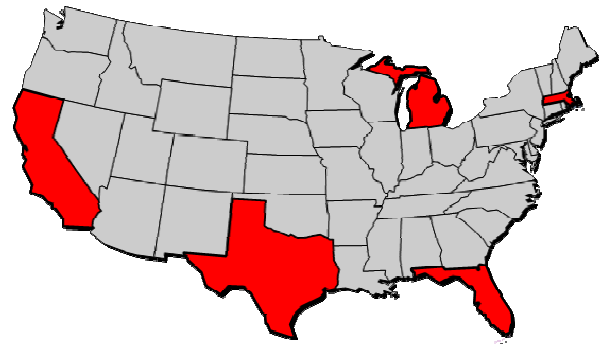




## CASE STUDY

# Core Practices in Math & Science: An Investigation of Consistently Higher Performing Schools in Five States

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### Introduction

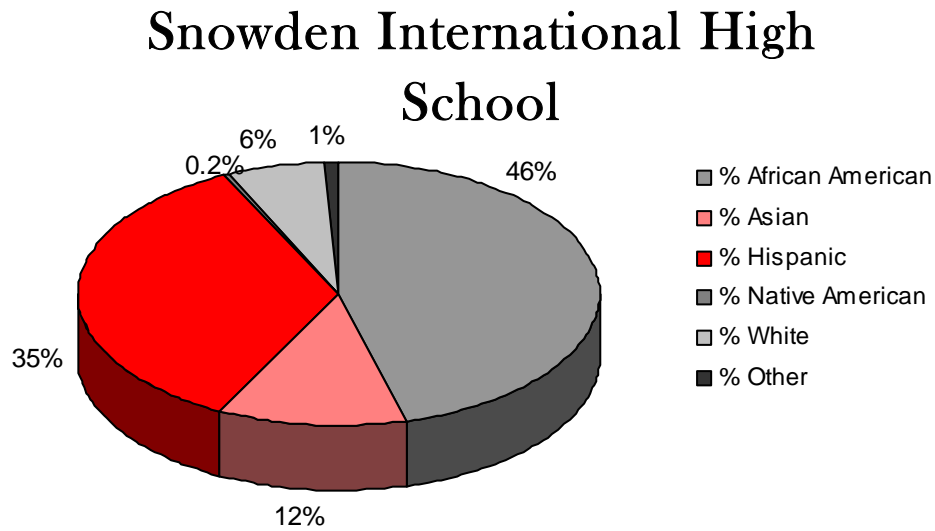
Since 1999, the National Center for Educational Achievement (NCEA) and its affiliated research teams have studied over 500 public schools across the country in an effort to identify and disseminate effective practices embraced by higher performing schools that distinguish their campuses from their average-performing peers. Building on the foundation established by this previous research, NCEA sought in the current study to focus specifically on educational practices in the areas of mathematics and science in five states: California, Florida, Massachusetts, Michigan, and Texas.

Criteria used in school selection in the current study included three years of state assessment data in mathematics and science (2004, 2005, and 2006), campus demographic make-up, percentage of economically disadvantaged students, school size, and geographic location. In addition, all of the schools selected for participation met the state and federal requirements for Adequate Yearly Progress (AYP) in 2006. Schools categorized as higher performing based on the selection criteria were those “beating the odds” with consistently better student achievement over three years, when compared to peer campuses with a similar student population. Therefore, a list of the state’s highest performing schools may contain schools different from those selected for this study.<sup>1</sup>

In order to illuminate the roles of different members in a school community, for each selected school, NCEA researchers interviewed district-level administrators, school administrators, and classroom teachers. To supplement

<sup>1</sup> For more detailed information about the school identification process and the list of higher performing schools included in the study, please see the full cross-case report at <http://www.nc4ea.org>.

**Figure 1: Student Demographics**



the interview data, researchers collected pertinent documents, observed secondary level algebra classes, and invited participants to take part in the NCEA *Self-Assessment* online.

