

Supporting the Implementation of High-Quality Early Childhood Curricula in Preschool Programs

Lessons from the Field

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Preschool children's language, literacy, and math skills can be improved with high-quality implementation of curricular programs, which also have been shown to reduce disparities in school readiness between lower- and higher-income children.¹ Emerging evidence about preschool's potential benefits led to a significant increase in preschool funding by the federal government, states, and localities over the past decade, with 68 percent of four-year-olds nationwide receiving preschool services in 2018.² However, while more children now spend time in a preschool setting, not all preschool programming is created equal.

Instructional practices and quality can vary by preschool site, classroom, and teacher.³ Improving the quality of teaching and instruction takes time and planning and may be costly and require intensive work. This is particularly true when trying to make improvements among multiple preschool sites, because preschool systems often lack a cohesive infrastructure for supporting high-quality implementation of curricula and teacher practices. This can leave preschool administrators with questions about how to channel scarce resources to emphasize certain curricular supports over others.

This brief provides guidance on implementing supplemental classroom curricula and can help preschool administrators consider how to direct their efforts to support teaching and learning.⁴ Evidence built from 15 years of MDRC research on implementing supplemental curricula in preschools highlights important lessons for promoting classroom quality, instructional practices, and children's skills, as shown in Box 1.⁵ The lessons focus on three elements that supported high quality implementation and improvements in those studies:

- **a well-articulated, supplemental classroom curriculum** focused on instruction in a specific domain;
- **robust professional development**, including ongoing teacher training led by certified trainers and in-classroom coaching to support teachers; and
- **real-time data monitoring** with data-driven technical assistance and decision-making to support teacher practices; these steps and their relationships are shown in Figure 1.

While not always possible to simultaneously roll out each of these elements in your preschool setting given scarce resources and operational challenges, lessons from these studies can provide tangible guidance as you embark on the process of designing and

BOX 1: MDRC STUDIES OF SUPPLEMENTAL PRESCHOOL CLASSROOM CURRICULA

From 2006 to 2015, MDRC conducted three large-scale demonstrations of supplemental preschool classroom curricula supported by training, coaching, and data monitoring around the country. Together, these studies represent the experiences of about 1,100 preschool lead and assistant teachers and 83 coaches who participated in a total of 255 training sessions.

Foundations of Learning (FOL), a replication study, tested the effects of a classroom behavior management model that used an adapted version of the Incredible Years Teacher Training Program plus support from master’s-level clinical classroom consultants, across 91 preschool classrooms in Head Start centers, public schools, and community-based organizations in Newark, New Jersey, and Chicago, Illinois.

Head Start CARES tested three curricula designed to support children’s social-emotional development — Incredible Years Teacher Training Program, Preschool PATHS, and Tools of the Mind - Play — in 307 Head Start classrooms from 17 Head Start grantees located in 10 states.

Making Pre-K Count (MPC) examined the short- and long-term effects of Building Blocks, a math curriculum, in 173 preschool classrooms in New York City public schools and community-based organizations.

implementing high-quality preschool systems. A toolkit, soon to be published by MDRC, will provide specific tools and resources to implement various elements presented here.

PICK A SUPPLEMENTAL CURRICULUM THAT FITS YOUR PROGRAM NEEDS

Review the specific needs of the children at your preschool site before selecting a supplemental curriculum. After identifying children’s learning or developmental needs, select an evidence-based curriculum that targets the specific domain that aligns with those needs. This can help teachers improve children’s

