



Executive Summary



Impact Findings from the Head Start CARES Demonstration

National Evaluation of
Three Approaches to Improving
Preschoolers' Social and
Emotional Competence

OPRE Report 2014-44
June 2014

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Impact Findings from the Head Start CARES Demonstration: National Evaluation of Three Approaches to Improving Preschoolers' Social and Emotional Competence

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Overview

Low-income preschool children face risks to their social-emotional development that can affect them later on. Although there are promising approaches to promoting preschoolers' social-emotional skills, the evidence base is limited, particularly on their effectiveness when implemented at scale.

The Head Start CARES demonstration evaluated the effects of three distinct classroom-based approaches to enhancing children's social-emotional development on a large scale. **The Incredible Years Teacher Training Program** focuses on teachers' management of the classroom and of children's behavior. **Preschool PATHS** uses structured lessons to help children learn about emotions and interact with peers appropriately. **Tools of the Mind–Play** is a one-year version of the Tools curriculum that promotes children's learning through structured “make-believe” play. A comprehensive professional development package (including teacher training, ongoing coaching, and related technical assistance) supported delivery of the enhancements over the course of one year.

The demonstration was conducted with 17 Head Start grantees that generally represent the diversity of Head Start settings nationally. Head Start CARES rigorously evaluated the impacts of the interventions, or “enhancements,” by randomly assigning approximately 100 Head Start centers within the grantees to a program group that received one of the interventions or to a control condition without any of them. The estimated impacts should be interpreted as the effects of the enhancements beyond any effects of the existing Head Start program in these classrooms. Head Start CARES tested each enhancement's impacts on teachers' practices and on children's outcomes in the spring of the preschool year, comparing those impacts with the team's theory of change for each approach.

Key Findings

- All three enhancements changed observed teachers' practices in the expected ways, confirming that their theoretical differences were reflected in classroom implementation. Impacts on classroom climate were fewer and less consistent.
- Two of the three enhancements showed consistent positive impacts on a range of children's social-emotional outcomes in preschool, although not as predicted.
 - As expected, PATHS showed small to moderate improvements in children's knowledge and understanding of emotion (emotion knowledge), social problem-solving skills, and social behaviors.
 - The Incredible Years improved children's emotion knowledge, social problem-solving skills, and social behaviors. It did not produce expected impacts on children's problem behavior and executive function (except for highest-risk children).
 - Tools of the Mind – Play did not demonstrate expected impacts on executive function or self-regulation; it produced only positive impacts on emotion knowledge.
- There was no consistent evidence that these enhancements improved children's pre-academic skills during preschool, although those skills were not key targets of the enhancements. While based on very limited information, there were virtually no impacts on outcomes in kindergarten as reported by teachers and parents.
- Findings show that evidence-based approaches can improve preschoolers' social-emotional competence when implemented at scale with appropriate supports.

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Acknowledgments

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We are extremely grateful to the many program directors and staff at the 104 Head Start centers who agreed to take part in the CARES study. We also thank the coaches who were the “feet on the ground” for supporting implementation and encouraging teachers. In addition, we are grateful for the dedicated consultation of the developers of the enhancements, Lisa St. George (The Incredible Years), Carolyn Webster-Stratton (The Incredible Years), Celene Domitrovich (Preschool PATHS), Mark Greenberg (Preschool PATHS), Rebecca Cortes (Preschool PATHS), Elena Bodrova (Tools of the Mind), Deborah Leong (Tools of the Mind), and Amy Hornbeck (Tools of the Mind), as well as the hard work of their many trainers who trained teachers and coaches around the country.

This study could not have been completed without a hard-working team devoted to collecting the large amount of data we needed all around the country. We appreciate the work of our dedicated research partners, including Linda Kuhn and Tony Lavender and their staff at Survey Research Management, who collected the data used in this report, as well as the MDRC and MEF Associates staff and consultants who participated in the site visits.

This work was a true collaboration with distinguished experts in the field of early childhood education, who committed their time and energy to ensuring that this project was carefully and thoroughly designed. We would like to thank Stephanie Jones, Howard Bloom, and Mary Louise Hemmeter, whose guidance, advice, and deep dedication were essential to this study. We also thank a broad group of Technical Working Group members who supported the project with their expertise and contributions.

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Perhaps most important, we thank the children and families who participated in our study and allowed us access into their lives for a few years. Our research would not have been possible without these individuals.

The Authors

Executive Summary

Low-income preschool children experience greater risks to their social and emotional development than their more affluent peers.¹ These gaps are observed before children begin their formal schooling, and they remain or increase during the elementary school years.² Since social and emotional risks may compromise children’s future mental health and peer relationships, addressing them is important in its own right.³ In addition, social-emotional competence may aid learning: children who have difficulty regulating their emotions and behaviors have been found to receive less instruction, to be less engaged in and less positive about their role as learners, and to have fewer opportunities for learning from peers.⁴

The Head Start CARES (Classroom-based Approaches and Resources for Emotion and Social skill promotion) demonstration tests three distinct approaches to enhancing children’s social-emotional development on a large scale within the Head Start system — the largest federally funded early-childhood education program in the United States. Conceived and sponsored by the Office of Head Start and the Office of Planning, Research and Evaluation in the Administration for Children and Families within the U.S. Department of Health and Human Services, the Head Start CARES demonstration was conducted by MDRC, a nonprofit, nonpartisan education and social policy research organization, in collaboration with MEF Associates and several academic partners.

The three social-emotional approaches tested in Head Start CARES were called “enhancements” because they complemented and enriched classroom practices that already existed. The effects, or “impacts,” of the enhancements were rigorously evaluated by randomly assigning approximately 100 Head Start centers to one of the three enhancements (the program group) or to a control group that continued with “business as usual.” Therefore, estimated impacts should be interpreted as the effects of the enhancements over and above any effects of the existing Head Start program in these sites.