## District and School Profile

The Boston Public Schools serves approximately 56,000 students in 144 schools. In 2006, The Boston Public Schools received the \$1 million Broad Prize for Urban Education. The district was a Broad Prize finalist from 2002 through 2005. Approximately 74% of Boston students are eligible for free and reduced-price meals. All high schools in Boston are citywide schools, with any student in the district able to apply to attend a particular school. The district uses a computerized lottery system to determine admission to most district high schools.

Snowden International School is a college preparatory high school with a focus on international studies and world languages. The school is housed in four separate buildings in the Copley Square area of downtown Boston. Of Snowden's 448 students, 66% are eligible for free and reduced-price meals. The majority of the school's students are African-American and Hispanic. Approximately two percent of Snowden students are English language learners.

Snowden's curriculum and graduation requirements reflect the school's dual focus on college preparation and international studies. All students at the school must take core academic courses for all four years, including four years of the same foreign language. Foreign language offerings include Spanish, French, Japanese

and Mandarin. There are no honors classes or remedial classes. Advanced Placement (AP) courses are available in Composition, European History, and Calculus.

As a strong proponent of higher standards, NCEA recognizes school efforts to move more students to the state’s higher standard of achievement by accounting for those students in the analysis of consistent higher performance. Tables 1 and 2 summarize performance at both the state’s proficient and advanced standards attained by the students at Snowden for the years of 2004, 2005, and 2006. The state averages included in the tables represent student performance among schools with a student population similar to Snowden particularly based on the percentage of economically disadvantaged students. In Massachusetts, the state department of education pilot tested the new high school science assessment in 2006 and did not release the collected student data. Therefore, high schools in Massachusetts were identified based only on their mathematics performance over three years.

**Table 1: Performance Trends based on Proficiency Standard**

	2004	2005	2006
Grade	10	10	10
Mathematics	40%	47%	64%
State Average for Similar Schools (Math)	30%	34%	42%

**Table 2: Performance Trends based on Advanced Standard**

	2004	2005	2006
Grade	10	10	10
Mathematics	7%	19%	26%
State Average for Similar Schools (Math)	10%	13%	18%

## Theme 1

### Student Learning: Expectations & Goals

All educators teach a rigorous, standards-aligned curriculum. Detailed curriculum documents and vertical teaming meetings help teachers plan instruction from the district curriculum.

- The district curriculum taught in the Boston Public Schools aligns closely with the state standards, known as the Massachusetts Curriculum Frameworks. The curriculum and associated curriculum documents provide detail about

how and when to teach each standard. In addition, all district-wide assessments and benchmark tests align with the state standards, providing further incentives for teachers to implement the district's written curriculum. Math and science teachers at Snowden International School reported that the standards-based curriculum helps ensure rigor in all classes. "Standards-based education has been really good for science" explained a science teacher. "It gets science teachers on the same pages and helps enforce high standards across schools and classrooms. No two teachers will teach science in exactly the same way, but at least now there's a feeling that all students are learning the same concepts, the concepts that they need to learn."

- Model lessons, curriculum frameworks, and pacing guides developed at the district level are accessible online through the district's "MyBPS" intranet. A math teacher explained that district-provided curriculum documents establish guideline for what must be taught and learned in each grade and subject, while allowing teachers multiple paths towards those outcomes. "One thing I appreciate about the pacing guides," he observed, "is that they give teachers some flexibility to differentiate instruction for students." A science teacher noted, "There are many different ways to teach the content that needs to be covered under the district curriculum. Teachers can still select the instructional practices and strategies that work best for them, as long as they cover the content."
- In the Boston Public Schools, students' preparation for advanced high school and college coursework begins in the elementary and middle school grades. According to a district administrator, the district's science department serves as a district leader in developing vertical alignment strategies. She explained, "Right now, the district is really looking to the science department to help the other district content areas develop and expand vertical teaming and planning. The science department has developed excellent teaming protocols, which allow teams of teachers across grade levels to learn more about curriculum and student expectations in each grade. The vertical teaming activities in science help ensure that teachers understand the skills and knowledge they need to teach in lower grades in order to prepare students for success in Advanced Placement, and eventually college-level work."