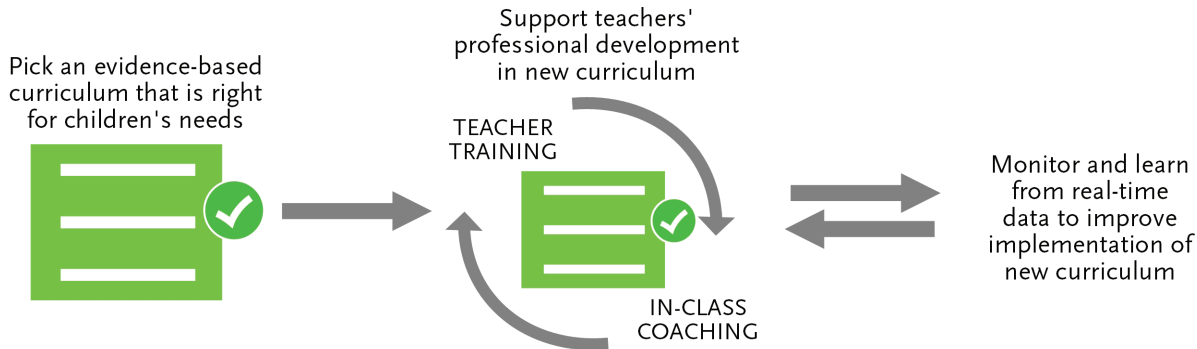
outcomes in a particular domain of child development (for example, social-emotional development, mathematics, or literacy).⁶ Consider the following three lessons when selecting a supplemental curriculum.

• LESSON ONE

A curriculum that provides focused content in one domain of children’s learning and development allows training and coaching to concentrate deeply on that domain.

To support strong implementation, consider selecting a supplemental curriculum that targets a specific domain of children’s skills or teacher practice that you are interested in sup-

FIGURE 1: THREE CORE COMPONENTS OF HIGH-QUALITY IMPLEMENTATION



porting. The preschool studies described in this brief used specific curricula focused on particular domains based on the needs of children in those preschool settings — mathematics in MPC and social-emotional development in Head Start CARES and FOL. Those curricula followed a scope and sequence of children’s development that aligned with the natural progression of children’s skills in that domain.⁷ Each curriculum’s professional development offerings also explicitly targeted core sets of teacher practices and child skills in those particular domains. By focusing on one domain, teachers and coaches became steeped in that targeted domain, which allowed for stronger implementation of the curriculum.

• LESSON TWO

When selecting a curriculum, consider whether the model has existing evidence of positive effects on the classroom climate, teachers’ instructional practices, and children’s outcomes in the targeted domain of development.

Selecting a curriculum with a proven track record of improving a specific outcome in one or more rigorous studies can increase the likelihood of seeing improvement in the targeted teacher practice or child outcome.⁸

MDRC’s preschool studies used the curricula described in Box 1 because each had a strong research base — at least one study that used the most reliable methods for proving program effects. The chosen curricula had demonstrated positive effects on the classroom climate or instructional practices, as well as on children’s outcomes, in the targeted domain.

• LESSON THREE

Fidelity to the model is strengthened by a curriculum with clear manuals, materials, and an existing training process.

Any time a supplemental curriculum is implemented outside of a controlled research setting, implementing the curriculum in the way it was designed to be delivered — known as fidelity to the model — can prove challenging. To maximize success in a real-world context, it is important to assess each curriculum for the existence and accessibility of manuals, lesson plans, and similar curricular materials. Teachers, as well as the trainers and coaches who support them, rely on existing materials produced by curriculum developers. Using previously developed manuals — checklists of needed materials, scripts, sequencing, and explanations for activities — allows teachers to

allocate time and energy to high-quality instruction and appropriate adaptations for their classrooms, rather than taking limited time and resources to create their own materials and activities. Trainers also rely on existing training and technical assistance plans from developers to ensure teachers learn curricular content in the most effective way. The use of a developed set of training materials, agendas, and content that aligned with the curricular materials was vital for successful implementation in the MDRC preschool studies.

SUPPORT TEACHERS' PROFESSIONAL DEVELOPMENT IN A NEW DOMAIN WITH TRAINING AND COACHING

When deciding how to best support your teachers when implementing a new supplemental curriculum, consider that training and coaching can be valuable and complementary parts of their professional development. Teacher training is the primary vehicle to learn new curricula and instructional practices and can also serve as a base for developing a common understanding when teachers attend alongside coaches. Coaches can expand on what teachers learn in training and help them apply those lessons directly in specific classroom contexts. In all three MDRC preschool studies, teachers and coaches reported that this model of professional development facilitated successful implementation of the supplemental preschool curricula. The following eight lessons demonstrate how to promote effective and useful training, and how a strong coaching model supports teacher implementation of supplemental curricula.

