information system (MIS).**

The Head Start CARES MIS was an online database that proved invaluable for understanding and supporting implementation through ongoing data monitoring and the provision of technical assistance. The MIS was important for collecting data, reviewing implementation, disseminating information about implementation to grantees, and supporting coaches and trainers in their work. In Head Start CARES, because of the widespread implementation across multiple locations, MDRC operated the system. However, whether in smaller-scale or more widespread implementation, a designated person or group should collect data, monitor implementation, and plan technical assistance based on the data. In Head Start CARES, dosage and quality were monitored against predetermined standards or thresholds, which were used to flag classrooms that might need support. This monitoring and technical assistance process does not need to be external; it could be provided at the local level by a member of the participating organization. Regardless of how the monitoring is organized, it should trigger immediate assistance to struggling classrooms.

Well-Articulated Enhancements

The three enhancements in the Head Start CARES demonstration each had a different focus and flavor. Implementation of these or other social-emotional enhancements needs to take into account a number of issues that arise from the characteristics of the enhancement itself, as well as how the enhancement fits into the operations and philosophy of the host organization and its teachers.

- **It is important to identify and communicate which components of the enhancement are most critical. Enhancements that specify more con-**

crete components, actions, and lessons may be easier for teachers to implement than less scripted enhancements.

Although the Head Start CARES enhancements were all well documented, teachers still struggled with the sheer amount of prepared manuals, materials, and expectations. Articulating which of the many activities, lessons, and processes were the most critical to implement helped teachers and coaches know where to focus their attention. For example, over the course of the implementation of Preschool PATHS in the Head Start CARES demonstration, PATHS developers articulated even more clearly — that is, beyond the contents of the prepared materials and documentation — their vision for fidelity to the original design, focusing on one PATHS lesson and one extension activity a week.

In addition, the type and quality of the materials mattered. Similar to findings in other studies,[3] activities that were well scripted and had clear and prepared materials were easier to implement than activities that gave teachers a set of directions but no scripted activities. The availability of clear, concrete language and materials to use when practicing a new skill or lesson with children seemed to boost teachers' confidence and make them more receptive to implementing the enhancement.

- **Selection of enhancements should take into account how well they fit with an organization's core curriculum and program philosophy.**

Some grantees and centers had clearer and more established philosophies and objectives than others did. Organizations with a well-defined philosophy that fit well with the enhancements' core components were able to implement the intervention more effectively. Enhancements that aligned with grantees' philosophies appeared to improve buy-in and support for implementation.

However, grantees that implemented the enhancements well, regardless of which enhancement, were very clear about the philosophy of their organization, which helped teachers and coaches to better understand what could be implemented. If any components or activities ran counter to an organization's mission, teachers and coaches could then actively address how to adapt those pieces while still maintaining the intent of the enhancement. For example, many grantees already had curricula or assessments in place that teachers had to complete. Additionally, sometimes the participants believed that the enhancements conflicted with Head Start requirements. Whether the grantee completely removed particular obligations from teachers or stated clearly which obligations should be priorities, the teachers were able to deliver the inter-

[3]Durlak and Dupre (2008); Fixsen et al. (2005).

vention with greater ease and assurance once the grantee explained how to balance its curricula with the Head Start CARES enhancements.

Organizational Capacity and Support

Implementation of the enhancements with fidelity required sustained attention and support from Head Start leadership.

- **Organizational capacity is important for delivering high-quality training and coaching and supporting implementation of the enhancements.**

In order to support implementation, grantees need diverse capacities, including the ability to hire coaches with appropriate skills, hire coaches on time (that is, before the school year begins), send clear messages of support for implementation to teachers and administrators, provide space and time for teachers to participate in professional development, supply the needed resources to classrooms to implement the enhancements, and be continually involved in and supportive of implementation.

- **Grantee administration should provide clear and consistent messages about the importance of the enhancement. Implementation of the enhancement needs to be a high priority.**

The Head Start CARES demonstration revealed that when organizations supported the enhancements, they sent clear messages indicating that implementation should be a priority. In addition to clear and consistent messaging, grantee administrators should work with coaches and teachers to remove barriers to implementation, provide needed resources for the classrooms, and facilitate the training, coaching, and classroom implementation process. Additionally, particular challenges arose when the enhancements were implemented while Head Start programs were also under review, implementing other assessments, or focusing on other initiatives. Although early childhood programs will always have other responsibilities and requirements, making implementation of the enhancement a high priority is crucial to gaining the necessary backing from teachers and administrators.

- **Potential conflicts between the enhancement and additional requirements need to be acknowledged and addressed early in the implementation process.**

It is possible that certain aspects of the enhancement will conflict with existing program requirements, such as assessments, curricula, or rules. For example, in the Head Start CARES demonstration, some grantees were concerned that using food as a reward did not align with Head Start guidelines. For those grantees, acceptable alternative ways to provide

positive reinforcement needed to be found. Developers and trainers worked closely with grantees on such conflicts to ensure that the enhancements were appropriately adapted and still implemented with fidelity.

Summary

The three Head Start CARES program enhancements, in conjunction with ongoing training and coaching for teachers, were implemented at scale with fidelity to the original design at or above the predetermined threshold rating of 3 (satisfactory) out of a possible 5. While fidelity varied by enhancement, with The Incredible Years and Preschool PATHS implemented at a moderately high level of fidelity and Tools of the Mind implemented on a weaker but near-satisfactory level, each enhancement led to the expected changes in its targeted teacher practices. Despite the challenges with implementation, this study demonstrates that, with the appropriate supports, it is possible to implement social-emotional enhancements at scale in Head Start.

Appendix A

Head Start CARES Sample and Selection

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The selection of grantees/delegate agencies (hereafter referred to as "grantees") was a multistep process in which data were first used from the Program Information Report (PIR) database to create a sample of grantees, and then information from the grantees themselves was used to further constrain the sample. Much of the data needed to make selection decisions required direct contact with the grantees.

The sample was selected from the 2006-2007 PIR database of all Head Start grantees, including Early Head Start grantees.[1] From this database, a population of Head Start grantees was defined.[2] Grantees were excluded from the sample if they met any of the following criteria: (1) they were Migrant and Seasonal Head Start grantees;[3] (2) organizations providing non-center-based care (for example, home care); (3) they were located within the U.S. territories, Alaska, and Hawaii; and (4) they were more than 100 miles from a "primary airport."[4]

A number of these exclusions have been imposed by previous national research studies of Head Start, such as the Head Start Family and Children Experience Survey (FACES)[5] and the Head Start Impact Study.[6] Two additional exclusions were used in the Head Start Impact Study, but were not imposed by the Head Start CARES study: (1) grantees operated by tribal organizations, and (2) grantees in saturated communities.[7] The FACES sampling frame has also excluded grantees run by tribal organizations, as well as grantees in Puerto Rico and other territories.

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[1]Early Head Start is a federal program that provides early, continuous, intensive, and comprehensive child development and family support services to low-income infants and toddlers and their families, and to pregnant women and their families.

[2]American Indian grantees were included.

[3]Migrant and Seasonal Head Start (MSHS) programs, which specifically respond to the needs of migrant farm worker families, were excluded because of the unique characteristics of the programs (many operating for shorter school years and at different times of the year) and the families they serve. MSHS programs were included in a parallel study. The MSHS CARES study is a theory-based study to explore how a social-emotional intervention included in the Head Start CARES study may best serve the needs of MSHS programs and classrooms. Implementation findings of the study will be published in 2014.

[4]The research team wanted to ensure that travel time and distance were reasonable from airports that supply sufficient service, both for training and/or site visits to the grantees, and for teachers from the selected grantees to travel to chosen training hubs. A primary airport is one that has more than 10,000 passenger boardings per year.

[5]Moiduddin et al. (2012).

[6]In the past, the FACES sampling frame also excluded Early Head Start and migrant grantees. The Head Start Impact Study excluded migrant grantees, grantees in U.S. territories except for Puerto Rico, grantees that were extremely new to the program (in operation for approximately less than two years), grantees that were substantially out of compliance with Head Start Performance Standards, and grantees that were underenrolled.

[7]The Head Start Impact Study stratified its sample based on how saturated the early childhood education market was in a given area. In other words, on the basis of existing "non-Head Start comprehensive services" (as a function of the availability of state-funded pre-kindergarten programs and related services) — a very important variable for that study because children were randomly assigned, and the availability of non-Head Start comprehensive services would affect the experiences of control group children who were not selected for treatment. Because the Head Start CARES demonstration randomly assigned Head Start centers within

(continued)

Next, all grantees in the sampling frame were stratified into 24 strata according to a combination of the following factors: (1) the region of the country in which they were located (Northeast, South, Midwest/Plains, and West); (2) the racial/ethnic composition of their child enrollment (predominantly African-American, predominantly Hispanic, or other);[8] and (3) the "urbanicity" of their location (metropolitan or nonmetropolitan).[9] Information on the population of children served within each of these 24 strata was used to determine the number of grantees to target for recruitment within each stratum. For example, 35,665 children, or 4.6 percent of all enrolled children, were located in grantees in the Northeast, in the third race/ethnicity concentration category of "Other," and in metropolitan areas. Candidate grantees were then randomly sampled from within each stratum. The sampling was weighted based on child enrollment such that larger grantees were more heavily weighted.

Before screening, grantees were excluded if (1) they had been in operation for less than two years; or (2) they were not in compliance with Head Start Program Performance Standards.[10] Finally, recruitment teams screened selected grantees from within each stratum. Additional exclusion criteria were drawn from the contact that recruitment teams had with grantees. Grantees were excluded from the sample if (1) they had fewer than four centers, or (2) they were already systematically implementing a social-emotional curriculum or participating in another major research initiative. In addition, classrooms were deemed eligible if they had only four-year-olds or mixed ages;[11] centers needed to have two or more of these eligible classrooms to participate in the study. Once the recruitment team had spoken with grantees and collected information about the exclusion criteria, the selection of grantees was prioritized and narrowed for further recruitment based on screening and randomization criteria. In addition, grantees in regional hubs were prioritized to reduce training and data collection costs.

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grantees to treatment or control group status (thus, all children in the treatment and control groups were in a Head Start program), it is not necessary for Head Start CARES to stratify based on the availability of alternative services.

