Can successful preschool programs work outside public schools?

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It has been well established, as Jane Waldfogel noted in her article in this issue, that preschool *can* improve child academic achievement and reduce inequality. The next question, then, is whether successful programs can be scaled up to reach a broader population. In this article, I look at a pilot program to expand the Boston Public School's prekindergarten model to community-based preschools.

Public and community-based preschool

Overall, 45 percent of children who receive state preschool funding are served in programs operated by private organizations rather than public schools.[1] It is likely that the setting for preschool matters; there is some evidence that children make larger gains in cognitive and socioemotional skills when they are in public school-based programs compared to community-based preschools.[2] The mechanisms through which this could occur are not clear; it is possible that the higher pay that public schools are often able to offer attracts stronger teachers, that there are differences in how programs are structured, or that different types of families tend to be selected into different settings.

There are also long-standing concerns about having a "two-tiered" system, where fewer resources are available to community-based programs compared to those that are based in public schools.[3] With many public schools facing demand for preschool that exceeds availability, it is likely that a significant number of children will continue to attend preschool in other settings; it is thus important to understand the implications of this mixed-setting approach, and to determine whether there are ways to ensure that all children have access to high-quality preschool.

The Boston Public Schools prekindergarten model

In Boston, prekindergarten for four-year-olds became available district-wide in 2005. The program model was adjusted after early evidence showed that instructional quality could be improved. The district then made significant investments in program quality, including implementing proven play-based language, literacy, and mathematics curricula, and providing regular meetings with coaches to help support teachers as they implemented the new curricula. Since 2005, prekindergarten teachers in the district have been paid on the same scale as K–12 teachers and are subject to the same educational requirements. The educational requirements in the district are fairly stringent. For example, teachers must have a master's degree within five years of their start date. While the program is open to any child in the city, the high proportion of students in the district who receive free or reduced-price lunch (around 70 percent) means that prekindergarten is effectively targeted to a largely low-income population.

A study I completed with my colleague Horiokazu Yoshikawa found that the Boston program had moderate to large effects on skills targeted by the program, namely, children's vocabulary, early reading, and math skills.[4] We also found smaller effects on children's self-regulatory skills. The Boston program differed from other large-scale prekindergarten programs in the quality of instruction provided to children in the class. As Figure 1 shows, while other programs do a similarly good job of providing emotional support to children, the Boston program outperforms others at providing instructional support.

Expansion to include community-based centers

In 2013, the Boston program expanded, through a pilot program, to include 10 community-based day care centers, with a total of 14 additional classrooms. Policymakers in Boston were interested in expanding into community-based programs not only to address public school capacity issues, but also to attempt to reach a different population. Unlike many of Boston's public school-based sites, the community-based sites are able to offer full-day care, which may provide a more attractive option to working parents. Programs in the pilot received supports that matched or were similar to those in the public schools: the same curricula materials and similar training and coaching; support and training for center directors; and increased pay. Prior to the pilot, teachers in community-based centers were earning less than the Massachusetts average; the pay raise increased their hourly wages from an average of around $13 to $23 in 2014 dollars. The hope was that this increase would improve instruction quality and increase teacher retention, satisfaction, and motivations, ultimately improving child outcomes.

Teachers in the community-based programs had a similar amount of teaching experience compared to those in the Boston Public Schools, but were much less likely to have a master's degree. The student population also differed, partly

