VIGNETTE: BUILDING A HIGH-QUALITY PROGRAM— THE BOSTON PUBLIC SCHOOLS EXPERIENCE

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> *I usually start my presentations with an image of a carousel with one horse taking off to acknowledge that our work is heavily situated within our own contexts, stakeholders, and resources. My story starts in a public school district, but I suspect that readers will come from many places—for example, state education departments, city governments, local agencies, and school districts. The Boston Public Schools' early childhood education program, which I lead, often spans multiple domains—academic, operational, budgetary, prekindergarten and kindergarten, early elementary, and the like. I hope that readers will become like the horse breaking free—taking what is useful for their own contexts—and that this article will help your work as you set out to build or improve your own preschool systems and partner with your own public schools.*
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> —Jason Sachs

The story of the early childhood initiatives undertaken by Boston Public Schools (BPS) starts long before I arrived. Boston was home to the first public school in America and also the first kindergarten. By the time I joined BPS over a decade ago, six early education centers were running full-day programs for prekindergarten up to first grade and were headed by principals who were outspoken leaders in early childhood education in both the district and in the city. The district had run half-day programs for 4-year-olds in the 1990s, but it cut that program to create resources for full-day kindergarten for all 5-year-olds. In 2005, Mayor Thomas Menino and Superintendent Thomas Payzant, both veterans in their jobs, decided it was time to serve 4-year-olds again, and almost overnight they created a universal prekindergarten program. The program was to be delivered in schools in the BPS system; it would be free for all, and teachers would be paid on the same scale and receive the same benefits as K-12 teachers and be subject to the same educational and certification requirements (e.g., they would need to earn a master's degree within 5 years). After this momentous decision, I was hired to lead the newly created Department of Early Childhood. The mayor and the superintendent at the time had each been in his position for almost a decade and had provided steady leadership and support, which turned out to be very important to the success of the program.

Before I took the job with the BPS, I worked for the Massachusetts Department of Education's Early Learning Services, which oversaw the distribution of $128 million in funds for programs from birth (family support and home visiting) through kindergarten. The work I did at the state level influenced how I saw policy tools such as accreditation from the National Association for the Education of Young Children (NAEYC), quality enhancements, professional development (PD), home visiting, evaluation, budgeting, and collaboration. It also influenced my views on management. For example, I believe that strong leaders act as facilitators, pose problems, listen, and usually speak last. I also learned how to navigate in a large bureaucracy where leaders, politics, and priorities are constantly changing. A statewide view showed me that the leadership of public schools, Head Start, and community-based programs varies from community to community, as does the quality of the services these programs offer.

Other lessons center around the importance of local collaboration, accountability, relevant real-time data, the nature of funding mechanisms (grants versus child subsidies), and capacity building. I also learned that things can be both created and dismantled very quickly, so it is important to build systems and structures that can withstand changing priorities.

Taking what I learned from the state and before, I spent 5 years working in Boston for a large child-care agency run by Douglas Baird, an outspoken leader for early education reform. Working in and for a community-based organization gave me the opportunity to see the fiscal challenges created by low state reimbursement rates for low-income child-care subsidies funded by the state and federal governments, a subject that had been an interest of mine since my PhD days. My dissertation focused on the consequences low-quality early education programming on students' outcomes. Once I knew the harm that seemingly well-intentioned policies were causing, my life's trajectory was set.

BUILDING SYSTEMS: THE WORK OF THE BPS DEPARTMENT OF EARLY CHILDHOOD

To build systems, you have to think in terms of a 3- to 5-year arc, knowing that you are going to have to make tactical shifts along the way. The choices you make should be strategic: the goal should be services that are both needed and possible to secure. It took us 6 years, for example, to implement a kindergarten curriculum across the district and almost 9 years to meaningfully link our curriculum to families. It was only in our 12th year that we were able to introduce a formative assessment system based on observation and documentation. In this chapter, I share with you the larger projects we did along the way, many of which persist to this day in modified

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forms. For example, we decided to use a centralized pre-K curriculum but have since rewritten it, and we have also developed a kindergarten to second-grade curriculum that draws on some of the same instructional practices that we use in the pre-K program.

BASIC FACTS ABOUT THE BPS EARLY CHILDHOOD PROGRAM

Under the program developed by the mayor and superintendent in 2005, K1 (our pre-K program for 4-year-olds) is the same as any other grade in the district. The only difference is that there is a full-time paraprofessional in every classroom. Our staff to student ratio is 1:11. The program operates on a normal BPS school-day and school-year schedule, and enrollment is based on a lottery system. We currently serve roughly 55% of all 4-year-olds in the city and have a waitlist of well over 1,000. The BPS pays for the services out of its own budget. The per-pupil cost is about the same as for kindergarten or fifth-grade students. Though the cost of the program to the district is reported to be around $10,000 per pupil per year, the true cost is more like $17,000 per pupil per year, owing to building maintenance and salaries for principals and support teams.

CREATING A DEPARTMENT OF EARLY CHILDHOOD

You can't really go anywhere with a group of people if you don't know where you are going and cannot convince the people with you that they want to go as well. That's why we developed a mission statement for the BPS Department of Early Childhood in 2006. The department aims "to ensure that principals, teachers, paraprofessionals and school support staff have the knowledge, skills and resources they need to provide a high-quality early education experience for all students," and its "expectation is that all children will become internally driven and self-motivated learners and will be able to read, write and communicate effectively by third grade."[1] Lately, I have been thinking that we should change "communicate effectively by third grade" to "communicate effectively and with passion by third grade." We are also contemplating adding "and compute" after "communicate" to acknowledge the importance of math skills.