[8]Racial/ethnic composition was defined by child enrollment in the grantee, with one of three possible definitions: grantees serving predominantly Hispanic children, grantees serving predominantly African-American children, and grantees serving a mix of children with various racial/ethnic backgrounds.

[9]Urbanicity is based on the Beale Code, a widely used geographic code developed by the U.S. Department of Agriculture (2004). Codes are calculated by examining the size of a county and its proximity to a metropolitan area. See www.ers.usda.gov/briefing/rurality/RuralUrbCon for more detailed information about this coding system.

[10]New programs or programs that were not in compliance with Head Start Program Performance Standards were excluded from sampling because they were considered at higher risk for closing.

[11]The main focus of the Head Start CARES demonstration was on four-year-old children because most of the evidence base for the selected enhancements focused on children who were four years of age. Classrooms that had all three-year-olds or had a majority of three-year-olds would not provide a sufficient number of four-year-olds for the sample size needed. A separate report will focus on a more limited and exploratory set of questions about the effect of social-emotional interventions on three-year-olds.

Appendix B

The Management Information System

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In the Head Start CARES demonstration, an online database known as the management information system (MIS) was used to collect systematic implementation data and to help a centralized technical assistance team to monitor implementation in real time. The MIS allowed the technical assistance team to monitor implementation of coaching, coach supervision, and classroom implementation of the enhancements, and to intervene with additional support when needed. The technical assistance team used MIS data to generate monthly reports, which they used to assess whether classrooms and coaches were meeting pre-specified benchmarks. MIS data were also used as implementation research data.

The MIS collected data from coaches and trainers using seven different instruments. Coach data sources included (1) a one-time summer checklist documenting steps taken before the start of the school year to work with teachers, (2) coach weekly logs documenting their classroom observations and contact with teachers, (3) coach monthly fidelity logs documenting fidelity to the enhancement as delivered in the classroom, and (4) one-time coach end-of-year reflections documenting each coach's acceptance of the enhancement and challenges encountered throughout the year.[1] Trainer data sources included (1) trainer supervision logs documenting contact with coaches, (2) trainer fidelity logs assessing fidelity in the classrooms visited, and (3) trainer logs of coach quality that documented the trainer's assessment of coach effectiveness.[2]

Monitoring Log Completion and Data

"Rolling logs" were logs that were submitted on a regular basis (such as the coach weekly log, the coach monthly fidelity log, or the trainer supervision log). The forms were processed as they were completed, and reports based on these data were shared with the technical assistance team on a regular basis. For example, as previously mentioned, a technical assistance threshold was created for the coach monthly fidelity log to indicate satisfactory implementation. On a scale of 1 (low) to 5 (high), classrooms with a monthly coach rating above a 3, meaning that teachers were implementing the enhancement occasionally but not consistently, were considered to have reached the threshold for satisfactory implementation. Classrooms that did not reach or dropped below the threshold received additional monitoring and technical assistance. These monitoring efforts focused on distributing information to the various key parties involved in Head Start CARES as it was collected.

[1]Coach end-of-year reflections and the summer checklist were completed only for Cohort Two, at the end of their implementation year.

[2]For a full description of all the data sources used in Head Start CARES implementation, see Appendix C.

Examples of MIS Data Sources

In order to provide a sense of the MIS, this appendix includes items and instructions from the coach weekly log and two sections of the coach monthly fidelity log data sources. Much of the time, only these items were provided in the MIS, and the fuller set of documentation and instructions were provided to coaches and trainers at the kick-off meeting that was held at the beginning of the school year.

Coach Weekly Log

Detailed Explanations of Coach Weekly Log Questions

1. **How much time did you spend meeting with your teachers since your last coaching session, including the time spent in this week's coaching session? (Select minutes and hours.)**
   This question asks you to record how much time you met with your teachers since the last coaching session. Usually, this will only include the time you spend in your weekly coaching session, debriefing, solving problems, goal-setting, or discussing other issues relevant to coaching or teaching as part of Head Start CARES. However, sometimes a coach will meet with a teaching pair or individual teacher for an additional amount of time. If you do, please also include this time in your total. In general, we recommend that you meet with each teaching pair for at least 30 minutes each week, although you may spend more time in classrooms that need additional assistance.

2. **How much time did you spend in the classroom doing classroom coaching, modeling, or observing since your last coaching session? (Select minutes and hours.)**
   This question asks you to record how much time you spent in the classroom, doing classroom observing or modeling, since the last coaching session. In general, you should be spending 1.5 hours in each classroom each week. This time should include some active modeling and demonstration for teacher and children in the activities of the program enhancement, as well as observation.

3. **How much time since your last coaching session did you spend preparing for your observation or this week's coaching sessions? (Select minutes and hours.)**
   This question asks you to record how much time you spent preparing for your observation or weekly coaching session, including time spent getting materials ready, reviewing teachers' progress, and completing and submitting weekly and monthly logs. In general, you should be spending one hour per week per classroom preparing for your coaching sessions. Weeks that include the preparation and submission of coach monthly fidelity logs may require more time, while other weeks may require less of a time commitment.

4. **According to the teachers, since your last coaching session, to what extent were they able to use program strategies, lessons, activities or concepts?**
   During your coaching session, we ask that you discuss with your teachers the extent to which they were able to use program strategies, lessons, activities, or concepts.
   - If they say they haven't used them at all, *select "1 = Not at all.*"
   - If they say they have used them a very small amount (for example, one activity for a few days, or a few activities on only one day), *select "2."*

- If they say they are using the majority of the activities they have been asked to do, but not all of them, or not consistently, *select "3."*
  Finally, if they say they are using nearly all of the program activities nearly or every day, *select "4 = A lot."*

5. What coaching strategies did you use with these teachers in this coaching session? (Check all that apply.)

For this question, we would like to know what you have covered in your coaching session with your teachers. Please check all that occurred in your coaching session.

- ☐ 1 – Answered question about the program
- ☐ 2 – Demonstrated strategies or techniques
- ☐ 3 – Role-played strategies
- ☐ 4 – Showed and discussed video examples
- ☐ 5 – Provided feedback using notes or data from observation
- ☐ 6 – Problem-solved: individual child
- ☐ 7 – Problem-solved: classroom situation
- ☐ 8 – Problem-solved: center situation
- ☐ 9 – Reflective discussion
- ☐ 10 – Goal setting
- ☐ 11 – Planned for what the teacher is going to do in the classroom
- ☐ 12 – Set a date for the next observation and coaching session

6. Overall, how productive was this coaching session?

This question asks about the overall productiveness of the session, in terms of how much was accomplished in the session, whether you feel the teachers were receptive to what was discussed, and whether what you discussed will help the teachers in the coming week. If:

- Nothing was accomplished, in terms of discussing strategies or techniques, goal-setting, problem-solving, and planning for the coming week, and the teachers were unresponsive to the session, *select "1 = Very Unproductive."*
- Very little was accomplished, in terms of discussing strategies or techniques, goal-setting, problem-solving, and planning for the coming week, and the teachers were mostly unresponsive to the session, *select "2."*

- Only a little was accomplished, in terms of discussing strategies or techniques, goal-setting, problem-solving, and planning for the coming week, and the teachers were only partially engaged, *select "3."*
- You were able to discuss appropriate strategies or techniques, set goals, problem solve, and plan for the coming week, and the teachers were responsive to the session, *select "4."*
- The session went exceptionally well, and you and the teachers worked together in an energetic and productive manner, discussing appropriate strategies or techniques, setting goals, problem solving, and planning for the coming week, and the teachers were very responsive to the session, select *"5 = Very Productive."*

Coach Monthly Fidelity Report: General Fidelity Items[3]

Modeling and Generalization of the [Specific Enhancement]

1. It is clear when you enter this classroom and look around it is a well-managed classroom, characterized by the [specific enhancement] strategies taught in [specific enhancement].
   - If the classroom has no tangible signs of the [specific enhancement] strategies, *select "1 = strongly disagree."*
   - If the classroom has only one tangible sign of [specific enhancement] strategies, *select "2."*
   - If the classroom has a few tangible signs of [specific enhancement] strategies, *select "3."*
   - If the classroom has many tangible signs of the [specific enhancement] strategies, *select "4."*
   - If the classroom is an "exemplary" [specific enhancement] classroom, that is, there are numerous tangible signs of [specific enhancement] strategies, *select "5 = strongly agree."*

2. The teachers have taken extra steps to extend the [specific enhancement] strategies and concepts into other parts of the Head Start program by designing special activities or adapting standard activities to be consistent with [specific enhancement] themes.
   - If the teachers are actively opposed to taking extra steps to extend the [specific enhancement] strategies and concepts into other parts of their classroom activities and schedule, *select "1 = strongly disagree."*
   - If the teachers have not taken steps to extend the [specific enhancement] strategies and concepts into other parts of their classroom activities and schedule, *select "2."*
   - If the teachers have attempted to extend the [specific enhancement] strategies and concepts, but have mostly not been successful, *select "3."*
   - If the teachers have taken extra steps to extend the [specific enhancement] strategies and concepts into other parts of their classroom activities and schedule and have been successful, *select "4."*
   - If the teachers have gone "above and beyond," successfully integrating [specific enhancement] strategies and concepts into numerous parts of their classroom activities and schedule, select *"5 = strongly agree."*

[3]These items are presented generally for all three enhancements. Some individual items may have included enhancement-specific examples, such as an Incredible Years, Preschool PATHS, or Tools of the Mind strategy. These enhancement-specific examples are not included here.