Ongoing Teacher Training

• LESSON ONE

Teachers benefit from ongoing training throughout the year.

When teacher training is scheduled throughout the year, each session can focus on specific teacher practices or activities for near-term adoption. Subsequent training can also build on prior content, resulting in a professional training model that is additive. Across the three MDRC preschool studies, teacher training was directly tied to the implementation of each domain-specific, supplemental curriculum in the classroom. How training was conducted varied by preschool study. Two of the studied curricula in Head Start CARES introduced the theory of the program in an initial training and subsequent sessions throughout the year focused on specific activities from the curriculum. In MPC, teacher training lasted for two years. The first year focused on teachers learning the curriculum and activities, and the second year sought to cultivate a deeper understanding among teachers of how children's mathematical thinking develops.

Ongoing training builds on previously learned content and provides a format in which teachers learn about strategies in a training session, practice them in the classroom, and then discuss the implementation process with their peers at a subsequent session. Thus, holding training sessions throughout the year allows for continuous feedback and support from trainers, coaches, and teachers' peers as they implement supplemental curricula. In all three MDRC preschool studies, coaches joined their teachers at the training workshops to support the link between training content and teachers' day-to-day classroom experiences. Coaches also

communicated successes and challenges from the field to trainers, enabling them to tailor training content to apply to teachers' everyday experiences managing their classrooms.

• LESSON TWO

Training lead teachers and assistants together can strengthen the implementation and sustainability of new instructional practices.

Training lead and assistant teachers together provides more consistent support for curricular implementation in the classroom, as well as continuity in classroom practices in the event of staff turnover. Joint training poses logistical challenges, as assistant teachers often need to manage classrooms while lead teachers participate in training. Making this work requires careful planning to ensure enough space for a greater number of attendees, classroom coverage if training happens during preschool hours, coverage of costs if training is not held during preschool hours, and additional materials and transportation needs. However, the benefits may outweigh the challenges; lead and assistant teachers in all three MDRC preschool studies reported that being trained together strengthened their relationship and helped make implementation more successful. In addition, training alongside lead teachers seemed to empower assistant teachers to play a more active role in implementation and boost their morale and sense of professional identity.

In-Classroom Coaching

• LESSON THREE

Consider a coaching model that makes time for observation of teachers' implementation in the classroom as well as regular opportunities for reflection and feedback about teacher practices outside the classroom.

When you develop a coaching model, include in-classroom coaching as well as time for teachers to step away from the daily concerns of teaching to focus on meeting with their coaches. Ideally, the model creates a feedback loop in which coaches' observations of what happens in the classroom inform the coach-teacher meeting, which in turn informs the next in-classroom coaching session. In the three MDRC preschool studies, coaches developed a genuine understanding of teachers' successes and challenges, observing and supporting teachers as they tried out the new curricula in their classrooms. Follow-up meetings with coaches provided teachers time away from the classroom to reflect on their practice, receive constructive feedback, set goals, and plan for the next several weeks of implementation. These meetings also enabled coaches to plan for the following classroom coaching sessions. No standard coaching model exists across early childhood education settings; however, teachers and coaches seemed to benefit from a model that offered them time for reflection and feedback based on their observed practices within the classroom.

• LESSON FOUR

The coaching process benefits from early hiring and training of appropriate coaching staff, who can develop a foundation in their knowledge of curricular content before they start working with teachers.

It is ideal to hire and train coaches before teachers are trained and the school year starts. If you hire and train coaches early, they can focus their efforts at the beginning of the school year toward building rapport with teachers, identifying teachers' needs as they enter the training process together, and helping the teachers navigate and organize the curricular materials.