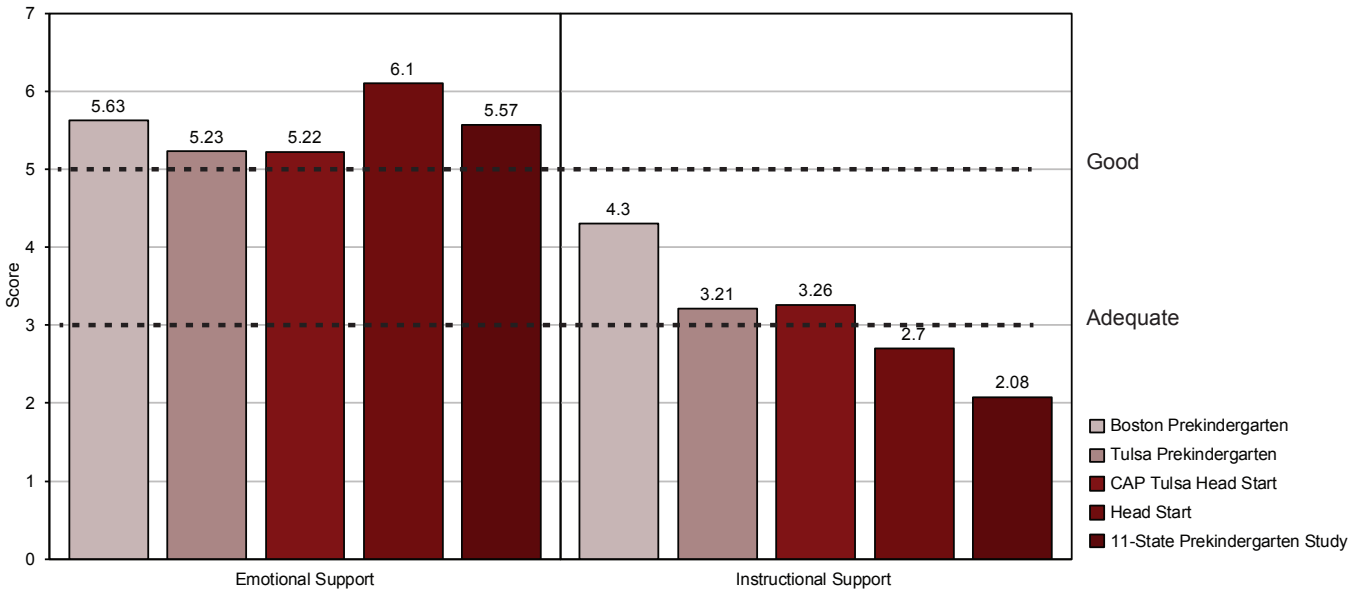

Figure 1. Boston prekindergarten quality in the context of other large-scale programs.

Notes: Scores measured using the Classroom Assessment Scoring System, an observational instrument with a seven-point scale.

Source: A. Chaudry, T. Morrissey, C. Weiland, and H. Yoshikawa, Cradle to Kindergarten: A New Plan to Combat Inequality (New York: Russell Sage, 2017).

because of the neighborhoods in which the community-based centers were located; students at the pilot sites were about twice as likely as those in the public schools to be African American.

Evaluating the outcomes of program expansion

The Boston Public Schools pilot provided an opportunity to study whether a successful program model can be scaled up to reach a broader population. Monica Yudron, Jason Sachs, and I considered two research questions in relation to the expansion: (1) Does implementing the Boston model in community-based centers improve instructional quality? and (2) Are there practical barriers to successful implementation that could be addressed in future scale-up efforts?

Did instructional quality improve?

We found that instructional quality with respect to language and literacy did increase, but these gains were not fully sustained through the two-and-a-half-year pilot period. For math instruction, there was little change in quality over the pilot period. We also found that neither language nor math instructional quality reached the level provided by the school-based sites, though for language and literacy the gap between the two did decrease over the study period. The quality of emotional support, classroom organization, and instructional support also fell short of that provided at the school-based sites.

One of the challenges encountered in scaling up the program was that adherence to the provided curricula was low to moderate, with three classrooms implementing at a high level, seven at a medium level, and four at a low level. In particular, although full implementation of the curricula requires about three-and-a-half hours of instructional time per day, on average only 80 minutes of the community-based centers' core three-hour morning instructional time (44 percent of the available time used for instruction equaling about 38 percent of the required amount of time) was spent on instruction. This reflects the fact that in public schools, instruction begins at a specific time every day because all children are required to be present at the beginning of the school day, but in community-based centers drop-off times vary, and instruction generally begins only when the majority of students have arrived.

What are the barriers to implementation?

Interviews with teachers and directors from the pilot sites suggested several ways that implementation was undermined. For example, teachers wanted to maintain the previous curriculum and this took away from the time available to implement the new curricula. Also, opportunities for teachers to plan and work together to implement the needed changes were limited. In public schools, teachers are provided some common planning time by having other staff monitor lunch periods or provide nonacademic instruction; this structure did not exist in most of the community based-centers. The lack of common planning time interfered with centers' ability to schedule coaching sessions and made it more challenging for teachers to collaborate on implementing the new curricula.