3. The teachers make active use of [specific enhancement] strategies in an integrated fashion throughout the day, not just when problems arise.
    - If you never observe teachers making use of [specific enhancement] strategies, select *"1 = strongly disagree."*
    - If you only observe teachers using [specific enhancement] strategies once or twice a day, *select "2."*
    - If you only observe teachers using [specific enhancement] strategies when problems arise, *select "3."*
    - If you observe teachers using [specific enhancement] strategies throughout most of the day, and not only when problems arise, *select "4."*
    - If teachers make frequent use of [specific enhancement] strategies nearly all day, select *"5 = strongly agree."*

4. The teachers use [specific enhancement] as part of their strategies for managing conflicts, as part of classroom procedures, and to help build positive relationships between the children.
    - If teachers' never use [specific enhancement] strategies for managing conflicts, as part of classroom procedures, or to help build positive relationships between the children, *select "1 = strongly disagree."*
    - If the teachers rarely use [specific enhancement] strategies for managing conflicts, as part of classroom procedures, or to help build positive relationships between the children, *select "2."*
    - If the teachers occasionally use [specific enhancement] strategies for managing conflicts, as part of classroom procedures, or to help build positive relationships between the children, but not consistently, *select "3."*
    - If the teachers often use [specific enhancement] strategies for managing conflicts, as part of classroom procedures, or to help build positive relationships between the children, *select "4."*
    - If the teachers are exceptional in their ability to use [specific enhancement] strategies for managing conflicts, as part of classroom procedures, or to help build positive relationships between the children, select *"5 = strongly agree."*

5. The teachers model and actively promote [specific enhancement] strategies.
    - If teachers' behaviors are inconsistent with, or undermine proper use of [specific enhancement] strategies, select *"1 = strongly disagree."*
    - If the teachers rarely model proper use of [specific enhancement] strategies, *select "2."*
    - If the teachers occasionally model proper use of [specific enhancement] strategies, but not consistently, *select "3."*

- If the teachers often model and actively promote [specific enhancement] strategies, *select "4."*
- If the teachers are exceptional in their ability to model and actively promote [specific enhancement] strategies, *select "5 = strongly agree."*

Fidelity of Teaching and Supporting Children in [Specific Enhancement]

1. The teachers are prepared for [specific enhancement] activities and seem familiar with what to do.
   - If the teachers are never prepared or familiar with [specific enhancement] activities, *select "1 = strongly disagree."*
   - If the teachers only rarely are prepared or familiar with [specific enhancement] activities, *select "2."*
   - If the teachers occasionally are prepared or familiar with [specific enhancement] activities, but not consistently, *select "3."*
   - If the teachers are usually prepared or familiar with [specific enhancement] activities, *select "4."*
   - If the teachers are exceptional in their preparation or familiarity with [specific enhancement] activities, *select "5 = strongly agree."*

2. The teachers use many of the [specific enhancement] strategies, and modifications or additions are consistent with the [specific enhancement] goals and objectives.
   - If the teachers never use [specific enhancement] strategies, *select "1 = strongly disagree."*
   - If the teachers rarely model or promote [specific enhancement] strategies, and any modifications or additions are inconsistent with [specific enhancement] goals and objectives, *select "2."*
   - If the teachers occasionally model or promote [specific enhancement] strategies, but not consistently, and any modifications are usually inconsistent with [specific enhancement] goals and objectives, *select "3."*
   - If the teachers often model and actively promote [specific enhancement] strategies, and any modifications are usually consistent with [specific enhancement] goals and objectives, *select "4."*
   - If the teachers are exceptional in their ability to model and actively promote [specific enhancement], and modifications are always consistent with [specific enhancement] goals and objectives, *select "5 = strongly disagree."*

3. Material is presented in an engaging manner. The teachers are positive, energetic and enthusiastic about [specific enhancement]. There is flexibility in the presentation and the teachers appear comfortable with [specific enhancement].
    - If the teachers either never do [specific enhancement] activities, or are very hostile towards [specific enhancement], never presenting it an engaging manner and are always very unenthusiastic about [specific enhancement], *select "1 = strongly disagree."*
    - If the teachers are rarely positive, energetic, or enthusiastic about [specific enhancement], and often appear uncomfortable with [specific enhancement], *select "2."*
    - If the teachers occasionally present [specific enhancement] in an engaging manner, but not consistently, *select "3."*
    - If the teachers usually present the material in an engaging manner, and are positive, energetic, and enthusiastic about [specific enhancement], *select "4."*
    - If the teachers are exceptional in their ability to present materials, and in their energy and enthusiasm about [specific enhancement], *select "5 = strongly agree."*

4. The teachers are patient and sensitive to the skill level of the children and adapt their style of presentation and pacing to match the children.
    - If the teachers are never patient or sensitive to the skill level of the children, *select "1 = strongly disagree."*
    - If the teachers are rarely patient or sensitive to the skill level of the children, *select "2."*
    - If the teachers are occasionally patient or sensitive to the skill level of the children, but not consistently, *select "3."*
    - If the teachers are usually patient and sensitive to the skill level of the children, *select "4."*
    - If the teachers are exceptional in their ability to adapt their style of presentation to match the skill level of the children, *select "5 = strongly agree."*

5. The children are responsive to [specific enhancement] strategies; the [specific enhancement] strategies are effective in this classroom.
    - If teachers are not using any [specific enhancement] strategies, *select "1 = strongly disagree."*
    - If most of the children are rarely responsive to [specific enhancement] strategies, and the [specific enhancement] strategies are not being effective, *select "2."*
    - If most of the children are occasionally responsive to [specific enhancement] strategies, but not consistently, *select "3."*
    - If most of the children are responsive to [specific enhancement] strategies, and they are effective in the classroom, *select "4."*
    - If most of the children are very responsive to [specific enhancement] strategies, and the strategies are very effective in the classroom, *select "5 = strongly agree."*

Coach Monthly Fidelity Report: Enhancement-Specific Fidelity Items

Fidelity of Programmatic Activities (Lead Teacher): Incredible Years (IY)

1. Building relationships with students (warm, fun, positive greetings, one-on-one time, eye level, special interest activities, compliment circle time).
   - If there is no evidence that the teacher is making efforts to build personal relationships with students, or its use is flawed, *select "1 = strongly disagree."*
   - If the teacher only engages in relationship building activities a few times a week, *select "2."*
   - If the teacher engages in relationship building activities a few times a day, *select "3."*
   - If the teacher consistently works on relationship building in interactions with students throughout most of the day, *select "4."*
   - If the teacher is exemplary in his or her relationship-building interactions with students, *select "5 = strongly agree."*

2. Use of proactive teaching strategies (clear classroom rules, "show me five" poster and cue cards, clear commands, predictable transitions, when-then statements, posted schedule).

3. Building relationships with parents (telephone calls home, weekly newsletters, IY teacher-parent activities sent home and recommended for each workshop, parent input into behavior plans, invites parents to classroom).

4. Behavior plans (implement behavior plans and specific strategies).

5. Praise and encouragement (labeled, specific praise, proximal praise, praise "positive opposites," praise to other teachers).

6. Academic and persistence coaching (avoid use of questions, criticisms and commands, describe academic concepts and child's state and efforts).

7. Social coaching (target social behaviors to increase, model social skills in one-on-one interactions with students, label social behaviors when they occur).

8. Emotion and self-regulation coaching (target positive opposite emotions, build emotional literacy language, teach calm-down practices).

9. Motivating children with incentives (for example, spontaneous surprises, celebrations, announcements, cheers, positive notes home, special privileges for rewards, sticker systems).

10. Ignoring, distractions, and redirects (for example, start with least intrusive, follow behavior plan, target behaviors to ignore, proximity praise, create opportunities to coach and practice, distractions, praise positive opposites, teach other children to ignore, redirect, calming self-talk).

11. Consequences and time out to calm down (teach children time-out to calm down, track use of time-out and revisit behavior plan, use prompts and reminders, use "if-then" statements, use time out only for aggressive behavior, provide opportunities to practice desired behavior, calm-down self-talk).

12. Teaching problem-solving skills (teach problem solving steps in circle time and implement when conflict occurs).

13. Supporting and praising co-teachers/other adults and using positive coping strategies (create supportive climate with other adults in classroom, use self-praise, positive self-talk, and personal time outs when needed, incorporate self-care goals).

Fidelity of Programmatic Activities (Lead Teacher): Preschool PATHS

1. PATHS lessons
    - If there is no evidence that the teacher is implementing a regular PATHS lesson or its use is significantly flawed (for example, unprepared, digression from lesson content or poor understanding of concepts, inappropriate pacing, failure to engage students or assess comprehension during lesson), *select "1 = strongly disagree."*
    - If PATHS lessons are delivered infrequently or if there are problems with lesson delivery (for example, unprepared, digression from lesson content or poor understanding of concepts, inappropriate pacing, failure to engage students or assess comprehension during lesson), *select "2."*
    - If PATHS lessons are implemented regularly but there are some problems (for example, unprepared, digression from lesson content or poor understanding of concepts, inappropriate pacing, failure to engage students or assess comprehension during lesson), *select "3."*
    - If the teacher implements the PATHS lesson weekly and the majority of the time, the lessons are delivered well (for example, prepared, lesson content covered, understanding of concepts, appropriate pacing, engages students and assesses student comprehension during lesson), *select "4."*
    - If the teacher implements a PATHS lesson weekly, and is exemplary in his or her delivery (for example, prepared, lesson content covered, understanding of concepts, appropriate pacing, engages students and assesses student comprehension during lesson), *select "5 = strongly agree."*

2. PATHS Kid of the Day (PKD).

3. Building a caring classroom: Classroom structure.

4. Building a caring classroom: Teacher-student relationships.

5. Nurturing emotional understanding: Emotional modeling.

6. Nurturing emotional understanding: Emotion expression and support.

7. Fostering self-regulation: Turtle Technique.

8. Fostering self-regulation: FREE strategies.

9. Supporting problem solving.

10. Discipline.

Fidelity of Programmatic Activities (Lead Teacher): Tools of the Mind

1. Play planning and scaffolded writing.
    - If either play planning is not being implemented at all or so infrequently as to have little to no impact on the students (once a week), *select "1 = strongly disagree."*
    - If play planning is being implemented on a regular basis (every day with most to all of the children), but the teacher is still struggling with the organization and flow of the activity (for example, the activity may take too long or children may be allowed to scribble and then leave the table), *select "2."*
    - If play planning is implemented on a regular basis, and the teacher has a firm grasp on the structure and flow of the activity (wheel is ready, role cards are used, plans are reviewed from the day before) although there may be minor errors made (for example, scaffolding around the table rather than going to the student who needs the most assistance first) and the teacher still struggles with scaffolding within the ZPD (zone of proximal development) and tends to provide similar instruction to all (for example, either under or overscaffolding by working on picture or lines with everyone even though some students might be ready for more advanced skills), *select "3."*
    - If play planning is implemented on a regular basis and the structure and flow of the activity has been completely internalized by the teacher, and the teacher is able to recognize different ZPDs of students and adjust her instruction accordingly some to most of the time, *select "4."*
    - If the teacher is fluent in play planning, moving with ease from student to student, and a range of scaffolding can be seen during the activity with students working at all levels (for example, some focused on "making a plan" and drawing themselves while others might be writing ending sounds in words); and the teacher encourages children to talk and work together (that is, buddy planning) and potential conflicts are worked out at the table before children leave to play, *select "5 = strongly agree."*

2. Make-believe play (MBP).

3. Make-believe play practice (MBPP).

4. Attention-gathering activities (for example, fingerplays, make-believe transitions).

5. Graphics practice/buddy reading.

6. Overall schedule of the day (short group times, transitions used, no long waiting times, percentage of day filled with Tools activities).

