

THE RESEARCH SUPPORTING *MISSISSIPPI BEGINNINGS*

UNDERSTANDING MISSISSIPPI'S STATE-FUNDED PRE-K CURRICULUM

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BACKGROUND

In 2013, the authors of the Early Learning Collaborative Act, Mississippi's state-funded pre-K¹ program, incorporated the quality benchmarks set by the National Institute for Early Education Research (NIEER) into the law to ensure that children receive the same levels of program quality regardless of where they live in the state. As the program has undergone changes throughout the last decade, its commitment to quality has not wavered. In 2021, the legislature updated the act to ensure that the program continued to be in alignment with the NIEER quality benchmarks, following NIEER's first revision to the standards. At the same time, the legislature updated the law's curriculum requirement to shift from mandating a "research-based" curriculum to an "evidence-based" curriculum to bring the terminology into alignment with the federal Every Student Succeeds Act (ESSA).

The ESSA tiers of evidence have four rating levels, though only three are written into the act. Curricula must achieve the highest possible tier of evidence. Tier 1 curricula, the top tier, demonstrate "strong" evidence of effectiveness. Tier 1 curricula show statistically significant positive effects from well-designed and implemented randomized control trial studies, the gold standard in research. Tier 2 curricula demonstrate "moderate" evidence of effectiveness, which means they have statistically significant positive effects from well-designed and implemented quasi-experimental studies. A quasi-experimental study might compare the effectiveness of a curriculum by examining two groups of students at different schools, with one school using the curriculum being studied while the other school does not. Unlike randomized control trial studies, quasi-experimental studies do not randomize the students in the control or treatment groups but choose existing groups that have similarities. Tier 3 curricula have "promising" evidence derived from well-designed and implemented correlational studies that control selection bias. A correlational study examines the relationship between student outcomes and the use of a curriculum. In correlational studies, researchers use statistical techniques to try to control for selection bias instead of using treatment and control groups, so these studies do not offer the possibility of randomization. Tier 4 curricula, a tier which is not applicable to Mississippi pre-K programs, have no studies demonstrating effectiveness but have a research-based logic model and may be in the process of studying the effects.

¹Throughout this document, we use "pre-K" in order to standardize the spelling and capitalization as some of the source documentation conflicts in how the word is presented.

When the early learning collaborative (ELC) program began, ELCs used *Opening the World of Learning* (OWL), the only Tier 2 comprehensive language and literacy curriculum, and, in 2022, they adopted the use of *Building Blocks*, a Tier 1 supplemental mathematics curriculum. Unfortunately, OWL is now out of print. As curriculum studies are expensive and difficult to implement, many publishers do not invest in them, leading to a limited selection of Tier 1 and Tier 2 curricula. All of the pre-K curricula that meet the Tier 1 standards have limited commercial distribution, are supplemental math curricula, or are already in use by the state (see Appendix B). Available Tier 2 curricula are supplemental with mixed ratings across domains or are no longer in print (see Appendix B). As a result, the Mississippi Department of Education (MDE) decided to work with Boston Public Schools' (BPS) Department of Early Childhood to implement BPS's language and literacy curriculum. This document explains the evidence that supports BPS's curriculum, *Focus on Pre-K*, and why it is Mississippi's best option currently.

ABOUT *FOCUS ON PRE-K* AND *MISSISSIPPI BEGINNINGS*

BPS's Department of Early Childhood implements a free, mixed delivery program for the city of Boston's three- and four-year-old children.² Because this program is available to all children in Boston, BPS refers to it as the city's universal pre-K program, or UPK. BPS has worked closely with researchers at Harvard University, MDRC, and the University of Michigan to examine the program's effectiveness.

When studies of UPK began, the program was using two curricula: *Opening the World of Learning* (OWL) for language, literacy, and social-emotional skills, and *Building Blocks* for mathematical skills.³ In 2012, BPS decided to implement an adapted version of these evidence-based curricula with hopes of aligning content and instruction from pre-K to second grade.⁴ They did this with the permission of the original curriculum authors. The new curriculum series was called *Focus on Early Learning*, with the pre-K curriculum being *Focus on Pre-K*.

When OWL's publisher notified MDE that it would no longer print OWL, MDE searched for a close alternative. As a result of the lack of evidence-based curricula in the pre-K space explained above, MDE decided to adapt *Focus on Pre-K*, renamed *Mississippi Beginnings*, because of its close connections to OWL and *Building Blocks* and the amount and rigor of research that supports the effectiveness of Boston's UPK program (see Appendix A). We will explore some of the positive outcomes reported from the BPS program below but also want to note that **an impact study of the curriculum is currently underway that will meet the What Works Clearinghouse standards of rigor for Tier 1; this means the official rating for *Focus on Pre-K* is pending.** However, *Mississippi Beginnings* has passed the Joint Legislative Committee on Performance Evaluation and Expenditure Review's (PEER) periodic three-year evaluation of the ELCs.