As a team, we have grown from two to 24 people, and we now oversee the citywide universal pre-K program and have curriculum oversight for preschool through second grade. Eighty percent of the staff are program developers, that is, coaches, and they are a large part of our success. They are the main body of our staff and spend at least 50% of their work time in classrooms. Coaches are in a different union from the BPS teachers, so they can also provide evaluation assistance to principals. However, because the relationship between a teacher and his or her coach is nonevaluative, we use a different coach to evaluate the teacher. Coaches in general have master's degrees and are paid as much as BPS teachers or more. We have four managers—one for NAEYC accreditation, one for the universal pre-K program, one for budgets and work plans, and one for research and grant writing. Having the majority of our staff in classrooms makes us aware of the real impact of our work. Schools and classrooms are dynamic places, and we have to compete with other school and district priorities, so having coaches lead most of our work shows us what is both needed and realistic.

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[1] 1 https://www.bostonpublicschools.org/earlychildhood

We have a blended funding model that secures us resources from state, federal, and private entities. Forty percent of our staff are paid with outside grants, and the district covers the rest. Having outside funding sources is helpful for two reasons: it allows us to innovate and be flexible (city/state funds usually have to be used in specific ways), and it also holds us accountable to our private funding sources, which often require evaluation data. I have the unique opportunity to combine BPS general funds with private funding dollars. While the resources have priorities and associated accountability, there is enough tolerance in the funding that I am allowed to start new projects and also shift resources when needed. For example, both times we launched a curriculum pilot, more schools applied then we anticipated; rather than limit them, we were able to accommodate them. This decision, though it drained more resources, allowed us to serve more students in real time than if I had been constrained by the original design of the funding partner.

We are a productive group. We like to complete tasks and move on to the next large project, because many other areas—special education, learning assessments, dual language considerations, toxic family stress—need our attention. We use work plans and the evaluation system to help us focus on our priorities. We usually spend the end of May through July celebrating, analyzing our challenges, and then planning and prioritizing our work for the next school year. From August to October, we create and enact implementation plans, and from November through April we focus our efforts on schools and have monthly staff meetings that alternate between PD and coaching calibration. Grade and project teams meet weekly. This process allows us time both to reflect by providing natural break points during which to assess our progress and to productively struggle in the field where day-to-day progress seems slower.

Staff are also allowed to spend up to 20% of their time on a goal that they feel will effect change, for example, linking curriculum to families, incorporating "beautiful stuff" into the curriculum, or connecting with outside partnerships. Many of the innovations—and, subsequently, strategies—of the department come from staff members embracing their passions in this way.

COACHING AND PROFESSIONAL DEVELOPMENT

We have tried a variety of coaching models, with ratios as low as one coach to eight teachers and as high as one coach per 20 (more of a grade-level team focus). What we have learned is that coaching is most effective when the teacher wants to change and that the strategies we use need to be differentiated based on a teacher's knowledge level and how committed the school or program is to change. Loosely, teachers fall into three categories: those who need to be evaluated out; those who can grow with coaching through biweekly visits; and those who do not need much coaching or who attend seminars with peers. We have also had to work carefully on what kinds of coaching goals we pursue, focusing, for example, on curriculum knowledge transference rather than good early childhood practice because the former is much clearer and easier to coach and measure through fidelity scores.

Our PD model is relatively standardized and linked to coaching. That is, for the most part, if you attend the PD you get coaching, as the two are linked in scope and sequence. In the summer we take 3 to 5 days to introduce our curriculum to new teachers, and then we have monthly seminars—run like graduate school classes with smaller cohorts—to support their curriculum instruction. Videotaping, teacher documentation of student work, and webinars are becoming more common in our practice, and we have much more room to grow in these areas.

The lion's share of our PD focuses on first setting the table—getting teachers to understand their curriculum and the "whys" underneath it, and then getting them to reflect about who they are teaching and how differentiate their instruction. Though we focus on curriculum fidelity, we view it as "a tool, not a rule." We know that strong teachers will need to make adjustments along the way to meet the diverse needs of their classrooms. The rub is getting them to make choices based on what facilitates learning versus what is easier to manage.

WHO AND HOW WE HIRE

At BPS we work hard to hire coaches who represent the early childhood field. Hence we hire teachers from community-based programs, district literacy coaches, directors of education programs, and principals. Below are sample questions we use for hiring staff. These questions address the depth of knowledge our coaches need and underscore our commitment to the population we are serving and the importance of early literacy.

- What is your approach to collaboration? What do you expect of others? What do you do when your perspective differs from the perspectives of others?

- Please describe any experience you have working with low income, culturally diverse children and families. Include your experience working with children whose first language is not English or children with special needs. What do you draw from these experiences that would help you as a program developer or coach?

- What does developmentally appropriate practice mean to you? Why is it important and how do you incorporate this pedagogy into your practice?

- Talk about your experience teaching early literacy. What approaches have you followed and what resources have you relied on? What do you believe are the critical components to building and supporting strong early readers and writers?

- What is your approach to integrating content areas? For example, how do you see connections between literacy and science or math and social studies?

- Describe your experience with coaching or mentoring teachers (for example, observing, planning, modeling, and debriefing lessons). What is your approach to moving a teacher's practice?

- How do you advise a teacher who recognizes the interest of an individual child or group of children that strays from the path of the established curriculum? How might you respond to this tension?

- How would you develop a relationship with the principal/administrative staff to facilitate your success as a program developer? Please give examples of specific things you would do.