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Appendix C

Head Start CARES Data Sources for Implementation Report

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The implementation data sources used in this report are listed below, by the reporter of the data.

Data from Trainers

Trainer Fidelity Logs (MIS)

Trainers visited classrooms two to three times a year: once at the beginning of the school year, and once in the second half of the school year (January through May). After those visits, trainers used the management information system (MIS) to rate the teaching team on modeling and generalization, fidelity of teaching and supporting children, and fidelity of programmatic activities.

Global Measure of Fidelity

Trainers reported on "modeling and generalization" in the classroom and the "fidelity of teaching and supporting children in [specific enhancement]." The 10 items in the two combined sections were answered using a 1 (have considerable difficulty/strongly disagree) to 5 (highly skilled/strongly agree) scale.[1] The 10 items were averaged together at each time point. Internal consistency was high (Cronbach's $\alpha_{trainers} = 0.97$).

Average fidelity score. For each classroom, trainer fidelity ratings were averaged across the year to create an average trainer rating. The trainer ratings were averaged together with coach average ratings (described below) to obtain an overall fidelity score for each classroom.

Trainer Logs of Coach Quality (MIS)

After their visits, trainers also used the MIS to rate coach quality. Trainers rated the coaches' skills, knowledge of the enhancement, and ability to support the teachers. Trainers responded to 10 questions on a scale of 1 (strongly disagree) to 5 (strongly agree). Questions address whether, for example, "the coach ably demonstrates techniques or strategies of program" and "the coach motivates his or her teachers." The items were averaged at each time point and then across time points; internal consistency was high (Cronbach's $\alpha = 0.96$).

Trainer Supervision Logs (MIS)

Trainers and coaches had a schedule of supervisory phone calls and in-person visits throughout the year, which varied by enhancement. Each time that they were in contact with

[1] In Cohort One (program year 2009 to 2010), coaches and trainers answered questions on a scale of 1 (have considerable difficulty) to 5 (highly skilled), while in Cohort Two (program year 2010 to 2011), coaches and trainers answered questions on a scale of 1 (strongly disagree) to 5 (strongly agree). The items were worded slightly differently in each cohort to match the wording of the responses.

coaches, trainers used the MIS to report on the type and duration of their communication with coaches, and the overall content of the interactions.

Trainer Interviews

In spring of the implementation year, trainers were interviewed on the phone by the research team (MDRC and MEF Associates) about each grantee with which they worked. Trainers reflected on how implementation was handled by the teachers and in the classrooms that year, their relationship and sessions with the coach, and their interactions with the developers of the intervention. The interviews featured semi-structured questions that were created to be parallel across interview respondents (for example, trainers, coaches, and teachers), with specific subsets of questions selected for each type of interview. The parallel themes were background information, training, program model implementation, the trainer-coach relationship, coaching sessions, the teacher dyad, informal peer coaching, organizational setting, trainer-coach sessions, sustainability, the developer-trainer relationship, and summary reflections. The interview analysis process is detailed under Additional Information on Qualitative Data Analysis, at the end of this appendix.

Data from Coaches

Coach Demographics Survey

Coaches responded to 15 questions that asked about basic demographics such as their age, race, ethnicity, education, and relevant background.

Coach Monthly Fidelity Logs (MIS)

At the end of each month, coaches used the MIS to enter reflections on their assigned teachers and classrooms. They reported on the teachers' response to enhancement-specific coaching, consultation, and implementation; modeling and generalization of enhancement-specific practices throughout the whole school day; and fidelity of teaching and supporting children. Appendix B describes the items in the two sections about modeling and generalization and fidelity of classroom implementation. They also reported on the teachers' fidelity of classroom implementation, as shown in Appendix B. Finally, they scored the organizational support they received and the coteacher relationship.

Global Measure of Fidelity

All global fidelity variables (described below) were created using sections of the logs in which coaches reported on "modeling and generalization" in the classroom and the "fidelity of teaching and supporting children in [specific enhancement]." As with the trainer global measure

of fidelity, the 10 items in the two combined sections were answered using the scale of 1 (have considerable difficulty/strongly disagree) to 5 (highly skilled/strongly agree),[2] as described in Appendix B. The 10 items were averaged together at each time point. Internal consistency was high (Cronbach's $\alpha_{coaches} = 0.97$).

Average fidelity score. For each classroom, coach monthly fidelity average scores were averaged across the year to create an average coach rating of fidelity. The coach and trainer ratings were averaged together to obtain an overall fidelity score for each classroom.

Start-of-year score. Each classroom's September fidelity average from the coach monthly fidelity log was used as the start-of-year score. If the September coach monthly fidelity log was not submitted, the October fidelity average was used instead. If the October coach monthly fidelity log was not submitted for a classroom, the start-of-year score was considered missing.

End-of-year score. Each classroom's April fidelity average from the coach monthly fidelity log was used as the end-of-year score. If the April coach monthly fidelity log was not submitted, the March fidelity average was used instead. If the March coach monthly fidelity log was not submitted for a classroom, the end-of-year score was considered missing.

Change score. The change score for each classroom was calculated as the difference between the end-of-year score and start-of-year score, as described above.

Enhancement-Specific Measure of Fidelity

Fidelity to the core components of each enhancement by lead and assistant teachers was assessed through enhancement-specific questions about teachers' implementation of developer-identified core components of the three enhancements. The section consisted of between 6 and 13 items, depending on the enhancement; all were answered using the scale of 1 (have considerable difficulty/strongly disagree) to 5 (highly skilled/strongly agree) that is described in Appendix B. Items varied slightly across cohorts, and were matched where feasible.[3] Responses to each question were averaged across the year.[4]

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[2]In Cohort One (program year 2009 to 2010), coaches and trainers answered questions on a scale of 1 (have considerable difficulty) to 5 (highly skilled), while in Cohort Two (program year 2010 to 2011), coaches and trainers answered questions on a scale of 1 (strongly disagree) to 5 (strongly agree). The items were worded slightly differently in each cohort to match the wording of the responses.

[3]In Cohort One (program year 2009 to 2010), coaches and trainers reported on the teachers in the classroom, providing a single score for each classroom. In Cohort Two (program year 2010 to 2011), coaches and trainers gave one score to the lead teacher and one score to the assistant teacher. The lead and assistant teacher data from Cohort Two were averaged to match with the Cohort One data. The number of items depended on the enhancement and the cohort. Only those items that were similar across cohorts were used. In some cases, two items from one cohort were averaged to match up with a single item in the other cohort.

[4]In Cohort Two, the questions were first averaged across lead and assistant teachers each month.

Coach Weekly Logs (MIS)

At the end of each week, coaches reported through the MIS on their weekly meeting and observation of teachers, as shown in Appendix B. The coach weekly log consisted of six questions in total, which covered (1) time spent with the teacher since the last coach session; (2) time spent in the classroom coaching, modeling, or observing since the last coaching session; (3) time spent preparing for coaching; (4) extent of teachers' use of enhancement practices, lessons, and activities; (5) strategies that coaches used during their meeting with teachers (such as answering questions about the program strategies, role playing, setting goals, and so forth); and (6) how productive the meeting was. Frequency and dosage data were averaged across enhancement and across month to determine the overall dosage of coaching, the dosage for each enhancement, and the dosage for each month.

Coach End-of-Year Reflections

At the end of the year, coaches in Cohort Two reflected on their experience participating in Head Start CARES. They reported on their practices and beliefs about coaching and supervision, as well as the facilitators of and challenges to successful coaching. The coach end-of-year reflections consisted of five sections, which focused on background information, social-emotional beliefs, coaches' coaching experience in Head Start CARES, coaches' experience with supervisors and mentors, and final thoughts. Coaches reflected on items such as, "In your opinion, how effectively does your enhancement help teachers manage their classrooms?" and "In general, how much time do you think you need to spend each week on ONE classroom?" Coaches also reflected on, for instance, "What characteristics or skills are most important for coaches to have in order to best support classroom implementation?"

Coach Training Feedback Forms

After the first and last training of each enhancement, coaches were asked to rate the training. These feedback forms captured participant reactions to training content, methods, dynamics/interactions, and participant perceptions of the overall quality of each training workshop. The training feedback form asked coaches to respond to 11 questions that were rated on a scale of 1 (strongly disagree) to 5 (strongly agree). Questions sought to determine whether, for example, "The material was presented in an accessible and easy-to-understand manner" and "I would recommend this workshop to teachers."[5]

[5]"Workshop" in this appendix refers to a training session.

Coach Calls with the Technical Assistance Team

For Cohort Two, the technical assistance team facilitated coach calls, which allowed coaches around the country from the same enhancement to talk about their experiences in the classroom. Two calls per enhancement were scheduled for each time point, with between five and eight coaches participating in each call, along with trainers when possible. Coaches were asked to reflect on various aspects of coaching, such as building relationships, coaching strategies, and lead and assistant teacher relationships. Coaches also used the call as an opportunity to raise challenges and share successful strategies for overcoming those challenges. The technical assistance team took notes during the calls, which were analyzed to help identify qualitative themes.