¹Dodge, Pettit, and Bates (1994); Brooks-Gunn, Duncan, and Aber (1997). 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 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” (Center on the Social and Emotional Foundations for Early Learning, 2008; Yates et al., 2008).

²Alexander, Entwisle, and Kabbani (2001); Brooks-Gunn, Duncan, and Aber (1997); Dodge, Pettit, and Bates (1994); Entwisle and Hayduk (1988); Hamre and Pianta (2001); Ladd, Buhs, and Troop (2002).

³Briggs-Gowan and Carter (2008); Caspi, Moffitt, Newman, and Silva (1996); Schwartz et al. (1999).

⁴Ladd, Birch, and Buhs (1999); McClelland, Morrison, and Holmes (2000); Raver, Garner, and Smith-Donald (2007).

As described in an earlier report on the Head Start CARES demonstration,⁵ a comprehensive professional development system for teachers — including four to six training sessions, weekly coaching sessions in the classroom, a “real-time” management information system (MIS) to support monitoring, and technical assistance — supported the scale-up of the enhancements around the country. The teacher training and coaching were generally implemented as intended, supporting satisfactory implementation (a rating of 3 on a scale of 1 to 5) of the social-emotional enhancements in Head Start classrooms and leading to the expected influences on teachers’ practices, which are described below. Thus, it appears that the demonstration ensured a fair test of large-scale implementation of the three enhancements, providing a sound basis for evaluating their impact on children and classrooms in the Head Start system.

This report presents the impacts of the three enhancements tested in the Head Start CARES demonstration. It focuses on outcomes in the spring of the preschool year for (1) teachers’ practices; (2) the climate of the classroom; (3) children’s behavior regulation, executive function skills,⁶ knowledge and understanding of emotions (“emotion knowledge”), and social problem-solving skills; and (4) children’s learning behaviors and social behaviors. In addition to changing teachers’ practices, two of the three enhancements had consistent positive impacts on a range of children’s social-emotional outcomes, although not necessarily in ways that would be expected according to the theories of change that the CARES team developed.⁷

The Head Start CARES study thus demonstrates that preschool children’s social-emotional outcomes can be improved when evidence-based approaches — that is, approaches that have been shown to result in differences in children’s social and emotional outcomes — are implemented at scale with appropriate supports. The report also includes an exploratory set of findings, which have not been previously tested for these enhancements, about whether the enhancements might improve children’s early academic skills in preschool and whether they have any sustained effects as preschool children make the transition to elementary school.

The Three Program Enhancements Tested in Head Start CARES

The three social-emotional enhancements that Head Start CARES tested were “The Incredible Years Teacher Training Program,” “Preschool PATHS” (Promoting Alternative Thinking Strategies), and “Tools of the Mind—Play.” These enhancements were selected for testing

⁵Mattera, Lloyd, Fishman, and Bangser (2013).

⁶Executive function, also known as cognitive 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).

⁷The CARES team developed the theory of change for each enhancement based on the training and curricular materials and research papers from each one.

because each one was thought to exemplify a distinct theory of change for improving children’s social-emotional development, and because prior empirical evidence had shown that they were efficacious with low-income children in smaller-scale tests. In addition, these enhancements had packaged materials and training guidelines available to improve their potential for replication with fidelity to the original model in Head Start centers across the country, and they could be implemented in Head Start classrooms for all children in those classrooms (rather than for just a high-risk subsample) over a single year of implementation. Head Start CARES was the first large-scale test of these enhancements.

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.⁸ The enhancement includes strengthening and promoting positive teacher-child relationships, classroom organization (rules and predictable routines), clear and consistent limit-setting, praise and incentives to motivate students’ learning, and proactive discipline strategies. For instance, during “circle time” in an Incredible Years classroom, the teacher might say, “I really like the way Juan is sitting with his hands in his lap,” instead of mentioning the children who are still playing and not paying attention to the teacher.⁹

Preschool PATHS focuses on training teachers to use clearly outlined lessons and teaching strategies to improve children’s emotion knowledge and social problem-solving skills, including the ability to recognize, understand, and communicate about emotions; interpret difficult social situations; and select from a set of various competent solutions to such situations. PATHS provides teachers with weekly lessons that are taught during circle time, and teachers can also use other activities during the rest of the school day to give children opportunities to practice the skills they have learned. 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 together in the block area, the teacher 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?”

⁸The Teacher Training Program is one of three Incredible Years programs; the other two are the child-focused Dinosaur School and the parent-focused Parent Program.

⁹During circle time, which often occurs at the beginning of the day in preschool classrooms, the children and the teacher gather together in a circle for a particular set of activities such as greeting each other, singing a song, or counting the number of children who are in school that day.

Tools of the Mind—Play is a one-year adaptation of Tools of the Mind.¹⁰ It trains teachers to support children’s planning and enacting “make-believe” (or “pretend”) play and role-playing games to strengthen children’s ability to regulate their emotions and behavior.¹¹ A central component of Tools is a daily 50-minute period devoted to adult-supported pretend play. This component is organized and scaffolded by teachers to enhance children’s ability to plan for and understand various social roles — such as the role of family members — while enhancing their memory, ability to focus their attention, and understanding of their own and their peers’ perspectives.¹² For example, in a Tools classroom, a child might 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. Then, while the child is playing, the teacher might come over to help her expand the role-play even further, asking questions such as, “What might you need before you are able to cook dinner?” and “How would you get to the grocery store?”

Figure ES.1 shows the pathway through which the CARES enhancements are expected to have an influence on teachers’ practices, classroom climate, children’s social-emotional skills, and children’s behavioral outcomes in the preschool year. Each enhancement has as its primary goal — and, therefore, expected key outcome — the improvement of some aspect(s) of children’s social-emotional competence. Each one attempts to achieve this goal by directly targeting teachers’ practices and, in the case of Preschool PATHS and Tools of the Mind, by delivering instructional content to the children as well. In each case, improved teachers’ practices (and instructional content) are thought to improve the quality of the classroom experiences, or classroom climate, for children. It is through changes in teaching practice (and perhaps content) and climate that the enhancements are thought to improve children’s social, emotional, and behavioral outcomes.