- Please talk about your experience and comfort in providing PD for teachers and administrators. What ideas do you have about the most effective ways to pass on professional knowledge?

SELECTION CRITERIA FOR SELECTING CLASSROOMS IN BPS

We had to establish some basic selection criteria based on supply and demand, quality of facilities, and school capacity to determine where to place classrooms:

- We did not want to create a single early childhood strand, as teachers work better in pairs.

- We had to place as many pre-K classrooms in schools as there were kindergarten classrooms.

- We had to place classrooms on first or second floors with bathrooms within 40 feet of them to meet NAEYC standards criteria.

- We had to put classrooms in schools where there was demand.

- We had to look at the choice of where to put classrooms through an equity lens of who would get access.

- The school needed to have stable leadership in place to take on more students.

In the early days, we grew from serving roughly 400 students in 30 mixed inclusion classrooms in 2005 to serving over 2,500 4-year-olds in over 150 classrooms in more than 70 elementary schools by 2010.

RESEARCH AND EVALUATION: THE ROLE OF DATA IN THE PROCESS OF CHANGE

In this section, I offer a brief history of the Department of Early Childhood's use of data and evaluations to guide program and practice. The use of research and data to drive change by the department got off to what many would consider an inauspicious start.[2] After just 2 years of operation, it hired an outside research firm to measure the quality of its classrooms. The findings were displayed prominently on the first page of the *Boston Globe*: "Boston Preschools Falling Far Short of Goals," the headline read, with the story noting that "the city's public preschool and

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[2] This section was written in collaboration with Christina Weiland, and parts of it appear in a book by Betty Bardige, Megina Baker, and Ben Mardell (2018) about the Boston Public Schools and its early childhood efforts. Chris has collaborated with our department on almost all data and evaluation work. She started out as an intern and is now an assistant professor at the University of Michigan. Having a researcher along every step of the way has strengthened the program immeasurably (pun intended).

kindergarten programs are hobbled by mediocre instruction" (Jan, 2007). The findings could have jeopardized the whole endeavor of public preschool in Boston, by creating both a "see, we told the BPS they couldn't do this" mindset and mistrust among teachers. On both counts, we survived. We did so thanks to strong leadership from the mayor and superintendent and by communicating directly with teachers and listening to the "why" behind the findings. For example, teachers said that they did not have strong curriculums, that their principals did not let them teach in developmentally appropriate ways, and that they spent too much time assessing students. The 2006 findings, however, played a large role in shaping our strategic plan and taught us that the BPS, the school committee, and the city council can tolerate negative findings, which allowed us to continue to evaluate and revise our work going forward.

RESEARCH AND EVALUATION IN THE DEPARTMENT OF EARLY CHILDHOOD, 2006–2017

Over the course of the department's history, we have collected and used data in a variety of ways. Table 1 illustrates the data types we use, how frequently these data are collected, their purpose, and how we use them to drive change. The table is purposely broad so as to give a gestalt understanding and not overwhelm the reader with information pertaining to every data type and every wave of data collection.

The outside team produces a report with central findings and also a dataset for the district's use. We use their findings to help the department make programmatic and district policy decisions and also to perform our own analyses, often linking their dataset to other sources of data available internally, such as administrative data on program demographics. Partnerships with outside researchers bring an additional perspective on what the results mean and provide more objectivity. Importantly, we are careful in our contracts with outside firms to retain full access to the identified data so that we are not limited in the kinds of internal research that are subsequently possible.

▶ Multipurpose data use

As Table 1 illustrates, the Department of Early Childhood uses data for a variety of purposes, such as identifying systematic weaknesses across classrooms and targeting PD accordingly. For example, classroom quality data collected in 2010 in prekindergarten and kindergarten revealed that although the program had the highest instructional quality of any large-scale prekindergarten to date (Weiland, Ulvestad, Sachs, & Yoshikawa, 2013), teachers were not doing enough to support children's conceptual development. Professional development was then modified to target best practices in this area. We also created a teacher-friendly template that displayed each teacher's results compared to district averages and areas for growth. Coaches worked with teachers to help them understand the implications of their scores for their practices.

Table 1. Summary of types of data collected, frequency of collection, and use

Data source	When collected	Purpose	Use
Classroom quality and curriculum fidelity observational scores	About every 2 years	Changes as program evolves; in 2012, for example, data collection focused on K-2 due to concerns about quality of education after prekindergarten	To determine program gaps, needs, and strengths; to guide professional development (PD) and programmatic decisions
Administrative data	Ongoing	To track important programmatic data like child attendance, enrollment, demographics as well as teacher education, certification, and experience	To answer questions about programmatic use and take-up; to describe the BPS population and how it changes over time. These data also are used as control variables in analyses, reducing participant burden
Teacher surveys	About every 2 years	To gather richer data on teacher background, experience of PD, and opinions/desires related to current offerings	To understand teacher population in more depth; to guide PD and programmatic decisions
P-2 child early reading skills and prekindergarten vocabulary	3 times per year (assessed by teachers)	To monitor children's early literacy and language skill development and to identify supports as needed	To describe the BPS population; to draw on as outcomes in evaluation studies
Broader set of child outcomes	When external funding is available or when a research study under way requires them	To examine children's levels and growth on a broad set of important outcomes (math, executive function, socioemotional skills)	To describe the BPS population; to draw on as outcomes in evaluation studies

