

Practices Worthy of Attention
Asset-Based Instruction
Boston Public Schools
Boston, Massachusetts

Summary of the Practice. Boston Public Schools has made asset-based instruction one of its priorities in its efforts to improve the quality of teaching and learning. The premise of asset-based instruction is nurturing a positive approach to learning—recognizing students’ strengths and helping students feel they can contribute to their own educational growth. Boston is building on its successful use of coaching to improve teacher practice and student performance, working asset-based instruction into the established coaching process.

Need. Many marginalized students believe that they are “bad at math” or that they are poor students in general. Boston wants these students to realize that they can learn mathematics in ways that are meaningful to them when they are supported by teachers who believe in them.

Goal. The goal of Boston’s work with asset-based instruction is to provide another layer of support and interaction that can be modeled for secondary mathematics teachers by mathematics coaches and in turn translated into regular teacher practice. Capitalizing on teachers’ and students’ strengths provides a cultural shift in the way teachers interact with one another and with their students, which research shows leads to positive self-efficacy and improvement in performance.

Demographics

Boston Public Schools serves grades K–12, with 57,827 students enrolled for 2006–2007. The dropout rate for the entire school district is 8.4%. Numbers of students enrolled or dropping out in previous years were not available from the district or the state, but Table 1 shows the percentage of students enrolled for 2004–2005 and 2005–2006 by race/ethnicity, limited English proficiency, and economic disadvantage. Black students comprised the majority of the student body (around 42%), followed by Hispanic students (whose percentage increased by 2.4% over the two-year period), and then white and Asian American students. In 2005–2006, about 73% of students in Boston Public Schools were classified as economically disadvantaged and 16% as having limited proficiency in English.

Table 1. Boston Public Schools Enrollment Data

Demographics	Academic Year	Percentage Enrolled
Asian American	2004–2005	9.0
	2005–2006	8.5
Black	2004–2005	46.0
	2005–2006	42.8

Table 1, continued

Demographics	Academic Year	Percentage Enrolled
Hispanic	2004–2005	31.0
	2005–2006	33.4
White	2004–2005	14.0
	2005–2006	13.6
Limited English Proficient	2004–2005	22.9
	2005–2006	16.0
Economically Disadvantaged	2004–2005	*
	2005–2006	73.1

Note: The single asterisk (*) notes that data were not available.

Description of the Practice

On-site coaching has been an integral part of Boston Public Schools since the district began its reform efforts in 1996–1997 with its first five-year reform project called Focus on Children. (Since then, the district has revised its approach every five years, with each overall effort being called Focus on Children, e.g., Focus On Children II). The first year of coaching in this project included “change coaches,” whose task was to help reform each school as a whole. Change coaches visited schools once a week to develop an instructional leadership team of teachers and the principal, who then worked together to identify a schoolwide focus as well as analyze student work. In the second year, content or literacy coaches also visited schools once per week to help individual teachers work on improving student literacy and to conduct professional development on literacy at the campus.

Although teachers and principals valued the coaches’ roles and impact, the literacy coaches did not feel they were making the impact they could, given the coaching model. An evaluation of the district’s coaching by researchers at Education Matters in 2000 indicated that the change coaches were helping improve the culture in schools and collaboration among teachers. However, the evaluation report also indicated that the literacy coaching model was inefficient and ineffective, since it was not contributing to teachers’ collaborative learning in literacy.

In response, the district developed a professional development model, which they called “collaborative coaching and learning” (CCL), in 2001 as they began their second five-year Focus on Children project. The coaching approach of CCL explicitly encouraged “a culture in which teachers visit each other’s classrooms to observe, participate in, and share best practices” (Boston Public Schools and Boston Plan for Excellence *Coaching Resources Binder 2001–2002*, as cited in Neufeld & Roper, 2002, p. 3).