Notably, however, while the enhancements share a core goal (improving children’s social-emotional competence), the CARES team hypothesized that each one has quite different *mediating* or *intervening* pathways to social-emotional competence for children, and that each one affects somewhat different *aspects* of children’s social-emotional competence. These hypotheses are discussed later with the findings for each enhancement, since each enhancement is being evaluated primarily in relation to the theory of change developed by the CARES team and the associated expected pattern of impacts.

¹⁰In Tools of the Mind—Play, teachers were trained for only one year in the model (instead of two years, as is typical in the Tools of the Mind program) and it was implemented as an enhancement to the existing curricula in the program sites.

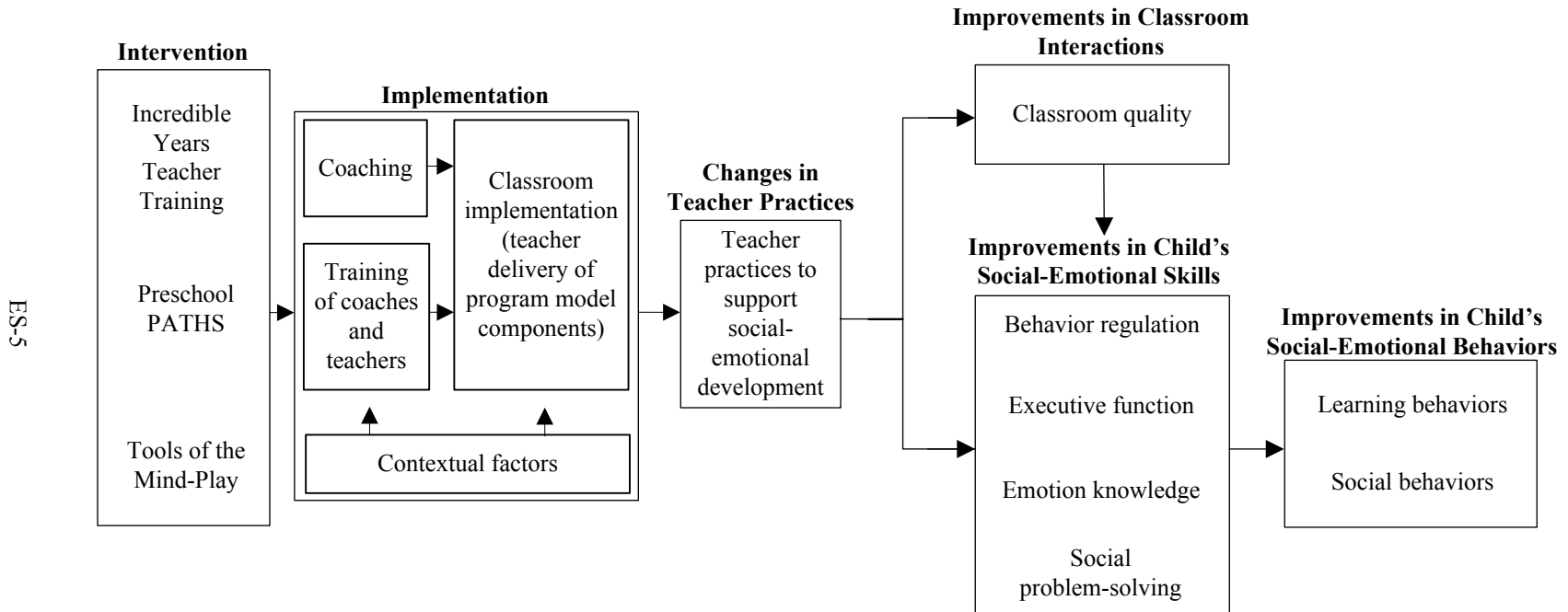
¹¹“Make-believe” is a form of high-level play in which children use their imaginations to role-play, pretend they are different characters, play out different stories, and enact various scenarios that rely on and encourage creativity.

¹²Scaffolding is the act of helping a child accomplish a challenging task or acquire a skill that is just beyond the child’s current ability level.

Head Start CARES Demonstration

Figure ES.1

Head Start CARES Theory of Change



The Design of the Head Start CARES Study and the Implementation Context

Seventeen Head Start grantees were selected to reflect the geographic, racial, and ethnic diversity of the national Head Start population. Grantees were distributed fairly equally across 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 states. Grantees were distributed across community action agencies, stand-alone nonprofit entities, and large local school systems.

For each grantee, groups of four or eight similar Head Start centers (in terms of their racial and ethnic mix, part-day or full-day programming, and four-year-old versus mixed-age classrooms) were randomly assigned to one of the three enhancements or to a control group that conducted “business as usual.” The resulting sample included 104 centers with 307 classrooms, with data collected on approximately nine children per classroom to assess impact (although all children in the classroom were treated similarly in terms of their intervention group status). Children were dispersed widely to 648 schools when they entered kindergarten the next year.

Data collection for the findings presented in this report included independent observations of teaching practices and classroom climate, surveys of teachers on children’s learning and social behaviors, and independent direct assessments of children’s cognitive and social-emotional skills (executive function, knowledge of emotions, and social problem-solving skills), all in the spring of the Head Start year.¹³ Since teachers and parents were aware when children participated in an enhancement and were not trained to assess children’s behaviors consistently, information collected by trained observers and assessors was given priority in interpreting findings. Data on children’s outcomes in kindergarten were not collected using direct assessments, but a smaller set of outcomes was collected through teacher and parent reports.