Teachers understand the importance of preparing all students to graduate from high school ready for college and skilled careers.

- Snowden's school curriculum and graduation requirements encourage all students to take the most rigorous coursework possible. For example, all students must complete math through Algebra II in order to graduate. Students must take four years of science, at least three of which must be lab

science. A school administrator reported that Snowden offers “as many AP courses as our budget allows, because past graduates have told us that AP courses are by far the best preparation for college.”

- Recent curriculum revision efforts ensure that the district maintains a focus on closing achievement gaps and meeting the needs of all students. A district administrator noted that this is a new initiative for the district, one that she hopes will gain additional traction in the years to come. “It is hard somewhere like Boston, where the district has received lots of recognition for their work, to encourage people to go back and critically evaluate their curriculum and curriculum materials. Districts always need to ask: ‘Is this working for all kids?’ Obviously we know what works for the kids we have already reached, but what can we do to better serve the students we haven’t reached before? There’s still work to be done despite all the dramatic improvements the district has made in the last ten years. This is an important and opportune time for the district.”

## Theme 2

### **Staff Selection, Leadership, & Capacity Building**

District human resource strategies supports the development and recruitment of promising teacher and school leaders.

- The New Principal Fellowship Program, a year-long, full-time fellowship program for aspiring principals, helps district administrators develop a cadre of highly-skilled, highly-trained school leaders. Though the program selects from both internal and external applicants, many Principal Fellows are former teacher leaders or instructional coaches from within the district who have decided that they are ready for the challenge of school leadership. Principal fellows complete a year-long residency with a high-performing principal mentor in Boston, and also take coursework in order to receive the Massachusetts Initial Principal License. They receive a stipend while participating in the program, in exchange for agreeing to work in district schools for a minimum of three years following the end of the fellowship. Explained a district administrator, “Principals who come to the district through the New Principal Fellowship program are members of a cohort of school leaders who provide each other with collegial support long after the completion of the program.”
- In the district’s “critical needs” areas, such as math, science, special education, and bilingual/ELL instruction, the district seeks to put career-changers and others who come to teaching through non-traditional paths on the fast track to certification. One especially successful program is the Boston Teacher Residency Program, a partnership with the University of Massachusetts at Boston. This program is a year-long, full-time teacher prep

program. Teachers first attend a summer institute, where they assist with and observe the district's summer school program and participate in intensive coursework. During the next school year, the program combines teacher licensure coursework at UMass-Boston with fieldwork experience. Participants work in classrooms, under a master teacher, four days a week. During the school year, they receive a living stipend of approximately \$12,000. All residents are loaned the full tuition charged for the program, and have one-third of the loan forgiven for each year they spend teaching in the Boston Public Schools after completion of the Residency.

Professional development and mentorship activities are anchored to school-specific instructional needs and academic goals. All support focuses on developing teachers' content knowledge and teaching skills, rather than simply reviewing school policies or procedures.