Mathematics coaches spent 45–60 minutes each week with individual secondary mathematics teachers to talk about instructional issues, including how to incorporate more effective,

research-based practices in their teaching. Coaches could also spend an optional 60–90 minutes each week with mathematics teachers to observe a lesson and participate in pre- and post-conferences about the lesson with the teacher. Coaches followed up with individual mathematics teachers as the teachers incorporated new teaching techniques to improve their students' mathematics performance.

By 2005–2006, the district's secondary mathematics team had been involved in coaching for six years, with 15 coaches and three district-level program directors in secondary mathematics serving 500 mathematics teachers in 60 schools. During 2005–2006, this team tried a different approach to interacting with secondary schools. In previous years, the coaches were assigned to schools based on the schools' performance on the statewide exam, but in 2005–2006, the coaching team decided instead to work on developing capacity in each secondary school in Boston by creating a new community of leaders within each school. Principals would identify up to three mathematics teachers as leaders (based on the teachers' leadership, mathematics, and instructional capacity) with whom coaches would partner for the entire school year, observing their classes and engaging in pre- and post-observation discussions that would allow teachers to talk about what they planned to do in a lesson and reflect on its effectiveness afterward. These teacher-leaders would then provide similar types of coaching to other teachers in their schools.

The secondary mathematics coaches implemented their new plan for developing capacity in secondary schools with an approach that the district has begun calling asset-based instruction. Asset-based instruction encourages teachers to focus on each student's strengths rather than deficits. When working with teachers, coaches model the asset-based approach by highlighting instructional experiences that enhance teachers' understanding and competence in teaching mathematics. This approach builds on teachers' strengths, helping them see how they can then use those same techniques in engaging their students.

Boston Public Schools partners with a local education foundation, the Boston Plan for Excellence, to evaluate the district's performance and work on solutions to improve the quality of teaching and learning in the district. The Boston Plan for Excellence reports have indicated there is strength in the coaching model, so each year Boston Public Schools has provided improved school-based coaching as part of its continuing reform efforts. For instance, the Focus on Children goals for 2006–2007 list six instructional priorities, with the first priority being asset-based instruction (Boston Public Schools, 2006). The secondary mathematics team has been using asset-based instruction since 2005–2006, and has served as the inspiration for districtwide adoption of the practice.

By modeling asset-based instruction techniques, through feedback that coaches provide teachers, coaches can influence the ways teachers interact with students. Asset-based instruction is derived from literature outside of education on asset-based thinking, which encourages focusing thoughts on what currently is working and what is available rather than what it is missing, which requires a cultural shift in the way people interact with one another. Asset-based thinking “is intended to affirm, and to build upon, the remarkable work already going on” (Kretzmann & McKnight, 1993, p. 7). Cramer and Wasiak (2006) describe asset-based thinking as a way of life:

Asset-Based Thinking is ... based on direct, systematic observation into how a growing minority of highly effective, satisfied people thinks, feels and acts. Asset-Based Thinking takes “positive thinking” to a whole new level of engagement. While positive thinking calls for a positive attitude about life and the future, Asset-Based Thinking calls for positive action and traction in the present moment. (p. 15)

Buckingham and Clifton (2001) list two assumptions that lay the foundation for building a strength-based organization. These two assumptions exemplify asset-based thinking as Boston’s coaches have developed it with teachers: “Each person’s talents are enduring and unique. Each person’s greatest room for growth is in the areas of his or her greatest strength” (p. 7) Asset-based thinking can be directly applied to classroom instruction under the influence of coaches and teachers. Instead of having students believe in a negative self-fulfilling prophecy, where they may believe they cannot do well in school, asset-based thinking gives teachers perspective on how they can encourage students to do better by letting them know it is expected of them, while also building on their academic strengths.