Findings

Table ES.1 highlights, with an “X,” statistically significant impacts (that is, impacts that are not likely to be a result of chance) in the areas of teacher practice, classroom climate, children’s social-emotional skills, and children’s learning and social behaviors in the spring of the preschool year. Dark areas of the table show primary, targeted outcomes for each enhancement; lighter gray areas show secondary outcomes.

¹³Baseline information was also collected: classroom observations were collected in the spring before summer training in the varying social and emotional enhancement approaches; direct child assessments and teacher surveys on children were collected in the fall of the preschool year, once children were enrolled in centers.

Head Start CARES Demonstration

Table ES.1

**Primary and Secondary Targeted Outcomes in Preschool,
by Enhancement**

	The Incredible Years	Preschool PATHS	Tools of the Mind-Play
Outcome	Trains teachers to create an organized classroom climate that supports children’s behavior regulation in the context of positive teacher-child relationships	Trains teachers to use clearly outlined lessons to improve children’s ability to recognize and regulate emotions, define problems, and consider the consequences of various choices	Trains teachers to use adult-supported make-believe play and other activities to strengthen children’s self-regulation
Teacher practice (observational assessment)			
Classroom management	X		
Social-emotional instruction	X	X	
Scaffolding			X
Classroom climate (observational assessment)			
Classroom organization			
Emotional support			
Instructional support		X	
Literacy			X
Executive function and behavior regulation^a			
Executive function			
Behavior problems			
Emotion knowledge and social problem-solving skills (direct assessments)			
Emotion knowledge	X	X	X
Social problem-solving skills	X	X	
Learning and social behaviors (teacher reports)			
Learning behaviors	X	X	
Social behaviors	X	X	

NOTES: In each cell, “X” indicates that there was a statistically significant impact on that outcome. The dark gray cells represent primary targeted outcomes for the enhancement; the light gray cells represent secondary targeted outcomes.

^aExecutive function was measured using direct assessments. Behavior problems were measured using teacher reports.

In sum, as discussed below and as shown in the table, the success of all three enhancements in changing teachers' practices in the expected ways confirms that the enhancements were differentiated not only in theory but also as delivered in the classroom. Impacts on classroom climate were fewer and less consistent with the theory of change.

Two of the three enhancements showed consistent improvements on a number of children's social-emotional outcomes by the spring of the preschool year, although not necessarily in the expected ways. The positive impacts tended to be concentrated on children's knowledge of emotions and their social skills, rather than on executive function and behavior regulation. Preschool PATHS produced the impacts most consistent with the CARES team's theory of change; however, positive findings for The Incredible Years also suggest that there is more than one way for Head Start teachers to change their practices to improve children's emotion knowledge, social problem-solving skills, and social behaviors in the preschool year.

Impacts of “The Incredible Years” in the Preschool Year

The Incredible Years' explicit focus on teachers' positive classroom management and behavioral support strategies was expected to produce a more positive classroom climate, especially with regard to the level of emotional support and classroom organization. Children in these classrooms were expected to demonstrate greater social-emotional competence, with the strongest effects on their behavior problems, executive function, and related engagement in classroom activities. Secondary benefits of The Incredible Years were expected for children's emotional and social skills (that is, their understanding of the emotions and social problem-solving that are thought to underlie social interactions), as well as for teachers' ratings of their students' social skills. While the findings show that The Incredible Years did not reduce children's behavior problems or improve their executive function skills, the enhancement did improve children's emotional and social skills and their learning behaviors.

- **Incredible Years teachers were rated higher than their control group counterparts on some aspects of classroom management practices and social-emotional instruction.**

As expected, teachers in Incredible Years classrooms used more positive behavior management practices (for example, rewarding good behavior and providing clear consequences), used fewer negative behavior-management practices (for example, yelling when there is misbehavior), and were better able to engage children's attention. These were the central aspects of Incredible Years training. To a slightly lesser extent, this enhancement also improved teachers' social-emotional instruction, even though the training materials did not focus on it explicitly or as extensively.

- **Contrary to expectations, the positive impacts on teachers’ practices did not translate into wide-ranging impacts on the quality of the climate in Incredible Years classrooms.**

Although the Incredible Years enhancement improved teachers’ behavior management and reduced the negative climate in the classrooms, it did not improve the degree of warmth and sensitivity in the classroom, the extent to which classrooms were organized, or the level of instructional support that was provided.

- **For the Incredible Years research sample as a whole, no statistically significant impacts on children’s problem behaviors or on executive function skills were observed; however, the enhancement reduced problem behaviors among the highest-risk children.**

The absence of impacts on problem behaviors and executive function skills for the Incredible Years research sample as a whole is notable (shown in Figure ES.2), since previous research in smaller-scale tests suggested that this enhancement may be especially effective for these aspects of children’s social-emotional competence.¹⁴ However, teacher ratings did show that The Incredible Years reduced problem behaviors associated with acting out and hyperactivity among children with high levels of behavior problems in the fall of the Head Start year. While this is only a single finding for a subgroup of the sample, it is consistent with research on The Incredible Years with children referred for mental health services,¹⁵ who were a key focus in the development of the program. In addition, The Incredible Years improved learning behaviors, indicating that children in Incredible Years classrooms showed better engagement in learning tasks than their counterparts in control classrooms.

- **The Incredible Years produced small but statistically significant improvements in children’s knowledge of emotions, social problem-solving skills, and social behaviors.**

According to the assessments conducted by trained interviewers, children in Incredible Years classrooms were better at identifying emotional expressions and generating more competent (including less aggressive) responses to stories about provocations, some of which were ambiguous, from other children — for example, a story in which a child knocks down another child’s tower of blocks or hits a child who is playing happily in the sandbox. In addition, teachers reported higher levels of social skills among children in Incredible Years classrooms.