Coach Interviews

All of the 52 Head Start CARES coaches were interviewed by the research team during the spring of the implementation year, and all 52 interviews were coded. The majority of coach interviews were in person, although some took place on the phone when the coach was not available at the time of the site visit. Coaches reported on their impressions of the enhancement, training, program model implementation, the trainer-coach relationship, coaching sessions, the teacher dyad (that is, the lead and assistant teacher pairs), informal peer coaching, and the organizational setting, as well as trainer-coach sessions. As with trainer interviews, the interviews featured semistructured questions that were created to be parallel across respondents, with specific subsets of questions designed for each type of interview. The parallel themes were background information, impressions of the enhancement, training, program model implementation, the trainer-coach relationship, coaching sessions, the teacher dyad, informal peer coaching, organizational setting, trainer-coach sessions, sustainability, and summary reflections. The interview analysis process is detailed under Additional Information on Qualitative Analysis at the end of this appendix.

Data from Teachers and Classrooms

Data from Teachers

Lead Teacher Self-Survey (Baseline and Follow-Up)

The lead teacher self-survey was collected in the spring of the year before classrooms implemented the Head Start CARES enhancements and in the spring of the implementation year. The lead teacher self-survey (baseline) included nine sections: (1) lead teachers' demographics (including age, race, education, other credentialing, and financial and family situation); (2) information about the classroom; (3) emotion coaching (adapted Emotion-Related

Parenting Styles Self-Test, short version, emotion coaching subscale);[6] (4) burnout (Maslach Burnout Inventory emotional exhaustion subscale, known as MBI);[7] (5) psychological distress (K-6 Kessler Psychological Distress Scale);[8] (6) adaptability to change (Texas Christian University Organizational Readiness to Change);[9] (7) views on social-emotional development; (8) previous training and professional development; and (9) the lead-assistant teacher relationship. The lead teacher self-survey (follow-up) asked program teachers to report on implementation-specific items. The follow-up survey included four additional sections: (10) implementation of social-emotional practices, (11) the coach-teacher relationship, (12) motivation to implement, and (13) teachers' relationship with their supervisor.

In the time between baseline in the spring and the start of Head Start CARES implementation in the fall, some teachers left the study. The research team attempted to match the teachers who answered the survey at baseline to the teachers who implemented the enhancement in the fall to understand how much turnover occurred and to make determinations about missing data.

Key scales covered in the lead teacher self-survey are detailed below.

Emotion coaching. Emotion coaching was defined as teachers' ability to positively support children's navigation of negative or difficult emotions. The emotion coaching subscale comprises four items from the short version of the Emotion-Related Parenting Styles Self-Test.[10] Lead teachers responded to questions on the lead teacher self-survey such as, "When a child in my classroom is sad, we sit down to talk over the sadness," and "When a child in my classroom gets angry, it is important to help the child find out what caused his/her anger." A factor analysis was conducted on the scale as it appeared in Cohort One. A score was created by averaging the four items; "When my child gets angry, it's time to solve a problem," was dropped from the subscale. Lead teachers in Head Start CARES rated themselves as generally extremely supportive of children's displays of negative emotion, reporting a 3.56 on a scale from 0 (low) to 4 (high).

MBI emotional exhaustion subscale.[11] Lead teachers' ratings of emotional exhaustion and overextension at work was assessed using the MBI educator rating scale of 0 (low) to 54 (high). Teachers rated nine items on a scale of 0 to 6. Items were added to create a total score with the mean of non-missing values imputed for missing values. In general, the Head Start CARES sample reported low mean levels (a score of around 14), while the MBI validation

[6]Hakim-Larson et al. (2006).
[7]Maslach, Jackson, and Leiter (1996).
[8]Kessler et al. (2003).
[9]Lehman, Greener, and Simpson (2002).
[10]Hakim-Larson et al. (2006).
[11]Maslach and Jackson (1981).

sample, which included over 450 teachers from Massachusetts, reported mean levels of emotional exhaustion around a score of 21.[12]

Kessler Psychological Distress Scale (K-6). The Kessler Psychological Distress Scale (K-6) includes six questions that ask teachers about their emotional state and are scored on a scale of 0 (none of the time) to 4 (all of the time).[13] Scores from the six questions are summed with the mean of non-missing values imputed for missing values, producing a score between 0 and 24. Low scores indicate low levels of psychological distress, and high scores indicate high levels of psychological distress. Questions include, for example, "During the last 30 days, about how often did you feel nervous?" and "During the last 30 days, about how often did you feel worthless?" Lead teachers in Head Start CARES generally rated themselves as having low distress, reporting a 3 on a scale from 0 to 24.

Adaptability to change. The Adaptability subscale of the TCU Organizational Readiness to Change instrument,[14] collected at baseline, is made up of four items, including, "You are willing to try new ideas even if some people are reluctant," "Learning and using new procedures are easy for you," "You are able to adapt quickly when you have to shift focus," and "It is easy to change routine procedures to meet new conditions." Given that this scale was previously used in clinical settings instead of with teachers, additional psychometric work, including an exploratory factor analysis, was completed. The items were averaged together to create a composite score; internal consistency was adequate (Cronbach's $\alpha = 0.71$). In general, teachers rated themselves highly on adaptability, averaging a score of 3 on a scale from 0 (low) to 4 (high) on their ease with and openness to trying new things.

Views on social-emotional development. Teachers responded to a question asking what they valued more: children's academic readiness or social-emotional readiness. Teachers were able to select that they valued "academic readiness" or "social-emotional readiness" more, with the middle considered neutral. Most teachers (78 percent) rated themselves as neutral.

Lead teacher and assistant teacher relationship. Lead teacher and assistant teacher relationship was based on two questions about each lead teacher's perception of her relationship with the assistant teacher. The lead teacher rated the frequency of trust and collaborative work in the relationship on a scale of 1 (never) to 5 (always). The measure of the lead and assistant teacher relationship was the average of these two items. Lead teachers rated the relationship highly, with an average score of 4.53.

[12]For more information, see Maslach, Jackson, and Leiter (1996).
[13]Kessler et al. (2002).
[14]Lehman, Greener, and Simpson (2002).

Motivation to Implement the Enhancement

The wording varied slightly by cohort and enhancement, but motivation to implement was assessed with one item: "I feel motivated to use the strategies/program/approach in my classroom." Teachers rated their motivation on a scale of 1 (strongly disagree) to 5 (strongly agree). In Cohort One, data on teachers' motivation to implement the enhancement was collected from lead and assistant teachers after each training session. In Cohort Two, data on teachers' motivation to implement the enhancement was collected from teachers between late September and November of the implementation year.[15] Unless it was missing, to create a fall score, the earliest rating from September to November was used for Cohort One; the teachers' fall rating was used for Cohort Two. At the start of the year, teachers rated themselves, on average, as highly motivated to implement their enhancement, with an average score of 4.18.

Teacher Training Feedback Forms

After the first and last training session for each enhancement, teachers were asked to rate the training. These feedback forms captured participant reactions to training content, methods, dynamics/interactions, and participant perceptions of the overall quality of each training session. Lead and assistant teachers were asked to respond to six questions on a scale of 1 (strongly disagree) to 5 (strongly agree). Many of the questions were identical to the questions that coaches answered, including, "The material was presented in an accessible and easy-to-understand manner" and "Information presented by the trainer was useful." There were also some teacher-specific questions, such as, "The training prepared me to successfully implement the program's strategies with my students."

Lead Teacher and Assistant Teacher Interviews

A total of 126 interviews with program lead teachers and 80 interviews with program assistant teachers were conducted. Lead teacher interviews were generally conducted individually, while assistant teachers were often interviewed in a group. In each grantee, three centers, each implementing a different enhancement, were selected for interviews. The interview team interviewed as many lead and assistant teachers in person in each selected center as time allowed. Lead and assistant teachers reflected on their impressions of program models, training, program model implementation, coaching sessions, the teacher dyad, informal peer coaching, and the organizational setting. As with coaches and trainers, the interviews featured semistructured questions that were created to be parallel across respondents, with specific subsets of questions designed for each type of interview. The parallel themes were background information, impressions of the enhancement, training, program model implementation, the trainer-

[15]In Cohort Two (program year 2010 to 2011), only one teacher per classroom, usually the lead teacher, completed an assessment of motivation to implement.

coach relationship, coaching sessions, the teacher dyad, informal peer coaching, organizational setting, sessions with the trainer and coach, sustainability, relationship between the developer and the trainer, and summary reflections.

Despite early research suggesting that opinion leaders and peer mentors (teachers who mentor other teachers) in education settings were able to bolster teachers' implementation of a set of teaching practices,[16] Head Start CARES teachers reported little informal peer support or contact with other teachers about implementation at all.

As detailed below, a subset of the teacher interviews (80 lead teacher interviews and 49 assistant teacher interviews) were selected for analysis. The interview analysis process is detailed under Additional Information on Qualitative Data Analysis at the end of this appendix.

Lead teachers. Interview teams were asked to select two teachers from classrooms with high fidelity scores and two teachers from classrooms with low fidelity scores from each grantee for analysis, with the goal of providing a wide range of implementation experiences. Regardless of fidelity rating, all interview teams were asked to prioritize interviews in which teachers were able to clearly articulate their feelings and provide insight into their experience participating in Head Start CARES. In situations where the interview team had trouble distinguishing which teachers fell into the high and low categories, they were asked to choose the overall "best" interviews.

Assistant teachers. Assistant teacher interviews sometimes occurred in a group setting. The interview teams were asked to select two high-fidelity assistant teacher interviews (or group interviews) from each grantee for analysis. Regardless of fidelity rating, all interview teams were asked to prioritize interviews in which assistant teachers were able to clearly articulate their feelings and provide insight into their experience participating in Head Start CARES.

Teacher Training Attendance Forms

At each training, coaches collected attendance forms to document which teachers were at the training.

[16] Atkins, Graczyk, Franzier, and Abdul-Adil (2003).