Literature on asset-based thinking tends to back up earlier education research on the kind of instruction that encourages student motivation. For example, students with teachers who encourage autonomy have a higher likelihood of staying in school compared with students of controlling teachers (Vallerand, Fortier, & Guay, 1997). In addition, understanding the affective reasons that students lack motivation is essential for improving students’ motivation engagement in class (Legault, Green-Demers, & Pelletier, 2006), especially with the prevalence of low self-confidence and motivation in mathematics (Kloosterman, 1988).

Coaches in Boston ask mathematics teachers to identify daily mathematics objectives that allow students to measure their own progress throughout a lesson. Coaches also try to ensure that lessons have different access points for the students to connect with the curriculum. Some strategies teachers are coached on involve guiding students to think about and connect to their prior experiences in mathematics, both in and outside of school. Teachers build in time at the end of each lesson for students to reflect on what they learned and accomplished in terms of concepts, skills, and learning strategies, and to think about how they will apply this newfound knowledge to future lessons and learning.

In the pre- and post-discussions, coaches talk with teachers about student-centered coaching and the strategies teachers can use to take advantage of known strengths of each student and the class as a whole. The teacher and coach discuss the importance of both affective and cognitive experiences in helping motivate students, again with the perspective of building on students’ strengths. They talk about how to improve ability beliefs, which include students’ self-confidence and self-appraisal about their ability to engage in mathematics learning. Together they also identify patterns of students’ strengths by analyzing student work and using assessments. The coach reinforces how to motivate students with genuine positive support and encouragement as often as possible. The teacher and coach also identify places in the curriculum where students are currently successful and use three steps to map out a lesson that guarantees at least one successful experience for each student.

In the first step, students talk about their previous experiences related to the mathematics topic of the new lesson and practice their current knowledge and skills before engaging in the

lesson. The purpose of this first step is to build students' confidence in their capacity to learn and do mathematics and to identify a competency baseline in the mathematics for teachers to build on. In the second step, teachers model the concept in a lesson, explicitly connecting the strengths identified in the first step to the new topic. The last step includes student reflection. Teachers have students take notes in steps 1 and 2, and in step 3, students annotate their notes to check for their own understanding, which helps them develop the capacity to take charge of their own learning.

In Boston's 2006–2007 *BPS Instructional Priorities* document, the district has listed six instructional priorities, followed by the indicators that can be used to measure each priority, one of which is asset-based instruction. District mathematics administrators have developed a secondary mathematics observation guide to help coaches rate the presence of positive indicators of those priorities in the lessons they observe. The same guide can be used for up to nine teachers a coach observes in a single school visit. The purpose of the guide is to “identify the presence of practices that increase opportunities for student success.” The guide helps coaches focus on what teachers provide for students throughout a lesson. For instance, the guide asks if there are easy-to-follow routines in place to prepare students to start a new topic or if, during the lesson, there are activities that help students recall prior experiences related to the topic.

Coaches also write qualitative notes that model the asset-based instruction “talk” by pointing out the strengths of the teacher and the lesson observed. Coaches can measure the asset-based instruction goals through two main indicators. The first indicator is the classroom culture and how students engage with one another and their teacher. A positive indicator would be one that showed students actively listening and engaging with one another, positive and supportive language in the classroom, and celebration of hard work and academic achievement. The second indicator is specific to the lesson, looking at how instruction and student work is differentiated to individual students' strengths. In addition, teachers in Boston are expected to create a classroom environment with routines and practices that help students prepare for new topics and celebrate hard work and academic achievement in each lesson.

The coaches work with district-level secondary mathematics program directors to create an organized and coherent way to interact and work with teachers. The program directors meet several times per week after they observe coaches, teachers, and schools to informally discuss their observations and how they could better model the use of asset-based instruction for the coaches and teachers they work with.

Results

Secondary mathematics district staff use the observation guide and observe mathematics teachers at several points in the year. Over the past few years, the district staff have given the filled-in observation guides to each school principal to allow him or her to see how well teachers are engaging students. Boston currently does not have a central repository of observation guides that could be examined to see if there is a link between higher use of asset-based instruction and student performance.