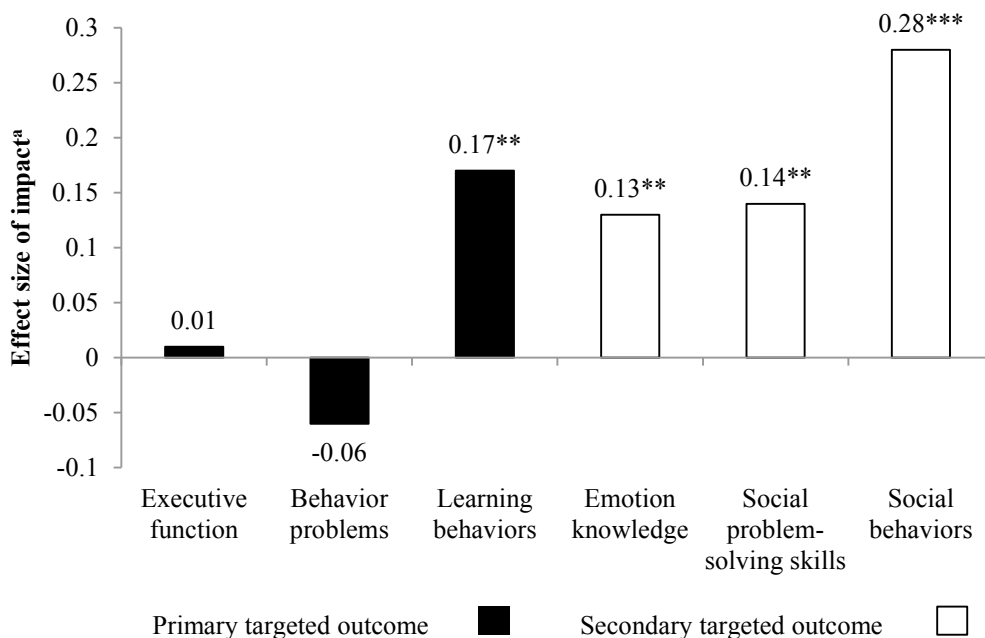
¹⁴Raver et al. (2011); Morris et al. (2013).

¹⁵Herman, Borden, Reinke, and Webster-Stratton (2011); Reid, Webster-Stratton, and Hammond (2003); Webster-Stratton, Reid, and Hammond (2004); Webster-Stratton and Reid (2003).

Head Start CARES Demonstration

Figure ES.2

Impacts of The Incredible Years on Children’s Social and Emotional Outcomes in the Preschool Year



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

This figure shows one measure as an exemplar for each outcome area. Executive function was measured by Pencil Tap; behavior problems were measured using the Behavior Problems Index; learning behaviors were measured using the Cooper-Farran Behavioral Rating Scale; emotion knowledge was measured by the Facial Emotions Task; social problem-solving skills were measured by the Challenging Situations Task (specifically, the Competent Response); and social behaviors were measured using the Social Skills Rating Scale.

^aThe effect size is the change that is a result of the intervention, as specified in a standardized way that can be compared across different measures and outcomes within a study and across different studies. Technically, the effect size is computed as the impact divided by the standard deviation of the control group.

These social skills were not explicitly taught in these classrooms (as they were in Preschool PATHS classrooms, discussed below), suggesting that children can learn these critical skills in a number of ways.

In sum, although many of the outcomes that The Incredible Years targets most directly were not affected (except for the highest-risk subgroup of children), there were impacts for children in both their knowledge of emotions and their ability to provide more competent and less aggressive responses to challenging social situations. Teachers' reports of children's social behaviors corroborated these findings. Since researchers theorize that the combination of emotion knowledge and social problem-solving skills can lead to lower levels of aggressive behavior toward peers,¹⁶ it may bode well for the longer-term outcomes of children in Incredible Years classrooms.

Impacts of “Preschool PATHS” in the Preschool Year

Teachers in Preschool PATHS classrooms were expected to display higher levels of social-emotional instruction than teachers in the control group classrooms, including explicit lessons and activities that help children recognize and then respond to emotions appropriately. The delivery of lessons targeting children's social-emotional skills was expected to lead to a more emotionally positive and well-organized classroom. Unlike The Incredible Years, which focused on children's behavior regulation and problem behaviors, the focus of PATHS was on teaching children to *understand their emotions and develop social problem-solving skills*. This builds on the theory that these skills underlie children's ability to respond positively, rather than aggressively, to their peers. The impact of PATHS on children's behavior regulation and executive function skills was thought to be secondary to these outcomes. The findings, as presented in Figure ES.3, show that the impacts of PATHS were positive and quite consistent with the theory of change that the CARES team developed, especially with regard to some of its most proximal targets: teachers' practices and children's social-emotional skills.

- **Trained observers rated Preschool PATHS teachers higher than control group teachers on all the assessed aspects of social-emotional instruction that were the central focus of PATHS training.**