Data are used to link children's learning to their program experiences. For example, BPS elementary schools vary in how mixed they are in their income demographics. At some schools, nearly all children come from low-income households, while others have approximately equal representation of students from higher- and lower-income backgrounds. Our department was interested in what effect this demographic variation would have on the pre-K program. We believed that because of the way preschool classrooms are structured, children spend a lot of time interacting with each other, and therefore that children learn a lot from each other; we also believed that higher-income children, on average, come to school with stronger language skills and more world knowledge than their lower-income peers. At the time, Harvard Graduate School of Education researchers Christina Weiland and Hirokazu Yoshikawa took up this question and examined whether the proportion of low-income peers was related to children's gains in their prekindergarten year. They found that having more mixed-income peers (versus only low-income peers) did predict gains in children's vocabulary skills during prekindergarten (Weiland & Yoshikawa, 2014). These results did not drive a policy change; BPS children are assigned to schools via a centralized choice system. But it did enhance the department's understanding of what drives children's gains in early childhood classrooms, and it contributed to conversations in the design of Boston's mixed-delivery universal pre-K system.

The mixed-income peers study was published in a peer-reviewed academic journal; feedback from peer reviewers helps us make our work more rigorous and more credible. However, more often than not, the work we have done with data sources in Table 1 has not been usable for studies in peer-reviewed journals. The available data are not always complete enough or able to capture the story fully enough to meet these journals' high standards.

However, the department has been able to make good use of its date internally. For example, in 2010, the district faced a decision regarding whether to continue to offer a summer reading program to kindergarten and first-grade students and whether to extend the program to incoming prekindergarten students. The district was well aware of research showing that low-income children commonly experience summer learning loss (Entwisle & Alexander, 1992) and that high-quality summer enrichment programs are effective in combating this problem (Borman & Dowling, 2006; Jacob & Lefgren, 2004). In late fall 2010, within the structure of our research partnership, we identified key data from the summer 2009 district summer program that could guide the decision (which children chose to attend the program, attendance data, and student outcome data) and the key research questions.
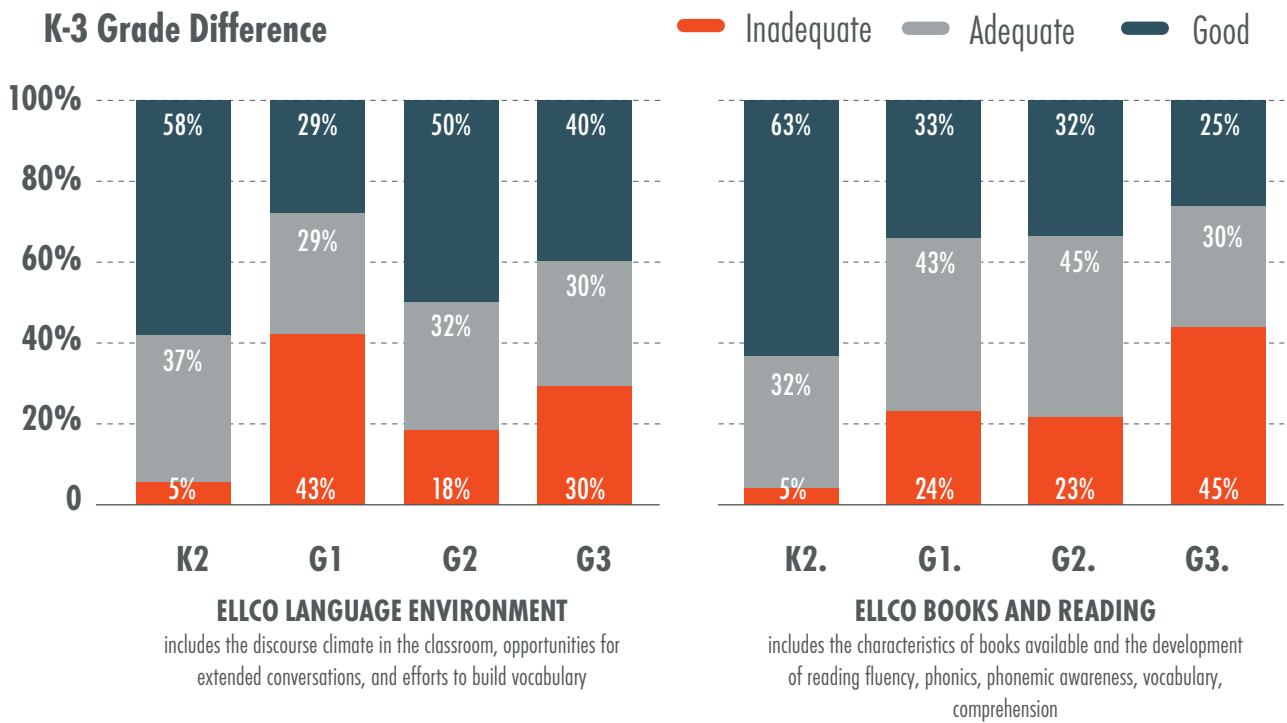
The challenge in answering the research questions rigorously was that students had selected into the program, and so any results, positive or negative, could have had to do with the students themselves and not the program. The research team decided to create two quasi-experimental control groups to increase study rigor: one group was made up of students who applied to the program but did not attend and the other was made up of students attending the same schools as summer-program attenders. Analyses showed that program attendance was strong—80% of students had attendance rates of 73% or higher. The program also reached children more in need of help than their peers; participants had lower literacy skills than their peers prior to the program and were

significantly more likely to have previously repeated a grade. Students who attended the program had stronger post-program literacy skills scores than did children in either of the two control groups. On the basis of this evidence, along with feedback from teachers involved in the program, the district decided not only to continue to offer the program but to offer it to incoming prekindergarten students as well. The program has evolved over time but continues to be offered to young Boston students each summer.