- Educators at Snowden International School develop base their professional development plan upon a careful analysis of their students' academic needs and skill gaps. The district requires teachers to participate in ongoing professional development related to district-selected instructional programs in math and science. Beyond these trainings, district administrators recognize that each of the district's 144 schools is unique, and allows them to tailor further professional development to school-specific needs. "Snowden's professional development plan is very teacher-directed." reported a school administrator. Before the beginning of the school year, teachers and administrators attend a planning retreat. During the retreat everyone discusses their professional development needs for the upcoming school year. For example, on a recent retreat, teachers and administrators decided that students' writing skills needed additional focus. School leaders took this feedback and developed a partnership with Harvard University to improve the quality of writing instruction. Harvard professors now work with Snowden teachers on to help them integrate writing lessons across the curriculum. Math and science teachers participate in the program, along with social studies and humanities teachers. Harvard professors work with the teachers in writing workshops, and then they also set up a writing center for students where Harvard student volunteers work one-on-one with students on their writing assignments.
- After teachers identify their professional development needs, they can access a wide selection of professional development course provided by the district, often in partnership with local universities. A science teacher at Snowden observed, "Professional development is often ineffective because it's not connected to what's going on in the classroom. In the Boston Public Schools, all the professional development offered to science teachers is directly related to classroom instruction. We get lots of training on activities-based and hands-on instructional practices, which are very useful, and very exciting. All

the training will be related to the district curriculum and pacing guides, and teachers will discuss how to use the professional development to improve their instruction. The training received by the science department is directly related to our school's relative success on the MCAS." Another science teacher observed, "Long term success at a school is related to strong content knowledge on the part of the teachers. Teachers constantly need to refresh their knowledge by taking classes at area universities and seeking out other professional development opportunities. All the Snowden science teachers do this regularly."

- All beginning teachers in the Boston Public Schools are paired with a mentor teacher in their school. Mentors, who receive a small stipend, frequently observe the teacher's classes and offer feedback during weekly meetings. A math teacher explained, "The mentor-mentee pairs review lesson plans together, discuss classroom management techniques and develop strategies to deal with any problems or concerns the novice teacher may be facing. Mentors are not evaluating the teachers, but rather supporting them." A district administrator noted, "There are often special challenges with math and science teachers, because so many are career changers who come to the district through alternative certification routes. They often need more support, so the instructional support provided by mentors becomes especially useful."
- To supplement existing mentorship programs and provide instructional leadership opportunities for outstanding teachers, district leaders launched the New Teacher Developer Program in 2007. Thirteen full-time New Teacher Developers provide classroom-based support to new teachers in over 50 Boston schools. The schools selected for participation were those with a high population of beginning teachers. Another 60 to 70 part-time Teacher Developers devote one half-day each week to mentoring novice teachers. Both full and part-time New Teacher Developers are hired from amongst the ranks of current district teachers. New teachers work each day with new teacher developers, reviewing a rigorous new teacher curriculum developed by district instructional specialists. "This program provides new teachers with the training and support they need during that first critical year on the job and is a key strategy to increase teacher retention in the district" explained a district administrator.

Frequent collaborative team meetings, both formal and informal, allow teachers to review student data and share ideas about curriculum and instructional practices across subjects and grade levels.

- According to Snowden teachers, the strongest support is provided by working with colleagues in grade level teams, also referred to as "clusters." Each grade level contains one or two clusters. Students in each cluster share the same math, science, English and social studies teachers. Teachers meet by cluster three times a week for an hour. Since these teams all share the same

students, they'll often review the academic and behavioral progress of individual students. A science teacher observed, "The teachers at Snowden are constantly discussing ways of working with particular students who may be struggling. We'll share ideas about different instructional practices or activities that might help us reach these students." In addition to the cluster meetings, teachers use common planning time to meet by department at least twice a month. In these meetings, they frequently analyze data from benchmark testing.

- A close-knit, supportive school culture allows teachers to share ideas about lesson-planning, classroom management, and other instructional issues. A teacher observed, "This support is informal but extremely effective. Snowden is such a small school that we talk about teaching constantly (in the hallway, during lunch) as well as in our cluster meetings and department meetings." Noted a school leader, "Faculty at Snowden have high attendance and tend to stay at the school for a long time. The entire staff at this school is really good at working collaboratively."

### Theme 3

## Instructional Tools: Programs & Strategies

Aligned instructional programs and resources address the academic objectives of the district curriculum while giving teachers the freedom to develop their own teaching style and respond to the needs of individual students.