The recruitment and hiring process can take a long time, since geography, the number of coaches needed, and the type of skills required all influence the process. In Head Start CARES and MPC, the team hired coaches at least three to four months before the curriculum's implementation to get coaches on board by the start of the school year. Hiring dates well ahead of the start of the school year can ensure coaches are fully trained before the start of curriculum implementation.

While training coaches before school starts can be logistically challenging and drive up costs, teachers and coaches believe that it is important. Coaches in MPC trained extensively on the coaching model, curriculum, and data collection system before implementation. That allowed them to focus on building partnerships with teachers and support them in learning the curriculum during training rather than having to learn the material simultaneously while they started coaching teachers. Early training of coaches also enabled the creation of a peer network of support and resources throughout the implementation year.

- **LESSON FIVE**
Culturally competent coaches who have skill sets that reflect the needs of preschools and their populations can facilitate curricular implementation.

As you begin the hiring process, try to determine whether the coaches' abilities and credentials match the needs of the students and teachers. In Head Start CARES, preschool sites were encouraged to hire coaches who spoke the languages used in classrooms. In some cases where preschool sites prioritized other characteristics, it was hard for coaches to

support teachers and children in real time or provide teachers with feedback if they could not understand every interaction during classroom observations. In MPC, Spanish-speaking coaches were matched to dual-language preschool sites. All coaches received additional training on cultural and linguistic competence, as well as possible program adaptations to support implementation in classrooms with dual language learners. Irrespective of language-match, the coaching model in all three MDRC preschool studies highlighted cultural competency to ensure that coaches' work responded to and addressed cultural differences in thoughtful and respectful ways. This was discussed on an ongoing basis during coaches' group supervision.

- **LESSON SIX**
Teachers seem more receptive to constructive feedback from coaches who approach their work in a collaborative and non-evaluative fashion.

When developing a coaching model, consider that teachers and coaches may have a greater opportunity to build trust into their relationship when coaches do not serve as the teachers' supervisors nor play an evaluative function. In all three MDRC preschool studies, coaches offered support in an open and collaborative fashion, providing real-time, constructive feedback on teachers' implementation of lessons and activities. Coaches generally did not share teachers' progress on implementing new curricula with preschool site staff or teachers' supervisors. This approach helped teachers feel comfortable and safe in communicating their perspectives, goals, and struggles. A core component of all three coaching models stipulated that coaches spend the start of the academic year developing rapport, building relationships and trust,

and understanding the cultural context of their classrooms and communities. The coaching models were designed to help teachers be more receptive to coaches' feedback, enabling more effective curricular implementation.⁹

• LESSON SEVEN

Coaches benefit from supervision and support from multiple stakeholders. Leadership can also help to cultivate teacher buy-in for curricular implementation by actively championing coaches' efforts.

Coaches benefit when they receive support in their work from a range of individuals, including staff from their hiring organizations, curriculum trainers, clinical supervisors from external agencies, and individuals from other support systems. Coaches also benefit from supervision and support in multiple areas, including how to handle administrative and logistical issues, such as scheduling and payment; understanding the curriculum and its expectations; and how to effectively use coaching methods and conduct coaching activities.

In all three MDRC preschool studies, preschool entities — Head Start grantees and school districts, for example — championed the studies and coaches' efforts to help build and maintain teacher rapport and enthusiasm for the curricula. The organizations that hired the coaches provided administrative support such as salary payments and performance reviews. Coaches also received support for effectively working with teachers from curriculum trainers, clinical supervisors from external agencies, or the technical assistance team, depending on the study. Finally, coaches received expert guidance from trainers and developers on curricular content and expectations throughout the year.

• LESSON EIGHT

The coaching model you develop should account for the fit between the new supplemental curriculum and your preschool site's philosophy, comprehensive core curriculum, existing services, and ongoing demands.

Any new program or supplemental curriculum requires work to align the new programmatic activities with existing instructional content and processes. Across the three MDRC preschool studies, aligning core components of the supplemental curricula with existing comprehensive curricula, services, and the preschool sites' teaching philosophies appeared to yield greater teacher buy-in. Coaches seemed better able to help teachers integrate new teaching practices when there was alignment, as well. Similarly, external or ongoing demands that conflicted with the core components of the supplemental curriculum or added to teacher and preschool site burdens (for example, whether the preschool site was undergoing Head Start review the year of implementation) created barriers to program implementation as teachers focused on other activities.