▶ Data on fadeout

"Fadeout" is a hot topic for the field and merits some discussion. Our data are mixed. We definitely see a decline in student gains from pre-K to third grade, but the impact of the BPS's pre-K program is still significant and substantial. In addition, we still see a gap between black and white students. Our reading fluency (as measured by the DIBELS) data also demonstrate that children who attend K1 score better than students in other pre-K settings and that fewer of them slip into the at-risk category between kindergarten and second grade, so K1 attendance definitely provides some insulating. That said, our data on instructional quality reveal that first through third grade instruction needs improvement, much like preschool and kindergarten did in 2006 (see Figure 1), and hence we have shifted our focus there.

Figure 1. Differences in quality of literacy instruction K-3 (2012).

K-3 Grade Difference — Inadequate — Adequate — Good

ELLCO LANGUAGE ENVIRONMENT
includes the discourse climate in the classroom, opportunities for extended conversations, and efforts to build vocabulary

	K2	G1	G2	G3
Good	58%	29%	50%	40%
Adequate	37%	29%	32%	30%
Inadequate	5%	43%	18%	30%

ELLCO BOOKS AND READING
includes the characteristics of books available and the development of reading fluency, phonics, phonemic awareness, vocabulary, comprehension

	K2.	G1.	G2.	G3.
Good	63%	33%	32%	25%
Adequate	32%	43%	45%	30%
Inadequate	5%	24%	23%	45%

Source: Department of Early Childhood, Boston Public Schools.

KEY LESSONS

From over a decade of work connecting research to practice, we have drawn a set of key lessons that may be of use to other programs.

First, there are natural tensions in a research-practice partnership. Rigor and timeliness often conflict; careful studies can take years, while policy and practice decisions are often made in a matter of weeks or months. As one example, around 2010, a critical decision the district faced was whether to pursue NAEYC accreditation for all district elementary schools. This accreditation process is intended to improve program quality by ensuring that participating early childhood programs meet a set of 10 program standards focused on four main domains: children, teachers and staff, management and administration, and family and community relations. Though NAEYC accreditation is widely considered a marker of quality by the early childhood field, studies have produced limited empirical evidence that it has positive effects on classroom quality and child outcomes (Minnesota Department of Human Services, 2005; Whitebook, Sakai, & Howes, 1997). Accordingly, in 2008, using available district data, we examined whether undertaking accreditation was associated with higher classroom quality in the group of early adopters of the approach in the district. Importantly, schools had selected into accreditation, and the level of rigor we would have preferred was not possible in time to contribute to the district's decision-making process, but we found that NAEYC accreditation was associated with meaningful improvements in classroom quality (Sachs & Weiland, 2010). The district subsequently used the results of this analysis as one piece of evidence in making its decision to expand NAEYC accreditation to more district schools. Analyses in 2010 and 2015 also examined the role of NAEYC accreditation in the district; the 2015 results led to a shift in NAEYC work that emphasized cognitively demanding tasks for students.

Some questions are too academic in the department's view; that is, they might benefit the field but not the department. It turns down ideas from Weiland and others that fall into this category if they represent a burden without benefit for the district. Conversely, sometimes the department has had a question or a "need to know" that is either not of interest to academics or not publishable. Weiland and her team have generally taken these on just the same; their view is that to be good citizens and partners and to learn as much about the district as possible, it is important to address them. Finally, a common issue in our work has been that available funders are willing to heavily fund either the research or the program but not both. Research-practice partnership usually requires both, and managing this issue has meant cobbling together sources of support as best we can.

Second, planning matters. In September 2007, after 3 months of working with the department, Weiland prepared a memo that included a list of all data collected by the district relevant to the department, study designs that could be appropriate for answering the department's questions, and an overview of what external funding would be required to collect other types of data. This early exercise—shared and discussed with the department and the BPS director of

research—helped create a strategic plan for the kinds of questions our research partnership would address and when. A key question, for example, was whether the program was ready for an impact study and what funding would be available to carry it out. In accordance with the literature, we jointly determined that 2 years after the implementation of the district's curricula and biweekly coaching was a good time to determine whether the new model was working. The subsequent study—funded by the Institute of Education Sciences—showed that the model had the largest impacts of any large-scale prekindergarten program to date. These impacts were apparent in both outcomes directly targeted by the program—language, literacy, math, and socioemotional skills—and in a domain that was not directly targeted (executive function) but that is developmentally linked to growth in other domains (Weiland & Yoshikawa, 2013). It was critical that this evaluation was conducted when the program was ready and not before the new changes had had time to take root. A research strategic plan also helped us to be clear about which data would be used for continuous quality improvement and how, as well as how the research and data fit together.

Third, what you don't do is as important as what you do. Importantly, we collect less data than many programs do, particularly teacher-collected data. The department's philosophy is that teachers should focus on teaching, and it has pushed back against state requirements for teachers to collect data via the formative assessment systems used in most pre-K programs nationally. Weiland reviewed the literature on these systems for the department, and she concluded that there is very little rigorous evidence they provide reliable, valid data or that they change teachers' practice. Such systems require teachers to collect lengthy data on every child in their classrooms, several times a year, and they generally require paying an administrative per child fee to the licensing company. Instead, we have relied on a sampling approach and limited teacher-collected data as well as short direct assessments of child language and literacy that use well-validated, reliable measures.