Data from Classrooms

Baseline Scores from the Classroom Assessment Scoring System (CLASS) — Preschool Version

In the spring before implementation, observers who were blind to the intervention status of the classrooms observed all adults (including both teachers) in the classroom for one day. CLASS is a nationally used measure of classroom quality.[17] It provides global, seven-point Likert scores in four aspects of the classroom climate, as shown in Appendix Table C.1: (1) *emotional support*, which includes positive climate, negative climate, teacher sensitivity, and regard for student perspectives; (2) *classroom organization*, which includes behavior management, productivity, and instructional learning formats; (3) *instructional support,* which includes concept development, quality of feedback, and language modeling; and (4) *literacy focus.* Like the lead teacher self-survey data, teachers who were present for the baseline classroom observations were not always the same teachers who implemented the enhancement the following school year. CLASS is coded in four segments; each segment consists of 20 minutes of observation followed by 10 minutes of coding.

CLASS scores. The score for each of the 10 dimensions that make up the emotional support, classroom organization, and instructional support domains was calculated as the average of the scores on that dimension across the four segments. The score for each of the three domains noted above was calculated as the average of the scores of its dimensions. The division of items into factors was determined by confirmatory factor analysis, based on the widely used Pianta 3-factor solution.[18] Confirmatory factor analysis led to selection of the Pianta 3-factor solution.

Adapted Teaching Style Rating Scale (Adapted TSRS)

In the spring before implementation and in the spring of the implementation year, observers who were blind to the intervention status of the classrooms observed the lead teacher in the classroom for one day. The Adapted TSRS was adapted for the Head Start CARES project by Dr. Cybele Raver from the original TSRS measure,[19] used in the REDI study.[20] The Adapted TSRS was created to measure the core components of each of the three enhancements as they were implemented effectively in the classroom. Appendix F shows the Adapted TSRS as it was used in Head Start CARES. Teachers were rated on a five-point Likert scale on three teacher

[17]La Paro, Pianta, and Stuhlman (2004).
[18]La Paro, Pianta, and Stuhlman (2004).
[19]Domitrovich, Cortes, and Greenberg (2000).
[20]REDI stands for REsearch-based, Developmentally Informed.

Head Start CARES Demonstration

Appendix Table C.1

CLASS Factor Analysis Structure

Dimension	Emotional Support	Classroom Organization	Instructional Support
Positive climate	X	–	–
Negative climate	X	–	–
Teacher sensitivity	X	–	–
Regard for student perspectives	X	–	–
Behavior management	–	X	–
Productivity	–	X	–
Instructional learning formats	–	X	–
Concept development	–	–	X
Quality of feedback	–	–	X
Language modeling	–	–	X

SOURCE: MDRC calculations based on observational assessments completed using the Classroom Assessment Scoring System (CLASS); see Pianta, LaParo, and Hamre (2008).

practices, as shown in Appendix Table C.2: (1) *classroom management,* which includes consistency/routine, preparedness, classroom awareness, positive behavior management, negative behavior management, and attention/engagement; (2) *social-emotional instruction,* which includes emotion modeling, emotion expression, emotion regulation, social awareness, social problem-solving, and provision of interpersonal support; and (3) *scaffolding,* which includes scaffolding dramatic play and scaffolding peer interaction. The Adapted TSRS is coded in two segments at the same time that CLASS is coded. Each Adapted TSRS segment is made up of 40 minutes of observation followed by 10 minutes of coding.

Adapted TSRS scores. The division of items into factors was determined by exploratory factor analysis. Based on scree plots and eigenvalue tables, both the Cohort One and Cohort Two data imply a three-factor solution, with eigenvalues above a 1 for all three factors. The items generally aligned with the theoretical factor structure, as shown in Appendix Table C.2. On the scaffolding variable, a third item, Talk Aloud, was dropped because of a low and nontheoretically justified loading (0.34) and low correlations with other items.

Data from Administrators/Grantee

Site Team Discussions with the Grantee

Throughout the course of the study, site teams held monthly phone calls with grantee liaisons. Site teams comprised operations staff from MDRC and MEF Associates. During site recruitment and these calls, site teams asked grantees about aspects of the organization, including structural and procedural issues related to the project. While questions varied by site, some of the questions that were asked of administrative staff included, for example, "What curricula are in place at your sites?"; "What other assessment tools are being used at your sites?"; and "When are teachers expected to complete these assessments (once a year, twice a year, and so on)?" The site teams took notes during their check-ins, which were incorporated into research team summary impressions about each grantee.

Head Start CARES Demonstration

Appendix Table C.2

Adapted TSRS Factor Analysis Structure

Dimension	Classroom Management	Social-Emotional Instruction	Scaffolding
Consistency/routine	X	–	–
Preparedness	X	–	–
Classroom awareness	X	–	–
Positive behavior management	X	–	–
Negative behavior management	X	–	–
Attention/engagement	X	–	–
Emotion modeling	–	X	–
Emotion expression	–	X	–
Emotion regulation	–	X	–
Social awareness	–	X	–
Social problem-solving	–	X	–
Interpersonal support	–	X	–
Scaffolding dramatic play	–	–	X
Scaffolding peer instruction	–	–	X
Talk aloud	–	–	–

SOURCE: MDRC calculations based on observational assessments completed using the Adapted Teaching Style Rating Scale (Adapted TSRS).

Head Start Center Supervisor Interviews

Center supervisors were asked about their impressions of the program model training, program model implementation, coaching sessions, the organizational setting, summary reflections, and sustainability. The interviews featured semistructured questions that were created to be parallel across respondents, with specific subsets of questions designed for each type of interview. The parallel themes were background information, impressions of the program models, training, program model implementation, trainer-coach relationship, coaching sessions, teacher dyad, informal peer coaching, organizational setting, sustainability, the developer-trainer relationship, and summary reflections.

Grantee Liaison Interviews

The 17 grantee liaisons were interviewed during the spring of the implementation year. The grantee liaisons explained their impressions of the program models and program model implementation, and they also described coaching sessions, the organizational setting, summary reflections, and sustainability. The interviews featured semistructured questions that were created to be parallel across respondents, with specific subsets of questions designed for each type of interview. The parallel themes were background information, impressions of the program models, training, program model implementation, trainer-coach relationship, coaching sessions, teacher dyad, informal peer coaching, organizational setting, summary reflections, trainer-coach sessions, sustainability, and the developer-trainer relationship. All sections of the grantee liaison interviews were coded, since grantee liaisons were generally involved in the implementation process and were able to provide more global assessments of the implementation process. Grantee liaisons also worked closely with administrators and were able to provide insight on enhancement sustainability and organizational support.

Data from Developers

Developer Discussions with the Technical Assistance Team

Throughout the year, the research team held periodic phone conversations with the developers of the enhancements in order to understand how the developers viewed the implementation process. These conversations, in addition to a full-day discussion at the end of implementation, helped the research team to understand the developers' perspectives about implementation in Head Start CARES. At the end of the implementation year for Cohort Two, developers were asked to rank grantees on a low-medium-high scale about their perceptions of how training was implemented, how coaching was implemented, how the enhancement was implemented in the classroom, and how well the local grantee's Head Start organizational context supported implementation. Developers also reflected on the overall implementation process and the lessons learned.

Data from Technical Assistance

Site Visits

At least one research site visit was completed with each of the 17 Head Start CARES grantees. Additionally, some grantees were visited multiple times over the course of the year for technical assistance purposes. Control sites were not visited because of funding constraints. Interview teams completed descriptions of the organizational context, the environment, and other observations they made while visiting the grantee. These site visit descriptions along with findings from the interviews informed the research team on contextual factors that affected implementation.

Research Team Training Observation Forms

From August through January, the research team observed a number of training sessions across most grantees. The team reported on the trainer's group process and relationship-building skills, leadership skills, methods, knowledge, and the participants' involvement or interest. Members from the research team attended 56 training sessions across the two cohorts, observing 9 to 10 sessions per enhancement in Cohort One and 7 to 10 sessions per enhancement in Cohort Two. Observers responded to questions by noting outstanding, satisfactory, poor, or not applicable. Observers were asked to provide additional detail if they answered a question with "outstanding" or "poor." Space was provided at the end of each section for additional comments. Examples include, "Created a professional atmosphere," "Checked for understanding throughout delivery," "Explained rationale for principles covered in a clear, convincing manner," and "Participants' overall level of participation in the workshop."

Additional Information on Qualitative Data Analysis

Interview Analysis

Qualitative analysis of interview data was completed using NVivo software. Interview teams turned in summary notes of their interviews, which were coded by two coders. In Cohort One, a codebook was created to structure how interviews would be coded in NVivo. The codebook was modified for Cohort Two. Inter-rater reliability on codes was high (99 percent). Below is an overview of how the codebook was created for Cohort One.

Major Areas of Fidelity and Major Codes

In the fall of 2010, the Head Start CARES research team identified major areas of inquiry, which included training, coaching, and classroom implementation, as well as documenta-

tion of organizational support. These four major areas of inquiry formed the base of the coding structure in NVivo.

Sub-codes

In continuing to expand upon the coding scheme for the Head Start CARES interviews, the coders focused on each of the four major areas to identify subcodes that would be included under each major code. In order to identify appropriate subcodes, the coders read the interview segments within each of the four sections in the Cohort One interviews to identify subcodes that would further categorize the information pertaining to the major areas of fidelity. As the coders continued to read through the interviews, some of the additional codes and subcodes needed to be further specified. Emergent codes were then added to the codebook. For example, "accessibility," "time available," and "organization" were all emergent themes that fit within "organizational culture" under "organizational support."

Global Implementation Rating Analysis

At the end of implementation, but before any impact findings were known, the research team and the site team held a final meeting to reflect on implementation using information collected from trainer fidelity logs, trainer coach quality logs, trainer supervision logs, coach monthly fidelity logs, coach weekly logs, trainer interviews, coach interviews, lead and assistant teacher interviews, center director interviews, grantee liaison interviews, site visits, and other discussions. The team rated each grantee on the quality of training, coaching, classroom implementation, and organizational support. The ratings were on a scale of low, medium-low, medium, medium-high, and high, and were reached through a process of consensus building. This rating took into account all aspects of the implementation process, including training, coaching, teacher's fidelity levels, and the organizational context. In this case, fidelity takes into account dosage of training and coaching received, adherence to the training, coaching, and enhancement and delivery, as well as the quality of that delivery, while organizational support takes into account the support provided within the grantee for implementing the enhancements. For example, a high-implementing site might be one in which everyone attended training, training was well received, teachers met with coaches weekly and were open to the coaching process, and teachers implemented all portions of the enhancements and internalized the content as intended by developers.