To help integrate supplemental curricula, coaches worked with curriculum trainers and technical assistance teams to create “cross-walks” connecting the new curricular requirements, content, and pedagogy with the preschool sites' external standards. That helped teachers and administrators clearly articulate how each supplemental curriculum met local, state, or federal requirements. Ultimately, increased communication and joint planning between the coaches and school-based staff benefited both.

MONITOR AND LEARN FROM DATA

If preschool sites collect data and monitor teachers' progress in multiple classrooms, it can greatly improve implementation of new supplemental curricula with fidelity. Tracking progress against established goals and benchmarks can help identify potential implementation challenges.¹⁰ Data from ongoing monitoring can identify needs or challenges for teachers, classrooms, or preschool sites, allowing quick and comprehensive support to those that need it most.

Monitoring is most effective when preschool sites use a systematic approach to tracking implementation of a supplemental curriculum. Depending on a preschool site's resources, the database can be an online, flexible management information system (MIS) for tracking program implementation, or a simple spreadsheet. Many tools can be used to collect information on the progress of coaching and implementation. For example, simple summary data from coaching or teacher logs of daily implementation activity can help identify ways to best support teacher practice. While setting up data monitoring systems may seem resource-intensive, the creative use of information from existing program activities and previously collected data, such as teachers' supervision meetings or coaches' field notes, allows preschool sites to gather information on curricular implementation more informally. The following two lessons present how data can be used to inform and strengthen the implementation of supplemental curricula.

• LESSON ONE

Flexible data systems enable ongoing monitoring of curricular implementation. Tracking progress against established benchmarks can help identify implementation challenges to provide teachers with technical assistance in a targeted, timely manner.

A monitoring system that communicates data to key stakeholders, including curriculum developers, trainers, coaches, and preschool sites, can make curricular implementation more effective. Head Start CARES and MPC used an MIS to collect data, review implementation, disseminate information about implementation to preschool sites, and support coaches and trainers in their work, all in real time. The information also allowed coaches to identify which classrooms needed more intensive support and helped them tailor their coaching in a more intentional and targeted manner.

The ability to identify trends in implementation and implementation challenges as they unfolded in these MDRC preschool studies allowed for more timely, appropriate responses that addressed teachers' immediate needs. Identifying trends also allowed technical assistance teams to address problems early, before they became larger barriers to implementation. For example, early monitoring of implementation data can indicate when teachers are off to a slow start or not moving forward at the beginning of the coaching process. This helps coaches understand the barriers teachers face and work together to find solutions. In one instance, teachers reported not being able to print materials. Communicating this to their coaches allowed them to work out site-specific strategies (for example, creating special printing accounts for teachers or allowing coaches to do

the printing for teachers) to prevent a small barrier from derailing implementation.

• LESSON TWO

Monitoring data and providing technical assistance to improve curricular implementation is most effective when tasked to a designated individual or group.

Whether a supplemental curriculum is being implemented in a small number of classrooms or across a wide set of preschool sites, the process is streamlined and improved by having a designated person or group collect data, monitor implementation against established benchmarks, and plan technical assistance based on the data. In Head Start CARES and MPC, MDRC oversaw the process of creating and monitoring the MIS and worked with coaches to review and use the data to make decisions about how to target coaching supports. Dosage and quality of implementation were monitored against predetermined benchmarks, which were used to flag classrooms that might need extra support.

However, this monitoring and technical assistance process does not need to be external. This support could be provided at the local level by a member of the participating organization with the appropriate amount of available time, skill set, and support. Regardless of how monitoring is organized, it is most effective when it results in real time, individualized assistance to struggling classrooms.