Fourth, data helps you work smarter. I opened this section by recounting the inauspicious beginning of data use in the Department of Early Childhood that the scary headline on the front page of the *Boston Globe* broadcast to the community. Those very public results caused the department to slow down the pace of its expansion and invest in quality. The next time that it attempted something so ambitious as launching a preschool program, it had learned to build in data and careful piloting from the beginning. Specifically, in 2012, the department was asked to expand its model to community-based preschools in Boston. Accordingly, it carefully built in a pilot of its model in this new context and also conducted a pilot study that included observational quality measures, surveys, and interviews of key stakeholders. After 2.5 years, the results were disappointing. While quality initially increased after coaching and curricula were implemented in the first 1.5 years, these gains were not sustained, and the quality of the community-based organizations remained lower than that of BPS classrooms (Yudron, Weiland, & Sachs, 2016). The pilot study identified six barriers that contributed to implementation failure, including lack of common planning time, teachers' retention of old curricula, teacher attrition from community-based organizations, too many 3-year-olds in a program targeted to 4-year-olds, and no start time for instruction.

These barriers are being addressed—that is to say, data are helping us get smarter. The department capped the number of 3-year-olds allowed in each classroom to approximately five out of 20 students, standardized the pay increases across community-based organizations so that participating lead teachers in them receive salaries equivalent to those of BPS prekindergarten teachers, and required common planning time. The department also modified the PD it offers to community-based organizations to better incorporate their teachers into district training. Another research team (Abt Associates) is evaluating this new model and expansion effort and sharing data with the department. Findings from the first year of implementation were encouraging, and research continues (Checkoway, Goodson, Grindal, & Hofer, 2017). The pilot project and its associated research components have operated as intended in this respect—that is, as part of a continuous quality improvement system—despite somewhat disappointing overall quality changes in the organizations in the pilot project. In our view, improving preschool nationally requires more such careful program piloting and research to pinpoint specific, practical barriers to program quality improvement.

Fifth, it is important to create strategic plans, and to stick with them. Strategic plans are very effective, as they let people know what you are trying to do and how they can help. I have had many, many bosses and partners come and go in 12 years. Having a clear strategic plan with a roadmap and deliverables of what you have done and what you want to do is critical. As part of this process, you should collect data and make adjustments along the way. The data will challenge you, but the data will also provide opportunity. As part of our approach of using data to inform the program, we have created two strategic plans; the first lasted 10 years, and the second is set for 5 years. For us, creating a strategic plan with an embedded holistic theory of change is critical. Prioritizing how we should spend our time and identifying what we think are the effective strategies both help to build consensus and to provide direction for the staff. They also help to orient new staff, leadership, funders, and other stakeholders and allow them to get to know what we are doing.

I spend much of my time setting up structures and finding resources to get the work done. On my end, I usually set up a new project—such as Boston K1DS (which was subsequently supported by a federal preschool expansion grant and is now a city-funded universal pre-K program), a first- and second-grade curriculum, an Institute of Education Sciences longitudinal study, or, most recently, a childhood observational assessment—and then once it's up and running I will move on to the next. Our most recent theory of change is that all children will become internally driven learners, able to read, write, reason, solve problems, and communicate effectively by third grade, and that the BPS will close the achievement gap if we can:

- align our work with the BPS vision, implementation plan, and instructional vision;

- expand the early childhood vision to early elementary grades (first to third);

- use data to consistently improve our curriculum, PD, coaching, and assessments;

- target PD and coaching as a way to make specific changes in instructional practice;

- collaborate with teachers, instructional leaders and other departments;

- build capacity for high-quality pre-K in community-based organizations;

- expand out-of-school time programming to support working families; and

- leverage partnerships to sustain our capacity and share our findings.

Our first strategic plan focused on establishing early childhood systems in the BPS, while the second one is focused on a system to support greater expansion into community-based programs for preschool and for altering the first- and second-grade curriculum. Since our current administration is more aligned with approaches centered on coherence building and instruction and collaboration, we are spending more of our time thinking about how to capitalize on departmental interdependence so that we aren't doing the work all on our own.

Sixth, the curriculum needs to keep pace with the students. One of my big takeaways from this job is that even if you run a high-quality pre-K program with strong results, you will lose momentum in student gains if it doesn't keep up. Our curriculum history is robust:

- In 2006, we selected Open the World of Learning (OWL) and Building Blocks.

- In 2010, we wrote the Focus on K2 curriculum.

- In 2012, we re-wrote the Focus on K1 curriculum.

- In 2014, we worked with Nonie Lesaux and the Harvard team and to write Focus on First Grade.

- In 2018, we completed our rewrites of Focus on First and Second Grade.

The math curriculum continues to use Building Blocks, and TERC[3] Investigations and is taught discretely.

Our curricula have several core instructional practices that are threaded across the grades. They all have daily expectations and follow a scope and sequence. Common P-2 instructional practices include:

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[3] Formerly known as Technical Education Research Centers

- facilitating discourse and feedback[4]

- experiential learning across disciplines[5]

- consideration of variance in development, processes, and perspectives[6]

- promotion of active agency and autonomy[7]

- documentation of teaching and learning

We purposely aligned this work with the district's essential practices to allow administrators to see the connections between early childhood practices and district initiatives. In addition, we have aligned the practices with the Classroom Observation Tool (CLASS) and with district's teacher evaluation system. The curricular components we use to facilitate these instructional practices include:

- centers (called "studios" in later grades)

- thinking and feedback, a protocol for sharing work in centers

- theme (4 to 6 units per grade)

- interdisciplinary topics in science and social studies that are literacy focused

- core read-alouds that are read multiple times

- vocabulary development

- culminating projects

- phonics programs (kindergarten to second grade)

- storytelling and story acting

- literacy centers that are dedicated to small group literacy work

- discrete math time using Building Blocks and TERC Investigations

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[4] https://depts.washington.edu/cqel/PDFs/DickinsonTeacherChildConvers.pdf, http://www.wbur.org/commonhealth/2018/02/14/mit-brain-study.