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Appendix D

Cost Estimates for the Head Start CARES Enhancements

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The cost of the Head Start CARES enhancements consisted primarily of teacher training and coaching. The components of these training and coaching costs are described below, and estimates of the costs are presented in Appendix Table D.1.

As mentioned in Chapter 2, a technical assistance effort and management information system (MIS) were also important to implementing these enhancements. However, the cost estimates discussed here include only the costs of the individual enhancements (that is, training and coaching for teachers), not the costs of technical assistance and monitoring by MDRC or by the enhancement developers, aside from their expenditures on trainers. This technical assistance and monitoring effort provided by MDRC was over and above what the models would be likely to provide outside of the study; therefore, the costs reported below without technical assistance are similar to the costs that a program would encounter. However, this means that additional technical assistance or support might be needed to achieve the level of implementation quality attained in Head Start CARES.

Space rental and catering for the training, as well as any cost for training new trainers and general consultation provided by trainers, are also not included in the table. The numbers in the table are approximations based on proposed budgets and, when possible, invoices, and are not exact costs. In addition, these costs are derived from estimates of training costs in 2009-2011, which may have changed since the Head Start CARES implementation years.

Costs in the Context of a Research Demonstration

The costs of Head Start CARES should also be considered in the context of the national scale of the project. Head Start CARES was a national demonstration, so the costs of trainer travel were higher in some cases because the trainers had to travel far for the training, while they were lower in places where the enhancement already had a bank of trainers. Training was also held at regional "hubs," where training sessions were conducted for teachers from multiple grantees. In a nonresearch context, the cost of travel for coaches and teachers, renting a location, and catering the training sessions could be lower if they are done on-site. On the other hand, sites implementing individually may not be able to share the costs among multiple centers or grantees, as some did in Head Start CARES. It is also possible that in a nonresearch context, coaching could be provided by existing staff, such as a mental health consultant, instead of an outside consultant.

Head Start CARES was not designed to include a cost study, and implementation costs were recorded for accounting purposes only. As a result, costs were totaled by enhancement and by grantee, rather than by component of implementation. Appendix Table D.1 was created from a combination of invoices, which documented actual spending when available, and cost assumptions created before implementation started. In some cases, these projected costs were

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Appendix Table D.1

Estimated Program Costs

Component	Overall		Incredible Years		Preschool PATHS		Tools of the Mind	
	Classroom	Student[a]	Classroom	Student	Classroom	Student	Classroom	Student
Teacher training ($)	**5,890**	**310**	**6,460**	**340**	**4,670**	**250**	**6,540**	**340**
Trainer fees	2,760	150	2,810	150	2,080	110	3,410	180
Trainer travel costs	850	40	940	50	600	30	1,030	50
Lead and assistant teacher payments	1,300	70	1,560	80	1,040	50	1,300	70
Training materials	780	40	920	50	800	40	610	30
Coach payments	200	10	250	10	150	10	200	10
Coaching ($)	**4,200**	**220**	**4,530**	**240**	**4,140**	**220**	**3,940**	**210**
Coach salaries	3,230	170	3,270	170	3,160	170	3,250	170
Coach training	690	40	620	30	750	40	700	40
Coach costs	410	20	430	20	400	20	400	20
Trainer costs	280	10	190	10	360	20	300	20
Trainer supervision[b]	290	20	630	30	220	10	—	—
Total expenditures for all components ($)	**10,090**	**530**	**10,990**	**580**	**8,810**	**460**	**10,480**	**550**

SOURCE: MDRC calculations based on fiscal and budget data.

NOTES: The costs presented in this table are approximations based on both invoices and projected costs, combining those from Cohort One (accrued in 2009-2010) and Cohort Two (accrued in 2010-2011). The per classroom and per student rates may vary in future interventions and are intended as a guide rather than a prediction.

Rounding may cause slight discrepancies in sums and differences.

[a]Cost per student is calculated based on the average number of children in Head Start classrooms across the United States. Each classroom has between 17 and 20 students. Here the number used is 19, so in a smaller classroom, the cost per student would be higher.

[b]Trainer supervision was counted separately for Incredible Years and Preschool PATHS. Tools of the Mind included trainer supervision time in the trainers' fees.

confirmed by invoices from developers; in other cases, the costs were calculated using per classroom or per training rates provided by the developers.

As can be seen in the table, program costs varied across enhancements. These differences were affected by characteristics specific to each enhancement. For example, the number of training days varied across enhancements, as shown in Table 3.1, which affected the cost of trainer, teacher, and coach participation. Trainer fees and material costs also varied across enhancements, affecting the overall cost as well. As mentioned above, MDRC's technical assistance and monitoring costs for Head Start CARES implementation are excluded from the table.[1]

Components of Teacher Training Costs

As described in more detail below, training costs included trainer fees for training and classroom visits, trainer travel, teacher payments for attending training, the cost of training materials, and coach payments for attending training.

Trainer Fees

Trainers were compensated for their time spent at training sessions and visiting classrooms. Trainer fees varied by enhancement: trainers were compensated based on a daily rate for Preschool PATHS and The Incredible Years, whereas for Tools of the Mind they were compensated based on a flat fee per classroom for training and for supervising coaches' classroom visits.

Trainer Travel

The cost includes a per visit rather than per day training rate for trainer travel, based on a flat rate for travel and per diem expenses across all enhancements. As shown in Table 3.1, Preschool PATHS and Tools of the Mind scheduled the first two training sessions together so that trainer travel costs were reduced, while Incredible Years training sessions were held individually over the course of the year, requiring separate trainer travel to each training. The Incredible Years and Preschool PATHS required only one trainer per session, while Tools of the Mind required two trainers per session. Classroom visits for all three enhancements were generally scheduled either directly before or after each training session, so additional costs for classroom visits include the costs for hotels and daily expenses, as well as the trainer fee for

[1]Technical assistance costs included site visits, a management information system (MIS) used for monitoring, support for training logistics, support for hiring coaches, developer check-ins, and cross-site coach phone calls. For a fuller description of technical assistance provided in Head Start CARES, see Chapters 3 and 4, and Appendix B, which describes the MIS.

those days. The Incredible Years included four days of classroom visits per coach; Preschool PATHS included two to three days of classroom visits; and Tools of the Mind visits were included in the flat Tools rate.

Teacher Payments

Lead and assistant teachers were both compensated for the time they spent attending training. The Head Start CARES demonstration provided grantees with site payments that were sufficient to cover compensation for lead and assistant teachers' attendance at 100 percent of the training sessions. Teachers were paid when training was on a weekend or another unpaid day. Grantees also used these payments to hire substitutes when the teachers were in training during a school day.

Training Materials

Each set of teachers from a classroom participating in the program group received training materials that varied in cost across the enhancements. Training materials included items such as manuals and manipulatives (physical objects that children use to learn concepts). The Incredible Years provided a book and workbook for every teacher. Preschool PATHS provided each classroom with a set of classroom materials, such as puppets and books, and each teacher in the classroom received a set of manuals. Tools of the Mind manuals were shared by the lead and assistant teacher in each classroom. In addition, for Cohort One, it became clear that some classrooms or centers were lacking in basic materials that were needed to implement the enhancement. To supplement the materials provided to classrooms, the training materials costs for Cohort Two also include classroom gift cards and funds for administrative support to each grantee.

Coach Payments

Coaches attended all training sessions along with their teachers. Coaches were compensated at an hourly rate for their time spent at training. The typical rate for coaches, about $25 per hour, was used to estimate the costs in Appendix Table D.1.

While the table shows average costs per classroom and per student for each enhancement, it is worth noting that there was significant variation in implementation costs across grantees based on region, grantee size, and many other factors. Additionally, because of the nature of the research study, grantees were required to offer training for three different enhancements, which probably made training more costly than it would have been if only one enhancement had been implemented per grantee. Finally, incidental costs such as training space and equipment rentals for the training sessions varied widely by grantee and are not included in these estimates.

Components of Coaching Costs

Coaches were hired to spend 90 minutes in each classroom per week. Coaches were either full- or part-time employees of the grantee and most were hired at the start of the implementation year by the grantee. Coaches were supervised by enhancement trainers and were provided minor administrative support by grantee liaisons, whose costs are not included here. The number of coaches also varied across enhancements. For more information about other aspects of the coaching process, see an earlier report that focused specifically on coaching in Head Start CARES.[2] As described below, coaching costs included coach salaries, coach training, and trainer supervision of coaches.

Coach Salaries

Coach salaries included observation and meeting time with teachers, time visiting classrooms with trainers, supervision time with trainers, and time for general preparation and reporting. As described above, coaches were paid an average hourly rate of $25. Coaches' overall salaries varied across enhancements, as each enhancement had a different number of training days across the year.

Coach Training

Coaches were trained for one day before the start of the year for Cohort One by trainers and developers for their respective enhancements. For Cohort Two, all coaches gathered in a central location and were trained for three days in advance of the start of the school year; they also spent three additional days of preparation time before working with the teachers.

Coach Supervision

Coaches were supervised by trainers, with check-ins scheduled at least once a month. Trainers and coaches were compensated for this time.

Cost Estimates

Costs are calculated for one year of implementation. All costs that are presented in Appendix Table D.1 combine those from Cohort One (accrued in 2009-2010) and Cohort Two (accrued in 2010-2011). Costs are calculated per classroom and per student, assuming 19 students per classroom, roughly the average for Head Start classrooms. Costs are averaged across grantees and therefore may reflect an average of costs between Cohort One and Cohort Two.

[2]Lloyd and Modlin (2012).

Per classroom, implementing The Incredible Years cost about $10,990, while the cost per student was about $580. Incredible Years training included six days of teacher training across the year, with a total cost comprising trainer fees, teacher compensation, and coach payments (to participate in training). Incredible Years coaching costs also included additional trainer time compared with other enhancements, based on the Incredible Years supervision model, as those trainers spent a full day after every training sessions supporting coaches in classrooms. The number of training visits is based on the estimated number of visits (four visits a year per coach), not the actual number of visits.