² Boston Public Schools Department of Early Childhood. "Boston's Quality Pre-K Model." Accessed June 22, 2023. <https://www.bpsearlylearning.org/boston-upk>.

³ Weiland, Christina, Rebecca Unterman, Anna Shapiro, Sara Staszak, Shana Rochester, and Eleanor Martin. 2020. "The Effects of Enrolling in Oversubscribed Prekindergarten Programs Through Third Grade." *Child Development* 91(5): 1401-1422. <https://doi.org/10.1111/cdev.13308>.

⁴ McCormick, Meghan P., Christina Weiland, JoAnn Hsueh, Mirjana Pralica, Amanda K. Weissman, Lillie Moffett, Catherine Snow, and Jason Sachs. 2021. "Is skill type the key to the pre-K fadeout puzzle? Differential associations between enrollment in pre-K and constrained and unconstrained skills across kindergarten." *Child Development* 92(4): e599–e620. <https://doi.org/10.1111/cdev.13520>.

As it stands, the research about Boston's UPK is mostly about the program's overall effectiveness both before and after the adoption of *Focus on Pre-K*, although some newer studies examine whether the curriculum leads to more evidence-based teaching strategies. For instance, one study on Boston's pre-K program used systematic observations of classrooms to study the use of content-rich and cognitively demanding instructional practices and estimated the associations between those practices and children's gains in academic skills.⁵ The study found that "[c]lassrooms with higher levels of intervention fidelity to BPS's [four-year-old pre-K] curriculum were observed using more content-rich and cognitively demanding practices."⁶ In other words, *Focus on Pre-K* creates "a clear approach for programs to hone in on to enhance [...] instructional quality."⁷ This same study found that children "who started the pre-K year with weaker skills did make larger gains in academic skills than children who started the year with stronger skills."⁸ These children grew their academic skills even as the study "generally found that the benefits of content-rich instruction and cognitive demand were limited to children who began the pre-K year with higher levels of academic skills."⁹

Another study of UPK after its adoption of *Focus on Pre-K* examined the association between children's enrollment in public and non-public pre-K and the sustainability of their constrained versus unconstrained language, literacy, and math skills through the end of kindergarten.¹⁰ Constrained skills are finite and mastered relatively quickly, such as a child learning to spell their name.¹¹ Unconstrained skills take a lifetime to master and include such skills as reading comprehension.¹² In 2016–2017, this study focused on Boston's high-quality pre-K program because it was "important to study a program that ha[d] demonstrated high levels of instructional quality and . . . using a curriculum that aims to support both types of skills."¹³ The study found that "associations between public pre-K and language, literacy, and math outcomes were more strongly sustained through the spring of kindergarten for unconstrained skills, relative to constrained skills."¹⁴

Overall, Boston's high-quality pre-K program, which uses *Focus on Pre-K* as an essential component, has proven its effectiveness in improving student outcomes. Adopting *Focus on Pre-K* allows Mississippi to build on its roots with effective, highly rated curricula, such as OWL and *Building Blocks*, while implementing a curriculum that will continue to be studied and improved by Boston's research-driven Department of Early Childhood. Considering the lack of available evidence-based curricula in pre-K, this is the best option for the ELC program, pending new curriculum studies.

⁵ Maier, Michelle F., Meghan P. McCormick, Samantha Xia, JoAnn Hsueh, Christina Weiland, Abby Morales, Marina Boni, Melissa Tonachel, Jason Sachs, and Catherine Snow. 2022. "Content-rich instruction and cognitive demand in pre-K: using systematic observations to predict child gains." *Early Childhood Research Quarterly* 60: 96–109. <https://doi.org/10.1016/j.ecresq.2021.12.010>.

⁶ Ibid. Ed. note: Boston refers to pre-K for four-year-olds as "K1," so the study cites the curriculum as "*Focus on K1*." Because some readers might find this language confusing, we have specified in the text that it is the grade-level *Focus* curriculum for four-year-old pre-K.

⁷ Ibid.

⁸ Ibid.

⁹ Ibid.

¹⁰ McCormick, Meghan P., Christina Weiland, JoAnn Hsueh, Mirjana Pralica, Amanda K. Weissman, Lillie Moffett, Catherine Snow, and Jason Sachs. 2021. "Is skill type the key to the PreK fadeout puzzle? Differential associations between enrollment in pre-K and constrained and unconstrained skills across kindergarten." *Child Development* 92(4): e599–e620. <https://doi.org/10.1111/cdev.13520>.

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

APPENDIX A

Research on Boston's Pre-Kindergarten Program

Studies of UPK After Implementing *Focus on Pre-K*

Maier, Michelle F., Meghan P. McCormick, Samantha Xia, JoAnn Hsueh, Christina Weiland, Abby Morales, Marina Boni, Melissa Tonachel, Jason Sachs, and Catherine Snow. 2022. "Content-rich instruction and cognitive demand in pre-K: using systematic observations to predict child gains." *Early Childhood Research Quarterly* 60: 96-109. <https://doi.org/10.1016/j.ecresq.2021.12.010>.