[5] http://www.ascd.org/publications/books/61189156/chapters/The-Growing-Need-for-Interdisciplinary-Curriculum-Content.aspx.

[6] http://www.pz.harvard.edu/projects/multiple-intelligences.

[7] http://www.earlychildhoodnews.com/earlychildhood/article_view.aspx?ArticleID=607.

Underlying the design of the curriculum are principles of backward design and those of the Universal Design for Learning framework, as well as paying particular attention to culturally sustaining practices. We are working on:

- writing

- programs that link school to home

- observational assessment

- dual language platforms

- overall coherence for pre-K to second grade, with a particular focus on English Language Arts standards

You can explore any of our curricular and other materials on our early childhood website: (https://sites.google.com/bostonpublicschools.org/earlychildhood.)

Seventh, use NAEYC accreditation as a driver to set quality at the school level. When I was at the Department of Education administering preschool grants, NAEYC accreditation was a requirement for programs to receive a grant. The notion was that a nationally recognized outside organization had a better chance of validating quality than the local community or the state government (e.g., via QRIS). When I accepted the job at the BPS, one of the first thresholds of quality I mentioned to the mayor and superintendent was accreditation; it helped that accreditation was supposedly a requirement to receive a $2 million grant that added funds for a part-time paraprofessional in kindergarten classrooms. Although the requirement was not truly mandated, I used it as tool to underscore the importance of quality at the district level. This is a good example of how state policies can align to help improve programs.

In 2007 we started our accreditation work in earnest in 15 schools. We intentionally selected schools that ranged in size, that posed different challenges to procuring accreditation, and that had different levels of motivation with respect to earning accreditation. Initially we hired outside "mentors" who had worked with community-based programs, but we quickly learned that this was not our best strategy. We found that some of the mentors would do all of the work for the schools, not allowing them to swim on their own. We also found that too many of the mentors were treating the accreditation criteria as a checklist and not as reflective practice necessary to sustain change We decided to change our partnership with outside mentors structurally in two ways: we partnered them with a BPS coach, and we held monthly meetings with the BPS coaches and mentors to calibrate the work. We also developed an NAEYC methodology that moved the work to a deeper and more reflective space than the checklist approach. It is important to keep in mind here that while piloting work in a district is a luxury that allows you to learn with schools, there can be drawbacks, as there is urgency to the work and the possibility of a change in course direction in leadership or funders.

The costs of NAEYC supports in Boston are not trivial. We spend around $6,000 per classroom each year, and it usually takes 3 years to achieve accreditation. We now have over 40 accredited schools. To fund this work, we have used a combination of district and private money.

We are now at a crossroads with the NAEYC. Our early childhood programs go up to second grade, but the NAEYC is primarily focused on pre-K and kindergarten. As a department that is now responsible for 15,000 students, 70% of whom are on free and reduced lunch plans, we need a validation system to support all of our early childhood students. We are currently thinking through our options: maintain (but perhaps expand) the NAEYC system, adopt another K-12 accreditation system, or develop our own.

Eighth, whether degrees are critical for education workers is a fraught issue. A large number of early education workers lack bachelor's degrees, and less than a sliver have master's degrees. The work of educating and cultivating young learners is complex. Every day we ask teachers to emotionally support children, facilitate their conceptual knowledge, and crack the complex codes of reading, writing, and math. This work requires creativity, flexibility, observation, reflection, classroom management, planning, content knowledge, and an ability to respect and understand a variety of cultures that influence behavior and learning styles. Teaching is hard, and currently the data indicate that for pre-K to third grade we are not doing it well. National studies that have been conducted using the Classroom Assessment Scoring System place teachers somewhere in the 3s (on a scale of 1-7) on instructional supports, conceptual development, and language modeling.

Perhaps 20 years from now we will wonder how this work was ever done by anyone with less than a master's degree and a 2- to 4-year residency, but in today's reality the field is reluctant to require degrees and has no preservice placement requirement. The reluctance comes from the paucity of evidence around degrees, fear of losing diversity, and difficulty in finding qualified staff who are willing to work long hours for little pay. Also, people know intuitively that a degree does not make a teacher. Rather, it is in part a matter of personality traits, though it takes much more than personality; it also requires, for example, reflection, planning, and persistence.

That many early education teachers do not have degrees is also in my view connected to the fact that early education and care are often born from programs that are designed to help parents work and that are supported either through subsidies or by parent fees. Both sources of funding limit the ability to pay teachers and both pit access against quality. To be sure, the growth of the universal preschool movement is changing that, but progress is slow. To mitigate this problem, I believe preschool and its related educational requirements/certifications and compensation need to be included under the auspices of public education. This does not necessarily mean that preschool has to be delivered by the public schools: programs in New Jersey, Tulsa, New York City, and Boston offer some examples of successful mixed-delivery programs. Formally linking public schools and early education programs

> **Formally linking public schools and early education programs will not only improve compensation, PD, and supports but will also provide many more opportunities to create meaningful linkages with birth to third grade programs and to transform public education from kindergarten to third grade.**

will not only improve compensation, PD, and supports but will also provide many more opportunities to create meaningful linkages with birth to third grade programs and to transform public education from kindergarten to third grade.