Retention over the pilot period was 71 percent for teachers and 60 percent for directors. While some of this turnover occurred because teachers were inspired to pursue a master's degree, the larger problem was that when staff

left, few qualified staff applied, and open positions were often not filled for many months. While the intention of the support and training provided to community-based center directors as part of the pilot was for them to serve as instructional leaders, this often did not occur. Again, the lack of infrastructure common in public schools meant that directors often had to attend to an array of time-sensitive administrative and maintenance needs rather than being able to provide instructional leadership.

The public school sites also had access to on-site special education services that community-based centers generally did not have, making it harder for teachers to effectively deal with challenging child behaviors. Finally, mixed-age classrooms provided a significant challenge; community-based sites included three-year-olds in their prekindergarten classrooms in order to stay financially viable, although the Boston program model was developed for four-year-olds. This issue was exacerbated by children sometimes being moved up to the older class before their third birthday, because of higher demand for spots in the younger-child classrooms. Having such a wide age range in one classroom often made it challenging to provide quality instruction to all children.

We looked at how the presence or absence of these barriers were correlated with instructional quality. We found that having a stable teaching team and the same director over the entire pilot period was positively associated with instructional quality, while the presence of three-year-olds and teachers' reluctance to give up the old curriculum were negatively associated with quality.

Advantages of community-based preschools

Although we did identify numerous barriers to implementation in community-based preschools, we also found that those sites had some advantages. Because the pilot sites, unlike public schools, did not provide any transportation to the sites, staff had more contact with parents, so teachers at the pilot sites were more likely to receive information about issues at home that might affect children in the classroom. Although pilot sites were often unsuccessful at providing the required amount of instructional time, the fact that children are present up to 9 hours a day in community-based centers compared to 6.5 hours in the public schools means there are opportunities to restructure the schedule to increase instruction. Community-based preschools also tended to do a better job of meeting families' childcare needs, since they provide year-round care. Finally, the family-style meals provided at many community-based centers offer children opportunities to participate in conversations and build oral language skills that are generally not available in the public schools.

Policy implications

Although this study has a small sample size, no control group, and was located in a single metropolitan area, we do find some useful directions for both future research and further program expansion efforts. First, the literature currently offers little concrete guidance about the trade-offs associated with different types of prekindergarten sites. Second, the concerns about having a two-tiered system with disparate levels of resources are borne out by our findings, as, for example, the community-based day care centers often had positions unfilled for many months. Third, it appears that instructional quality gains can be undermined by a lack of structural supports, so thought must go into making sure sites have what is needed to successfully carry out a program. Fourth, mixed-age classrooms need to be implemented thoughtfully; while approaches such as Montessori have an intentional theory about why classrooms are mixed-age, other programs are mixing ages primarily for financial reasons, and in ways that can negatively affect the learning environment. Finally, the large number of issues that have arisen in this small study underlines the wisdom of undertaking pilots prior to large-scale implementation. As Boston continues to scale up their prekindergarten program into community-based programs, they will be able to make changes in response to our findings; for example, a new rule has already been implemented to strictly limit the proportion of three-year-olds in a participating preschool classroom.

The two major policy questions remaining are: how to move programs into smarter curriculum and professional development choices; and how to capitalize on the strengths of community-based organizations and avoid the pitfalls.■

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[1]National Institute for Early Education Research *State of Preschool Yearbook, 2014*.

[2]See, for example, T. Grindal, "The Effects of Preschool Setting on Young Children's Cognitive Skills, Social Behavior and Approaches to Learning: A Propensity Score Analysis," Doctoral Dissertation, Harvard Graduate School of Education, 2011.

[3]D. Bellm, A. Burton, M. Whitebook, L. Broatch and M. P. Young, "Inside the Pre-K Classroom: A Study of Staffing and Stability in State-Funded Prekindergarten Programs," Washington, DC: Center for the Child Care Workforce, 2002.

[4]C. Weiland and H. Yoshikawa, "Impacts of a Prekindergarten Program on Children's Mathematics, Language, Literacy, Executive Function, and Emotional Skills," *Child Development* 84, No. 6 (November/December 2013): 2112–2130.