CONCLUSION

Effectively supporting the implementation of high-quality instruction in preschool systems takes place at multiple levels among multiple stakeholders. Selecting an evidence-based

supplemental curriculum aligned with your program's needs is only the first step. A robust, well-structured, and pre-planned implementation infrastructure supports strong implementation of the curriculum with fidelity and integrity. Teachers benefit from ongoing, on-the-ground support from trainers and coaches that is meaningfully tied to their classroom experiences. Strong implementation is also aided by supervising coaches who have program-specific knowledge and continuously monitoring real-time data to find ways to improve the process at your preschool site.

Based on MDRC's experience implementing preschool curricula across a variety of early childhood education settings, attention needs to be directed toward addressing and building out all the important elements of the infrastructure. Yet implementing a new supplemental preschool curriculum, particularly across many sites, can take time. Resource constraints can influence the process of building a comprehensive system to support high-quality implementation.

Nonetheless, each element, from selecting a curriculum to designing data monitoring systems that support its implementation, is strengthened by combining a theory- and evidence-driven approach with deep logistical planning and intentionality. This brief shares important lessons for preschool administrators and other relevant stakeholders to consider when they take on new curricular initiatives. The three large-scale studies highlight the most salient theoretical and logistical considerations MDRC encountered during the implementation of supplemental preschool curricula.

NOTES

- 1 See Gormley and Phillips (2005); Howes et al. (2008); Lipsey et al. (2013); Weiland and Yoshikawa (2013).
- 2 McFarland et al. (2019).
- 3 Burchinal (2018); Ludwig and Phillips (2007); NICHD Early Child Care Research Network (2002); Sabol, Ross, and Frost (2019).
- 4 The lessons presented in this brief specifically focus on the implementation of domain-specific curricula intended to supplement comprehensive curricula already in place in preschool settings. A comprehensive curriculum typically addresses multiple domains of children's development. A framework of five central domains of children's development is conceptualized in the Head Start Early Learning Outcomes Framework: Ages Birth to Five (HSELOF, 2015). In preschool, these domains include approaches to learning; social and emotional development; language, communication, and literacy; mathematics development and scientific reasoning; and, perceptual, motor, and physical development. Any mention of "curriculum" or "curricula" in this brief indicates supplemental curricula or curricular enhancements to existing comprehensive curricula, unless otherwise specified.
- 5 Lloyd and Bangser (2009); Mattera, Lloyd, Fishman, and Bangser (2013); Morris et al. (2013); Morris et al. (2014); Morris, Mattera, and Maier (2016); Mattera, Jacob, and Morris (2018).
- 6 Guidance is available for the selection of supplemental, domain-specific preschool curricula based on the strengths and needs of children and teachers. For examples of federal sources, see: Early Childhood Learning & Knowledge Center, Office of Head Start (<https://eclkc.ohs.acf.hhs.gov/archive/curriculum/article/choosing-preschool-curriculum>); and What Works Clearinghouse, Institute of Education Sciences (<https://ies.ed.gov/ncee/wwc/FWW>).
- 7 Chaudry, Morrissey, Weiland, and Yoshikawa (2017); Clements and Sarama (2008).
- 8 Rigorous studies include randomized controlled trials or quasi-experimental studies that demonstrate that the program and comparison groups were similar at the beginning of the study.
- 9 Leacock, Maier, Lloyd, and Wulfsohn (2014).
- 10 For more information about how to identify and set meaningful benchmarks, see this entry from MDRC's In Practice blog: <https://www.mdrc.org/publication/setting-strong-benchmarks>.