- Instructional programs balance academic rigor with adequate scaffolding, allowing all students to access higher levels of instruction. Snowden math teachers reported that the district-adopted math program, Glencoe Math, provides excellent ideas and support for differentiating instruction. "For a small school with heterogeneous grouping in all classes, this flexibility is important" a math teacher noted. "A single math class at Snowden will often have special needs students who really struggle with the material sitting alongside students with high skill levels." Explained another math teacher, "The program and the program materials allow teachers to meet students at their current achievement level, and then bring them to a higher level."
- A school leader at Snowden noted that, though she uses the instructional programs adopted by the district, she also gives teachers the support they need in order to tailor instruction to the needs of their students. She explained, "I believe that the 'Snowden Way' involves supporting teachers while also allowing them to use their expertise. I'll supply them with the extra resources and materials they need to deliver instructions, though they still work within the instructional framework established by the Boston Public Schools." Observed a science teacher, "The level of support at Snowden is just excellent. On a shoestring budget, the headmaster and her administrative



team get the science teachers as many resources as they possibly can. While MCAS scores are, of course, important to everyone at the school, the headmaster doesn't pressure teachers just to keep test scores up. Everyone at the school understands that our real mission is to get students to meet the high academic standards we set so that these students will be ready for college."

- Teachers at Snowden have developed a set of proven instructional practices that allow them to reach students who may be struggling. For example, one strategy an Algebra I teacher has found to be helpful is writing out a problem step-by-step algebraically, and then writing out in English next to each step what is being done to the equation. For example "Add four to each side." She noted that students with special needs find this strategy be especially useful. In order to further close gaps in knowledge and skills, teachers at Snowden review Algebra I skills with 10th graders. Algebra is taught in ninth grade at Snowden, but an analysis of past MCAS scores showed that they need to keep students' skills fresh beyond ninth grade so that they could perform well on the state high school exit exam.

District and school policies encourage all students to pursue advanced coursework such as Advanced Placement, and provide the support necessary for students to succeed in advanced classes.

- Administrators in the Boston Public Schools believe that AP participation helps prepare students for success in college. The district science department has developed multiple strategies to bringing AP classes to urban students district-wide. Explained a district administrator, "The science department in Boston is really a leader in the field. In the past, the other content areas were focused on raising MCAS scores, but the science director knew that, for urban students, AP participation had more impact than for suburban students, because it provides external validation for their work." The science department works to prepare students the rigor of AP coursework before they even enroll in the class. Teachers participate in vertical teaming training to increase rigor across grade levels, and many AP teachers commit to teaching summer bridge classes. Students take summer bridge classes the summer before enrolling in advanced coursework to ensure that they have the necessary skills and knowledge to succeed in the Advanced Placement program. A district administrator noted, "Scores on the AP tests have increased the most in science, and to a lesser extent in math. Humanities and social science AP scores, on the other hand, have lagged behind where they should be."
- Students at Snowden International School do not take honors or remedial courses in any subject. Explained a school administrator, "Philosophically, we do not believe in tracking, and I think that honors, remedial, etc. can easily turn into tracking. Other than AP classes, all students take the same classes.

” In order to enroll in an AP course, students must have shown a high level of motivation in previous courses. However, AP courses are not limited only to students with high GPA’s. Final decisions about AP course placement are made by the school’s guidance counselor and the teachers. Noted a school administrator, “They’ll sit down together and discuss each student who has expressed interest in taking the AP class. If a student expresses a strong desire to take an AP class, we will nearly always allow them to enroll in the class.”

Across grades and subjects, all teachers use evidence-based instructional practices such as student-directed learning, hands-on activities, and the use of real-world examples to illustrate key concepts.