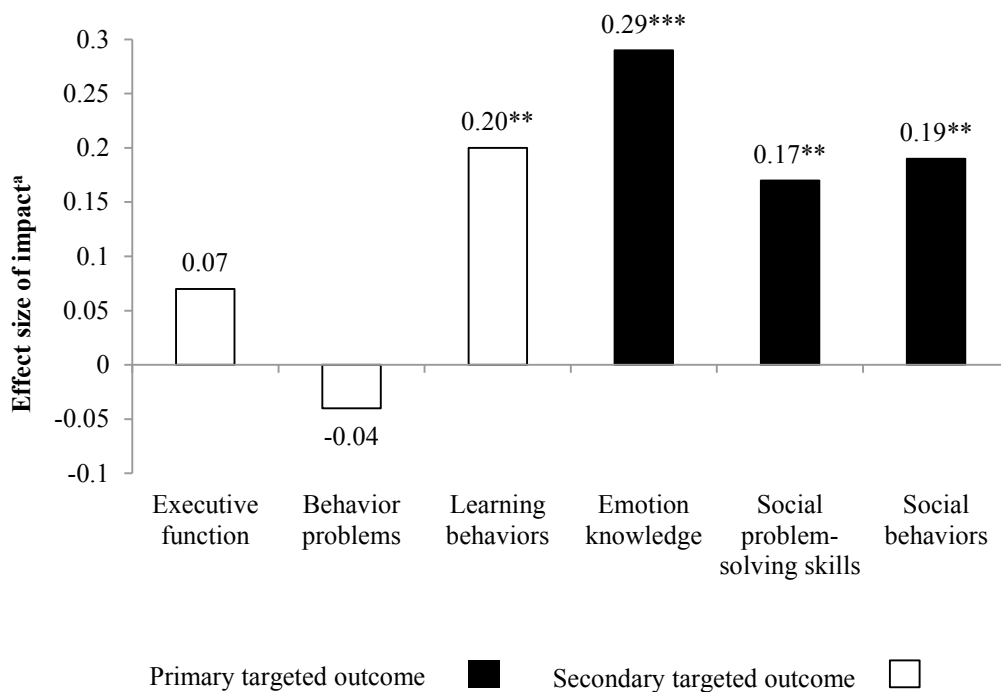
The observations of teachers in Preschool PATHS classrooms revealed that these teachers more often taught children about emotions, supported children's expression and regulation of emotions, facilitated children's understanding of their peers' emotions and their

¹⁶Crick and Dodge (1994).

Head Start CARES Demonstration

Figure ES.3

Impacts of Preschool PATHS on Children's Social and Emotional Outcomes in the Preschool Year



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

This figure shows one measure as an exemplar for each outcome area. Executive function was measured by Pencil Tap; behavior problems were measured using the Behavior Problems Index; learning behaviors were measured using the Cooper-Farran Behavioral Rating Scale; emotion knowledge was measured by the Facial Emotions Task; social problem-solving skills were measured by the Challenging Situations Task (specifically, the Competent Response); and social behaviors were measured using the Social Skills Rating Scale.

^aThe effect size is the change that is a result of the intervention, as specified in a standardized way that can be compared across different measures and outcomes within a study and across different studies. Technically, the effect size is computed as the impact divided by the standard deviation of the control group

social problem-solving skills, and supported children when they were distressed. These impacts were moderate to large in size, demonstrating that teachers were implementing the practices encouraged by PATHS to a great extent.

- **Preschool PATHS classrooms did not show the expected impacts on emotional support and classroom organization; they did score higher than control group classrooms on a measure of instructional support.**

The higher levels of social-emotional instruction by Preschool PATHS teachers were not accompanied by warmer interactions with children than was the case for teachers in control group classrooms. However, PATHS teachers did demonstrate higher levels of “concept development” (exemplified, for instance, by asking children “why” questions to support their higher-order thinking) and stronger quality of feedback (to support the quality of learning, not only the correct answer), both of which are thought to be integral to an effective learning environment for children. These results may reflect the fact that PATHS encouraged teachers to discuss emotions and social problem-solving when reading stories to children.

- **Preschool PATHS had small to moderate positive impacts on its primary targets of children’s knowledge of emotions, social problem-solving skills, and social behaviors.**

Children in Preschool PATHS classrooms were better able than children in control classrooms to identify emotional expressions and to generate competent responses to peer provocation scenarios. Consistent with these findings, teachers reported higher levels of positive social behaviors (for example, cooperating with peers and effectively resolving conflicts with them) among children in PATHS classrooms, compared with children in control classrooms. The impacts on these outcomes were small to moderate in size, highly statistically significant, and consistent with findings in previous smaller-scale studies.¹⁷

- **Preschool PATHS did not have consistent statistically significant impacts on children’s problem behaviors or executive function skills, which were not a central focus of the PATHS enhancement; PATHS did, however, improve children’s learning behaviors as reported by teachers.**

Based on teachers’ reports of children’s behavior problems and interviewer assessments of children’s executive function skills, Preschool PATHS showed no statistically significant impacts on these outcomes. The only statistically significant impact on the secondary targets of PATHS was reflected in teachers’ reports of children’s learning behaviors.

¹⁷Bierman et al. (2008); Domitrovich, Cortes, and Greenberg (2007); Hamre, Pianta, Mashburn, and Downer (2012).

In sum, as expected from the theory of change that the CARES team developed, Preschool PATHS trained teachers to deliver more effective instruction in social-emotional skills, and children in PATHS classrooms showed small to moderate improvements in their knowledge of emotions and their social problem-solving skills compared with children in control classrooms in the preschool year. Moreover, these effects on skills were complemented by preschool teachers' reports of children's improved social behaviors. Given that these emotional and social skills are thought to underlie children's reduced aggression in social interactions, the findings indicate that PATHS met its goal of improving the building blocks of children's social development in the preschool year.

Impacts of “Tools of the Mind—Play” in the Preschool Year

The Tools of the Mind enhancement that was implemented in Head Start CARES focuses on changing the way that “make-believe” (or playing “pretend”) and other learning experiences are structured and supported in the classroom. Teachers are expected to better scaffold children's pretend play sequences and children's interactions with peers during these play sequences. While there was no specific focus on teachers' behavior management, Tools classrooms were expected to be better managed for two primary reasons: First, the restructuring of circle time and other activities in order to reduce whole-group instruction would, it was believed, make it easier to keep children engaged. Second, it was thought that the focus on self-regulation through play would lead to children's better behavior and fewer classroom management issues. The primary expected impacts for Tools were in children's executive function skills and learning behaviors. Children's problem behavior as well as their understanding of emotions and their social problem-solving skills were presumed to be secondary.

Notably, despite the reduction to a one-year enhancement with a focus only on the primary elements of the program, Tools of the Mind was still a somewhat more complex enhancement to implement than either The Incredible Years or Preschool PATHS. As discussed in the first report on Head Start CARES,¹⁸ Tools classrooms had lower levels of implementation fidelity than did the other two enhancements.