Table 2 lists Boston Public Schools results on the mathematics sections of the Massachusetts Comprehensive Assessment System (MCAS) for grades 6, 8, and 10 for by race/ethnicity.

Table 2. Boston Public Schools Results on the Massachusetts Comprehensive Assessment System Mathematics Exam

Demographics	Academic Year	Percentage At and Above the Proficient Level		
		Grade 6	Grade 8	Grade 10
All Students	2002–2003	18	21	37
	2003–2004	17	23	42
	2004–2005	23	23	39
	2005–2006	20	23	53
Asian American	2002–2003	63	64	84
	2003–2004	55	66	85
	2004–2005	63	64	86
	2005–2006	60	63	92
Black	2002–2003	11	11	23
	2003–2004	11	13	30
	2004–2005	14	12	24
	2005–2006	11	14	41
Hispanic	2002–2003	15	12	27
	2003–2004	12	15	34
	2004–2005	17	16	30
	2005–2006	15	14	45
White	2002–2003	37	44	63
	2003–2004	38	48	64
	2004–2005	44	45	67
	2005–2006	37	46	76

From 2002–2003 through 2005–2006, performance of all students and all subgroups was stable for grades 6 and 8, while a steady improvement could be seen on the grade 10 exams. Asian American students were outperforming all other students at each grade level, followed by white students, who were about 20–25 percentage points behind Asian American students. Black and Hispanic students were performing poorly overall, especially on the grades 6 and 8 exams.

Conclusions

Boston Public Schools' 10-year push for the use of content coaches as part of its educational reform is noteworthy, especially in the way the district continues to improve the coaching model based on yearly feedback. The concept of asset-based thinking as applied to instruction is a promising one for changing the culture of classrooms and teachers' interactions with students. If Boston's secondary mathematics coaches would use the observation guides as

official data (instead of leaving the guides with school principals), it would be a first step toward measuring how well individual teachers, schools, and the district are doing in implementing asset-based instruction. Observation data paired with student data could help define the possible relationship between asset-based coaching and instruction and student improvement.

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About *Practices Worthy of Attention: Local Innovations in Strengthening Secondary Mathematics*

Practices Worthy of Attention is a joint initiative of Achieve, Inc. (www.achieve.org), and the Charles A. Dana Center at The University of Texas at Austin (www.utdanacenter.org). The initiative is led by Pamela L. Paek, a research associate at the Dana Center, who, in 2006, examined 22 program, school, and district practices that showed promise—based on early evidence and observation—of strengthening secondary mathematics teaching and learning.

Our goal was to document practitioners' descriptions of *what is really happening* in the field to strengthen secondary mathematics education around the country. Thus, while the practice highlighted may be common, the specific structures and strategies used to implement the practice are worthy of attention. These initial investigations set out to mark these practices for future rigorous scientific inquiry by Dana Center and other researchers.

Ultimately, we hope to create a community of inquiry made up of university researchers working with administrators and teachers from featured schools and districts to more rigorously research how effectively these practices improve secondary mathematics learning for all students.

Reports and practice profiles. An executive summary details the methods for this initiative and analyzes themes. Two cross-case analyses discuss specific strategies for raising student achievement and building teacher capacity. Brief profiles describe each practice. All of these publications are available on our website at www.utdanacenter.org.

Data. In all cases, data about the practice were provided by the program, school, or district studied as part of a description of their practice. We did not independently analyze data gathered through a consistent assessment tool, and we did not evaluate their uses of data for measuring effectiveness. Thus, the data in the practice profiles are intended not to prove the practice's effectiveness from a research perspective, but to paint a detailed picture of the practice and what data were used by the program, school, or district to gauge how well it was working.

Theoretical frameworks. In some cases, district staff mentioned specific literature on theory or practice that they used when they developed the practice we highlight. In those cases, we cite that literature in our discussion of the practice.

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