Last, creating a pre-K model for community-based programs is crucial. When the BPS opened up free preschool to 4-year-olds in the city it created an economic challenge to community-based preschool programs. (Preschool is the most economically sustainable due to large ratios). The BPS quickly became a large part of the market, moving from serving around 10% of 4-year-olds to serving 55%. Teachers with BA degrees often applied for BPS jobs over community-based program jobs. Compounding the problem was that families who wanted a more "desirable" school had to apply to preschool (K1) in that system, as it increased their chance of getting their child enrolled in this school later on. This dramatic change was a disruptive influence and created tension between community-based organizations and the BPS. It also put families in the challenging position of having to choose between access, quality, and their child's K-12 experience.

The new mayor is moving in the direction of expanding preschool programs in both the public schools and in community-based programs. To assure families of equity in quality, the mayor has designated a task force to oversee the design of a mixed-delivery system. We are excited about creating a "connective" system between community-based organizations and the BPS, as it would help programs develop meaningful pathways for students that would allow information to go from teacher to teacher and directors to principals, thereby improving overall communication to families. The opportunity for schools and community-based organizations to become more interdependent on one another is also exciting; for example, if a program is funded then families in community-based organizations would come off of the BPS waitlist. Finally, this might allow us to help support 0-3 programming, which is largely structurally ignored by the public school system.

I am often asked about the cost of public schools versus cost of community-based programs, as policymakers want to weigh cost and benefit and/or how much "quality" costs. The challenge of answering these questions is that the costs to the BPS and each city and town are relative to their context. The work in community-based programs, with coaching, BA-comparable salaries, and 12 months a year for 8 hours a day, costs the same per child as that in the BPS system, if not more. In any event, the current state and federal reimbursement rate is around 60% of that cost, so much more work will have to be done to combine (or braid) funds to cover the real price of investing in early childhood education. Our current universal pre-K budget is around $11,000 per child for community-based organizations, with an additional $7,000 coming from state subsidies to cover wraparound services and nonschool days. The universal pre-K program pays teachers BPS starting salaries and provides access to comprehensive services.

CONCLUSION

My motivation for writing this chapter is to help other programs think through the steps necessary for change, which include being systematic, collecting data, staying on task, and giving staff room to grow and solve problems. That said, our team will change course and revise our strategies, methods, and partners as needed. But we do so within a framework we created for ourselves that is centered on curriculum, professional development, coaching, and partnerships.

Finally, I would like to thank the leadership of the BPS for their support of the work. I would also like to give a large thank you to the staff of the Department of Early Childhood; we have a small, determined group of people, and the focus and passion they give to their jobs and ultimately to students is tremendous. They have an incredible wealth of knowledge and expertise, and day in and day out they show themselves to be stubborn, humble, and true leaders in the field.

References

Bardige, B., Baker, M., Mardell, B. (2018). *Children at the center: Transforming early childhood education in the Boston Public Schools.* Cambridge, MA: Harvard Education Press.

Borman, G. D., & Dowling, N. M. (2006). Longitudinal achievement effects of multiyear summer school: Evidence from the Teach Baltimore randomized field trial. *Educational Evaluation and Policy Analysis, 28*(1), 25-48.

Checkoway, A., Goodson, B., Grindal, T., & Hofer, K. (2016). *Year 1 Massachusetts Preschool Expansion Grant (PEG): Evaluation Report.* Cambridge, MA: Abt Associates.

Entwisle, D. R., & Alexander, K. L. (1992). Summer setback: Race, poverty, school composition, and mathematics achievement in the first two years of school. *American Sociological Review, 57*(1), 72-84.

Jacob, B. A., & Lefgren, L. (2004). Remedial education and student achievement: A regression-discontinuity analysis. *Review of Economics and Statistics, 86*(1), 226-244.

Jan, T. (April 7, 2007). Boston preschools falling far short of goals, study says. *Boston Globe.*

Minnesota Department of Human Services (2005). *School readiness in child care settings: A developmental assessment of children in 22 accredited child care settings.* St. Paul, MN: Minnesota Department of Human Services, Children and Family Services.

Sachs, J., & Weiland, C. (2010, September). Boston's rapid expansion of public school-based preschool: Promoting quality, lessons learned. Y*oung Children, 74-77.*

Weiland, C., Ulvestad, K., Sachs, J. & Yoshikawa, H. (2013). Associations between classroom quality and children's vocabulary and executive function skills in an urban public prekindergarten program. *Early Childhood Research Quarterly, 28*(2), 199-209.

Weiland, C., & Yoshikawa, H. (2013). The impacts of an urban public prekindergarten program on children's mathematics, language, literacy, executive function, and emotional skills. *Child Development, 84*(6), 2112-2130.

Weiland, C., & Yoshikawa, H. (2014). Does peer socio-economic status predict children's gains in receptive vocabulary and executive function in prekindergarten? *Journal of Applied Developmental Psychology, 35*(5), 422-432.

Whitebook, M., Sakai, L., Howes, C. (1997). *NAEYC accreditation as a strategy for improving child care quality: An assessment by the National Center for the Early Childhood Work Force.* Washington, DC: National Center for the Early Childhood Workforce.

Yudron, M., Weiland, C., & Sachs, J. (2016). BPS K1DS: *Piloting the Boston Public Schools' prekindergarten model in community-based organizations.* Boston: Boston Public Schools. http://bpsearlychildhood.weebly.com/uploads/1/0/1/3/10131776/bpsk1ds_final_report_feb2016_11.pdf.