McCormick, Meghan P., Christina Weiland, JoAnn Hsueh, Mirjana Pralica, Amanda K. Weissman, Lillie Moffett, Catherine Snow, and Jason Sachs. 2021. "Is skill type the key to the pre-K fadeout puzzle? Differential associations between enrollment in pre-K and constrained and unconstrained skills across kindergarten." *Child Development* 92(4): e599–e620. <https://doi.org/10.1111/cdev.13520>.

Moffett, Lillie, Amanda Weissman, Christina Weiland, Meghan McCormick, JoAnn Hsueh, Catherine Snow, and Jason Sachs. 2021. "Unpacking pre-K classroom organization: Types, variation, and links to school readiness gains." *Journal of Applied Developmental Psychology* 77: 1-11. <https://doi.org/10.1016/j.appdev.2021.101346>.

Studies of UPK Before Implementing *Focus on Pre-K*

Weiland, Christina, and Hirokazu Yoshikaw. 2013. "Impacts of a prekindergarten program on children's mathematics, language, literacy, executive function, and emotional skills." *Child Development* 84(6):2112-30. <https://www.jstor.org/stable/24029681>.

-- 2014. "Does higher peer socio-economic status predict children's language and executive function skills gains in pre-Kindergarten?" *Journal of Applied Developmental Psychology* 35(5): 422-432. <https://doi.org/10.1016/j.appdev.2014.07.001>.

Weiland, Christina, Kchersti Ulvestad, Jason Sachs, and Hirokazu Yoshikawa. 2013. "Associations between classroom quality and children's vocabulary and executive function skills in an urban public pre-Kindergarten program." *Early Childhood Research Quarterly* 28(2): 199-209. <https://doi.org/10.1016/j.ecresq.2012.12.002>.

The following studies are newer, but they use data from prior to the curriculum change:

Weiland, Christina, Meghan P. McCormick, Shira Mattera, Michelle Maier, and Pamela Morris. 2018. "Preschool Curricula and Professional Development Features for Getting to High-Quality Implementation at Scale: A Comparative Review Across Five Trials." *American Educational Research Association* 4(1): 1-16. <https://doi.org/10.1177/2332858418757735>.

Weiland, Christina, Rebecca Unterman, Anna Shapiro, Sara Staszak, Shana Rochester, and Eleanor Martin. 2020. "The Effects of Enrolling in Oversubscribed Pre-Kindergarten Programs Through Third Grade." *Child Development* 91(5): 1401-1422. <https://doi.org/10.1111/cdev.13308>.

APPENDIX B

Evidence-Based Early Childhood Curricula

Tier 1 Curricula

Pre-K Mathematics

Pre-K Mathematics is a supplemental mathematics curriculum.

According to What Works Clearinghouse, a supplemental curriculum is a curriculum that “was intended to be delivered in addition to the core curriculum rather than as a core curriculum (‘whole class’ is the most common classification). This language is most often used for Tier 2 interventions, which are those delivered to the small group of struggling students whose needs weren’t met with the core curriculum.” These curricula may focus on a particular domain or subject or a particular skill or skills. For example, a supplemental math curriculum is a complete math curriculum that must be taught in conjunction with a separate core curriculum that includes literacy, science, etc.

Literacy Express

Literacy Express is a comprehensive curriculum with a focus on language and literacy curriculum that has limited commercial distribution. The curriculum received a Tier 1 rating for oral language only as qualifying studies for other domains (math, cognition) did not find discernible effects or tiers were not assigned (phonological processing, print knowledge).

Building Blocks

Building Blocks is a supplemental mathematics curriculum that the collaboratives have used since their founding.

According to What Works Clearinghouse, a supplemental curriculum is a curriculum that “was intended to be delivered in addition to the core curriculum rather than as a core curriculum (‘whole class’ is the most common classification). This language is most often used for Tier 2 interventions, which are those delivered to the small group of struggling students whose needs weren’t met with the core curriculum.” These curricula may focus on a particular domain or subject or a particular skill or skills. For example, a supplemental math curriculum is a complete math curriculum that must be taught in conjunction with a separate core curriculum that includes literacy, science, etc.

Tier 2 Curricula

Doors to Discovery

Doors to Discovery is a supplemental language and literacy curriculum. The curriculum has a Tier 3 rating in oral language skills and a Tier 2 rating in print knowledge skills.

¹⁵ What Works Clearinghouse Help Desk Team, email correspondence with Micayla Tatum, July 17, 2023.

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[Open the World of Learning \(OWL\)](#)

OWL is a comprehensive language and literacy curriculum that is no longer in print. Its lack of availability is what prompted MDE to look for a new curriculum.