REFERENCES

- Burchinal, Margaret. 2018. "Measuring Early Care and Education Quality." *Child Development Perspectives* 12, 1: 3-9.
- Chaudry, Ajay, Taryn Morrissey, Christina Weiland, and Hirokazu Yoshikawa. 2017. *Cradle to Kindergarten: A New Plan to Combat Inequality*. New York: Russell Sage Foundation.
- Clements, Douglas H., and Julie Sarama. 2008. "Experimental Evaluation of the Effects of a Research-Based Preschool Mathematics Curriculum." *American Educational Research Journal* 45, 2: 443-494.
- Gormley Jr., William T., and Deborah Phillips. 2005. "The Effects of Universal Pre-K in Oklahoma: Research Highlights and Policy Implications." *Policy Studies Journal* 33, 1: 65-82.
- Howes, Carollee, Margaret Burchinal, Robert Pianta, Donna Bryant, Diane Early, Richard Clifford, and Oscar Barbarin. 2008. "Ready to Learn? Children's Pre-Academic Achievement in Pre-Kindergarten Programs." *Early Childhood Research Quarterly* 23, 1: 27-50.
- Leacock, Nicole, Michelle Maier, Chrishana M. Lloyd, and Samantha Wulfsohn. 2014. *Making Pre-K Count Coach Manual*. Unpublished manual. New York: MDRC.
- Lipsey, Mark W., Kerry G. Hofer, Nianbo Dong, Dale C. Farran, and Carol Bilbrey. 2013. *Evaluation of the Tennessee Voluntary Prekindergarten Program: End of Pre-K Results from the Randomized Control Design*. Nashville: Vanderbilt University, Peabody Research Institute.
- Lloyd, Chrishana M., and Michael Bangser. 2009. *Promoting Preschool Quality Through Effective Classroom Management*. New York: MDRC.
- Ludwig, Jens, and Deborah A. Phillips. 2007. "The Benefits and Costs of Head Start." NBER Working Paper No. 12973. Cambridge, MA: National Bureau of Economic Research.
- Mattera, Shira K., Chrishana M. Lloyd, Michael Fishman, and Michael Bangser. 2013. *A First Look at the Head Start CARES Demonstration: Large-Scale Implementation of Programs to Improve Children's Social-Emotional Competence*. New York: MDRC.
- Mattera, Shira K., Robin T. Jacob, and Pamela Morris. 2018. *Strengthening Children's Math Skills with Enhanced Instruction*. New York: MDRC.
- McFarland, Joel, Bill Hussar, Jijun Zhang, Xiaolei Wang, Ke Wang, Sarah Hein, Melissa Diliberti, Emily Forrest Cataldi, Farrah Bullock Mann, and Amy Barmer. 2019. *The Condition of Education 2019*. NCES 2019-144. Washington, DC: National Center for Education Statistics.

- Morris, Pamela, Chrishana M. Lloyd, Megan Millenky, Nicole Leacock, C. Cybele Raver, and Michael Bangser. 2013. *Using Classroom Management to Improve Preschoolers' Social and Emotional Skills: Final Impact and Implementation Findings from the Foundations of Learning Demonstration in Newark and Chicago*. New York: MDRC.
- Morris, Pamela, Shira Mattera, Nina Castells, Michael Bangser, Karen Bierman, and Cybele Raver. 2014. *Impact Findings from the Head Start CARES Demonstration: National Evaluation of Three Approaches to Improving Preschoolers' Social and Emotional Competence*. OPRE Report 2014-44. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.
- Morris, Pamela, Shira Mattera, and Michelle Maier. 2016. *Making Pre-K Count: Improving Math Instruction in New York City*. New York: MDRC.
- NICHD Early Child Care Research Network. 2002. "Child-Care Structure — Process — Outcome: Direct and Indirect Effects of Child-Care Quality on Young Children's Development." *Psychological Science* 13, 3: 199-206.
- Office of Head Start. 2015. *Head Start Early Learning Outcomes Framework: Ages Birth to Five*. Washington, DC: Office of Head Start, Administration for Children and Families, U.S. Department of Health and Human Services.
- Sabol, Terri J., Emily C. Ross, and Allison Frost. 2019. "Are All Head Start Classrooms Created Equal? Variation in Classroom Quality Within Head Start Centers and Implications for Accountability Systems." *American Educational Research Journal*: 1-31.
- Weiland, Christina, and Hirokazu Yoshikawa. 2013. "Impacts of a Prekindergarten Program on Children's Mathematics, Language, Literacy, Executive Function, and Emotional Skills." *Child Development* 84, 6: 2112-2130.

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