- **Teachers in Tools of the Mind classrooms engaged in more scaffolding of children's pretend play and peer interactions than teachers in the control group did.**

Consistent with its central focus, Tools of the Mind had moderate-sized impacts on teachers' scaffolding of pretend play and peer interactions. No statistically significant impacts

¹⁸Mattera, Lloyd, Fishman, and Bangser (2013).

were observed on teachers' classroom management practices or on their social-emotional instruction.

- **Tools of the Mind classrooms did not demonstrate higher levels of emotional support, classroom organization, or instructional support than control classrooms, although they did score higher than control classrooms on literacy instruction.**

Tools' impact on literacy instruction was not necessarily expected, but it is consistent with the fact that some of the Tools activities (such as asking children to write out their plans for pretend play) involve a focus on children's literacy.

- **Children in Tools of the Mind classrooms did not demonstrate better executive function skills or better behavior regulation (fewer problem behaviors) than children in the control group.**

The play planning and pretend play sequences in Tools of the Mind intentionally target children's behavior regulation and executive function skills. However, based on both teacher ratings of problem behaviors and trained interviewers' direct assessment of tasks, no statistically significant impacts on any of these measures of children's social-emotional competence were observed (as shown in Figure ES.4).

- **Children in Tools of the Mind classrooms demonstrated slightly greater knowledge of emotions, but not better social problem-solving skills, than children in control classrooms.**

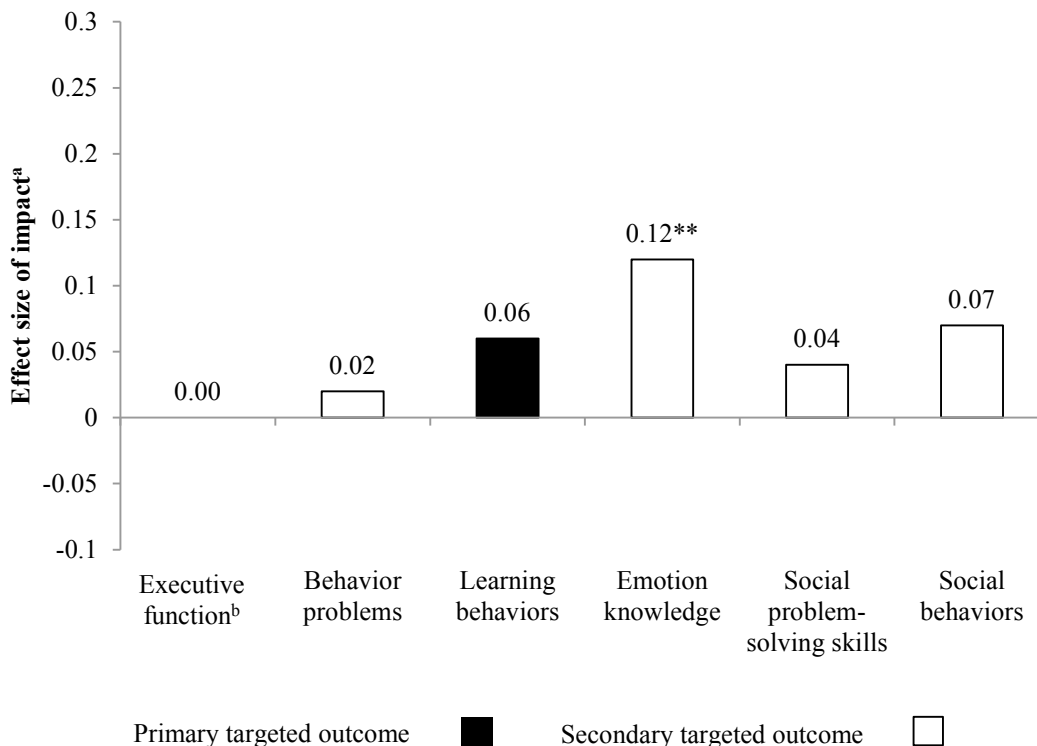
Although the children did not receive explicit lessons to support their understanding of emotions, they would likely have had an opportunity to improve emotion knowledge through play and interpreting their peers' emotional expressions in the Tools play sequences. However, no impacts were observed on other aspects of social skills, such as peer interactions and children's ability to generate more competent social problem-solving solutions.

In sum, as expected, Tools teachers were better able to scaffold children's pretend play and peer interactions when compared with control teachers. However, children in Tools classrooms did not demonstrate the expected impacts on their executive function or self-regulation skills. While the children did show better knowledge of emotions, this was not accompanied by more competent social problem-solving skills. Earlier research has shown that it is the package of these skills (knowledge of emotions *and* the ability to

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Figure ES.4

Impacts of Tools of the Mind on Children’s Social and Emotional Outcomes in the Preschool Year



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

This figure shows one measure as an exemplar for each outcome area. Executive function was measured by Pencil Tap; behavior problems were measured using the Behavior Problems Index; learning behaviors were measured using the Cooper-Farran Behavioral Rating Scale; emotion knowledge was measured by the Facial Emotions Task; social problem-solving skills were measured by the Challenging Situations Task (specifically, the Competent Response); and social behaviors were measured using the Social Skills Rating Scale.

^aThe effect size is the change that is a result of the intervention, as specified in a standardized way that can be compared across different measures and outcomes within a study and across different studies. Technically, the effect size is computed as the impact divided by the standard deviation of the control group

^bExecutive function, for which the effect size is 0, was a primary targeted outcome.

generate competent responses to peer provocation) that is critical for better social interactions later in childhood.¹⁹

Impacts on Pre-Academic and Kindergarten Outcomes

Impacts on Pre-Academic Outcomes in the Preschool Year

- **There was no consistent evidence that the three social-emotional enhancements tested in Head Start CARES improved children’s pre-academic skills during preschool.**

While social-emotional development is important in its own right (given potential associations with long-term outcomes like aggression and delinquency),²⁰ this study also examined whether any gains in the social-emotional domain might extend to children’s pre-academic skills during the preschool year, even though such skills were not targeted directly and prior evidence on such effects is inconsistent. This analysis showed that none of the enhancements produced consistent impacts on direct assessments of children’s pre-academic skills during the Head Start year.