Per classroom, implementing Preschool PATHS cost about $8,810, while the cost per student was about $460. PATHS included four days of training across the year, which, along with lower trainer fees per day than the other enhancements, lowered the overall cost.

Tools of the Mind cost about $10,480 per classroom, while the cost per student was about $550. Tools included five days of training across the year and an additional $300 per classroom for supplemental materials, such as white boards or play props. Tools training sessions were also led by two trainers. Incredible Years and PATHS training sessions were led by one trainer each.

Appendix E

Components of the Head Start CARES Enhancements

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This appendix outlines the distinct and overlapping foci of the three social-emotional enhancements implemented in the Head Start CARES demonstration: The Incredible Years, Preschool PATHS, and Tools of the Mind — Play.[1]

A number of differing interventions aimed at improving preschool children's social-emotional development were considered for inclusion in the demonstration. The process that was used to identify interventions involved three phases. First, a list of candidate interventions was reviewed, using a set of criteria to determine whether these interventions were ready to "go to scale" in a national effectiveness trial. Second, the research base was reviewed for the small number of interventions that satisfied the first criterion. Finally, the content and organization of the identified candidates were reviewed to determine the similarity and differences between interventions.

From the review of existing interventions, three interventions were identified as being ready for scale and having a research base. The three interventions were each selected to represent a different approach to enhancing social-emotional development: (1) an implicit approach to enhancing social-emotional development via effective classroom management (The Incredible Years); (2) an explicit, instructional approach (Preschool PATHS); and (3) a scaffolded play approach using peer-mediated play and learning structures to foster social-emotional development and self-regulation skills (Tools of the Mind).

In the final phase of the selection process, the content and organization of the identified candidate interventions were examined. The purpose of this final phase of review was to compare the prototype interventions representing each of the three approaches to enhancing social-emotional development to determine whether they were well discriminated from each other, based upon clear differences in the content and organization of the intervention training and implementation manuals. In this part of the review, the structure of training and professional development support, as well as the demand on teacher and class time for implementation, were also examined.

Notably, in this review, the focus was on those aspects of the training and implementation manuals that were listed *explicitly* in the written materials gathered on each of the enhancements. There was no attempt to gather further information from the developers on the more *implicit* information imparted in training or to observe training sessions or enhancement implementation to understand whether the written materials provided a comprehensive picture of each enhancement. There are two key advantages of such an approach: first, it allowed for a focus on those aspects of the enhancements that were so central that they were described in the written materials; second, more than one reviewer could check the material that was coded,

[1]This appendix draws from a document developed at the start of Head Start CARES by Karen Bierman, Pamela Morris, Emily Snell, and Marcela Torres.

which reduced subjectivity. The disadvantage of this approach is that some aspects of the enhancements may have been missed in this coding. Indeed, several of the developers indicated that this approach did neglect to identify some aspects of their enhancements: The Incredible Years developers noted that the program also has a strong focus on the social and emotional skills of children; Preschool PATHS developers noted that their approach also supports teachers' classroom management; and the developers of Tools of the Mind noted that social-emotional skills such as problem-solving or emotion identification are embedded in children's learning through "pretend play" scenarios.

Appendix Table E.1 shows the results of this content-focused review (conducted before the start of the demonstration) and provides an overview of the unique foci of each enhancement as well as the crossover of enhancement emphases. Intervention emphasis was computed based on the number of hours/lessons out of the entire core intervention that were devoted to each domain of skills. The estimates for Tools of the Mind were based on the program's first manual, which introduces the core approach to scaffolded play and other basic classroom learning structures. (Additional Tools manuals add learning structures and more advanced activities.)

Interventions were examined module-by-module, and each lesson (or hour of teacher training) was assigned a primary target skill, based on its specific content. Modules that targeted multiple skill areas were assigned the skill area that was *primarily* targeted, such that each module was counted only once. The emphasis of each intervention by skill area is documented in the top portion of the table. The table clearly shows that the relative emphasis of each intervention discriminates between a focus on classroom management (The Incredible Years), social-emotional learning (Preschool PATHS), and restructuring and scaffolding "pretend play" and learning activities (Tools of the Mind).

Head Start CARES Demonstration

Appendix Table E.1

Summary of Enhancement Components

Program Emphasis and Component	Core Program Emphasis (%)		
	Incredible Years Teacher Training Program: Classroom Management	Preschool PATHS: Social-Emotional Learning	Tools of the Mind: Scaffolded Play and Learning Activities
Program emphasis			
Social-emotional learning (SEL)	2.7	88.6	27.5
Classroom management (CM)	80.3	Embedded in lessons and extension activities	Embedded in restructured classroom organization
Deliberative/cooperative play skills and communication (DPS)	Not a core program emphasis	9.1	47.8
Other (OTH)	16.6	—	24.7
Child skills targeted[a]			
Emotional self-regulation/ behavioral inhibition (SEL)	Embedded in CM	15.9	27.5
Emotional knowledge/ expression empathy (SEL)	>2.7	54.5	Embedded in play sessions
Deliberative/cooperative play skills and communication (DPS)	>2.7	9.1	47.8
Social problem-solving (SEL)	>2.7	2.3	Embedded in play sessions
Self-esteem (OTH)	Not a core program emphasis	9.1	Not a core program emphasis
Planning/organization (DPS)	Not a core program emphasis	Not a core program emphasis	9.8
Literacy/math/science (OTH)	Not a core program emphasis	Not a core program emphasis	14.9
Teacher skills targeted[a]			
Positive behavior support (CM)	8.3	Embedded in lessons	Embedded in restructured classroom organization
Behavioral control strategies (CM)	33.3	Not a core program emphasis	Not a core program emphasis
Behavior management (CM)	16.6	Not a core program emphasis	Not a core program emphasis
Limit-setting (CM)	16.6	Not a core program emphasis	Not a core program emphasis
Teacher-child relationship (CM)	5.5	Embedded in lessons	Embedded in restructured teacher-student interactions
Classroom climate/structure (OTH)	13.9	9.1	Embedded in restructured classroom organization

SOURCE: Calculations drawn from content analysis of enhancement documents at the start of Head Start CARES by Karen Bierman, Pamela Morris, Emily Snell, and Marcela Torres.

[a]The program emphasis for each skill is shown in parentheses, as defined in the first panel.

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Appendix F

Adapted Teaching Style Rating Scale (Adapted TSRS)

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CLASSROOM STRUCTURE AND MANAGEMENT					
Consistency/Routine The teacher has the classroom operating smoothly and with a positive sense of teamwork. The teacher clearly states "rules and expectations" and his/her "routines are clearly understood by the classroom community."	**Low** 1		**Med** 3		**High** 5
Preparedness The teacher has clear plans, can deliver instructions and get children organized and engaged relatively quickly. The class runs as a "well-oiled machine."	1	2	3	4	5
Classroom Awareness The teacher is aware of what is happening in all areas of the classroom by constantly scanning and monitoring. The teacher is regularly able to anticipate the individual needs of specific children while also attending to the class. For example, she may give instructions for children who finish task/meal/activity early, or is able to redirect child/children before conflict or disruptive episodes break(s) out.	1	2	3	4	5
DISCIPLINE					
Positive Behavior Management The teacher is successful in controlling children's behavior, relying on positive behavior management strategies (rewarding good behavior with specific praise) and clear contingencies (reminding of rules, logical consequences). He/she regularly uses eye contact, simple verbal cues (e.g., clear directions, mentioning child by name), touch and other positive strategies to keep the class on track.	1	2	3	4	5
Negative Behavior Management The teacher may yell at children, make threats to withhold privileges, may display "many instances of using a tone of voice that conveys sarcasm and/or abruptness and/or harshness." The teacher may be overly rigid or restrictive.	1	2	3	4	5
EMOTIONAL COMMUNICATION & SUPPORT					
Emotion Modeling The teacher frequently takes advantage of multiple opportunities to teach children about their emotions by identifying and labeling children's emotional experiences. The teacher tells children about his/her own emotional experiences and models or demonstrates techniques to calm down (e.g., self-talk, deep breath).	1	2	3	4	5
Emotion Expression The teacher creates an environment that is supportive of children's emotional expression. He/she encourages children to talk about their emotions and validates these experiences by providing verbal and physical support when children express themselves.	1	2	3	4	5
Emotion Regulation The teacher encourages and supports children to calm down using the strategies described, both when children are showing signs of becoming emotionally aroused but also preventatively at times when it is useful to do so (e.g., before coming inside from play).	1	2	3	4	5

SOCIAL AWARENESS & PROBLEM SOLVING	
Social Awareness The teacher facilitates children's empathy and perspective-taking skills by drawing attention to peers' emotional experiences and explaining the interpersonal consequences of children's actions. He/she encourages children to provide support to one another (e.g. "Ask your friend how he feels", "What can you do to help your friend?").	1 2 3 4 5
Social Problem Solving The teacher approaches problems between children as opportunities for learning. He/she provides appropriate support that matches children's skill and language level, remains calm, and uses active listening to facilitate children's communication and ability to collaborate in generating possible solutions.	1 2 3 4 5
PROMOTING SELF-REGULATION & PREVENTING MISBEHAVIOR	
Provision of Interpersonal Support The teacher uses verbally and/or physically supportive strategies (eye contact, physical contact, reassuring vocal tone, helping child to put feelings into words) to help children regain emotional control. This may include a teacher who notices and anticipates children's escalating emotional distress, and who takes steps to support de-escalation.	1 2 3 4 5
Attention/Engagement The teacher uses several different gestures, cues, and signals to get and keep the attention of the entire class.	1 2 3 4 5
SCAFFOLDING	
Scaffolding Dramatic Play The teacher elicits children's plans and helps to extend them by asking questions, etc. The teacher helps children to expand the story line, to extend story themes and actions. It does not include teacher participation in the play.	1 2 3 4 5
Scaffolding Peer Interaction The teacher elicits children's plans, helping to extend them by asking questions, etc. The teacher helps children to expand collaborative play and to extend story themes and actions. It does not include teacher participation in the play.	1 2 3 4 5
Talk Aloud The teacher "talks aloud" as he/she plans or problem-solves with children. This includes stating his/her plans, talking about the challenge/task he/she's trying to complete, and the solutions he/she could use to solve the problem or challenge.	1 2 3 4 5

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