Impacts on Teacher- and Parent-Reported Kindergarten Outcomes

The Head Start CARES study also explored the extent to which any impacts on social-emotional outcomes during the Head Start year (1) were sustained into kindergarten; and (2) might lead to improved academic skills, as well as reductions in related schooling outcomes such as grade retention and special education. Prior research suggests that the benefits of The Incredible Years and Preschool PATHS on children’s knowledge of emotions and their social problem-solving skills might result in reduced aggression with peers and better peer interactions during middle childhood. However, since earlier evidence of sustained effects of these enhancements into kindergarten is limited, and since information on outcomes in kindergarten was collected only from teachers and parents (who are not trained to rate behavior consistently), analyses of these data are considered preliminary.

¹⁹Dodge, Pettit, Bates, and Valente (1995); Dodge and Price (1994); Orobio de Castro, Bosch, Veerman, and Koops (2003).

²⁰Briggs-Gowan and Carter (2008); Caspi, Moffitt, Newman, and Silva (1996); Dodge, Pettit, and Bates (1994).

- **Despite the observed impacts on children’s social-emotional outcomes during the preschool year, none of the three enhancements appeared to have consistent impacts on children’s outcomes in kindergarten as reported by teachers and parents.**

No impacts were observed on parent-reported behavior problems or social behaviors in kindergarten, but parents of children who had been in Incredible Years classrooms reported higher receipt of special education services. There were virtually no impacts on kindergarten teachers’ reports of behavior problems, social behaviors, academic skills, or receipt of special services. However, one finding worth noting for children who were assigned to Preschool PATHS is that kindergarten teachers indicated statistically significantly lower levels of expected grade retention (from 7 percent of children coming from control group classrooms to less than 1 percent of children coming from PATHS classrooms). This finding is potentially important but requires replication and further follow-up, given the general pattern of a lack of impacts across outcomes, the lack of a corroborating evidence base from other research, and the limited measurement of child outcomes in kindergarten in this study.

Conclusion

As the first large-scale test of three social-emotional enhancements in Head Start programs nationally, this study provides critical information to the field about how interventions seeking to support children’s social-emotional development can focus their training of teachers. The findings suggest, perhaps most important, that scaled-up, evidence-based models can produce impacts in the social-emotional domain during the preschool year of nearly the same magnitude as those from smaller-scale, more controlled studies when the models are supported by strong, comprehensive professional development. In addition, these findings suggest that more than one evidence-based, social-emotional approach (and, in particular, The Incredible Years or Preschool PATHS) may be effective in meeting Head Start’s goal of improving children’s social-emotional development. Finally, these findings also suggest some key challenges for the field moving forward.

First, the improvements in teachers’ practices and children’s skills emerged when well-designed, evidence-based models with prepared written materials were supported by high-quality and ongoing training and coaching of teachers and a real-time MIS. This comprehensive infrastructure allowed teachers to learn the enhancement content in training, return to their classrooms, practice using program strategies with continuous feedback from their coaches, and return to training to reflect on their implementation. In addition, coaches and trainers continuously reported on implementation through the MIS, allowing for technical assistance to be provided in order to address implementation challenges as they were occurring in real time. This constellation of supports led to improvements in teacher practices, as well as in some

social-emotional outcomes, that were nearly as large as those from the less dispersed, more controlled efforts that had been conducted previously.

Second, improving children's understanding of emotions and their social problem-solving skills and associated social behaviors may be accomplished either by supporting teachers' positive classroom management practices (as was done in *The Incredible Years*) or their explicit teaching of emotional understanding and social skills through a more lessons-based approach (as was done in *Preschool PATHS*). Head Start programs may therefore have some options in selecting models that best meet the needs of their teachers and centers, with likely benefits for the children they are serving.

That said, while it is clearly possible to improve children's social skills and social behaviors, it may be more challenging to improve their behavior regulation and related executive function skills. None of the models that was implemented in Head Start CARES improved these outcomes for children. If, as has been suggested,²¹ children's academic achievement over the long term is related in part to their "grit" and persistence (which are likely to be influenced by children's underlying behavior regulation and executive function skills), the field still has some way to go in identifying approaches to support children's development in this area.

Third, assessing teacher practices may be important for Head Start centers that are interested in improving children's social-emotional development. *The Incredible Years* and *Preschool PATHS* improved teachers' practices as well as children's emotion knowledge, social problem-solving skills, and social behaviors, without corresponding impacts on CLASS scores.²² As such, the findings suggest the importance of assessing and strengthening specific teacher practices in efforts to enhance children's social-emotional development.

Finally, the long-term academic (or social) benefits of investing in social-emotional development are not yet clear. The findings presented in this report show that children in Head Start centers that implemented *PATHS* and *The Incredible Years* had better social-emotional outcomes than their control-group peers, but the longer-term impact as children proceed through school is still an open question. To gain a better understanding of the long-term outcomes for the Head Start CARES children, it is important to track these children with rich data collection on the kinds of outcomes that are most likely to follow from these early improvements in emotional and social skills.

Supporting children's social-emotional competence is a primary focus of Head Start, and developmental science has provided an increasingly strong rationale for this important focus. This study provides evidence about the ability of various enhancements to improve

²¹Duckworth, Peterson, Matthews, and Kelly (2007).

²²CLASS is an acronym for Classroom Assessment Scoring System.

children's social and emotional skills and behaviors within the Head Start system. As such, it provides key information that federal policymakers and Head Start providers will need if they are to increase Head Start's capacity to improve the social-emotional skills of preschool children.

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