- The major mode of instructional delivery in the Boston Public Schools, across subject areas, is called the “workshop model.” Each class period is divided into three sections: 1) a mini-lesson delivered by the teacher on the objective of the day; 2) A conferencing phase where students work on an assignment related to the objective and teachers circulate around and work with students one-on-one or in small groups; and 3) a reflection phase, where the class discusses what they learned that day. Noted a district administrator, “the workshop model is intended to provide a balance between teacher and student voices. It’s an instructional model that gives students the ability to communicate and create. Math and science teachers at Snowden noted that the workshop model allows them to focus on developing the student’s ability to problem-solve, reason and communicate. Noted a math teacher, “None of the math teachers use direct instruction or ‘chalk and talk’ techniques very much, or at least not for more than a small part of each class period.” A science teacher similarly observed, “I really try to transfer responsibility for learning to students. I don’t like to answer a lot of questions in class, because I really prefer that students try to provide the answers. I go over assignments with them, but when students ask for the answer I try to have them figure out the answer as a class. When we do a lab, I let the students determine the most effective way to communicate the lab results: through a chart, a graph, a computer simulation, or a write up.” All the teachers agreed that they work to create a classroom environment where students feel safe trying to answer questions, make presentations, and do experiments, even if they make a mistake. “Mistakes are O.K., because you learn from mistakes!” a science teacher noted.
- Teachers at Snowden integrate real-world connections into their lessons to help students grasp math and science concepts. Teachers explained that they tap students’ prior knowledge and then draw connections between that knowledge and the math and science concepts being taught that day. A science teacher explained, “In biology, for example, the idea is that students need to see how scientific concepts can be observed in the real world. I have

my students work on some kind of project every single day that relates biology to real world phenomena. I want to move students away from memorization. All the learning theory suggests that knowledge is constructed. For students to learn, the concepts have to be related to their environment. Luckily, the Boston Public Schools have really embraced this idea, and they use a very activities-based curriculum with lots of labs and other hands-on experiences.” A school leader agreed, noting, “I encourage all math teachers to use hands-on instructional practices. Students need to ‘see it, hear it, touch it’ in order to understand concepts. Using these techniques has made a major difference in student achievement.”

## Theme 4

### Monitoring: Compilation, Analysis, & Use of Data

District benchmark assessments and other classroom assessments allow teachers and school administrators to identify gaps in student learning. This data informs revisions to lesson plans and instructional practices.

- The Boston Public Schools administers common formative and summative assessments across the curriculum and across grade levels. In grades one through eight, students complete quarterly benchmark assessments in math and literacy. In math and science at the high school level, students complete mid-year and end-of-course assessments. Similar district-developed assessments are also administered in reading, writing, and history. Observe a district administrator, “The high school benchmark testing program was really an attempt to replicate the same kind of benchmarking that had taken off in elementary and middle school practices.”
- Teachers use assessments as an opportunity to deliver instruction in critical thinking skills. When preparing students for assessments, teachers tell students that the process is more important than the final answer. A math teacher explained, “For example, on tests, a problem may be worth 10 points, but only two of those points count towards the final answer. The remaining points will be given for setting up the equation correctly, showing all the steps they went through to solve the equation, etc. Or a short answer question may give half the points for the correct answer and half for the quality of the explanation and reasoning.” Science teachers similarly reported that they try to give exams with lots of open-response questions. “I always try to emphasize the fact that in science, there’s often not just one ‘right answer,’” observed a teacher.
- Teachers and school leaders use assessment data to help direct instructional decisions. Teachers meet as a team and review their MCAS and benchmark scores and make decisions about which content areas need additional focus.

“In a sense, we are ‘teaching to the test,’ one science teacher noted, “but we really focus on teaching the content and using the test as a benchmark or rubric for making sure that the content is all being delivered.” School leaders analyze formative and summative assessment data to compare student performance across schools. “Looking at student-level data really gives me a sense of whether my teachers are following the district pacing guides,” an administrator explained.

The small school size allows faculty, administrators and counselors to closely monitor individual students, keeping them on track towards college and career readiness.

- Careful monitoring of students performance begins as soon as a student enrolls at Snowden International School. Teachers explained that weekly cluster meetings are helpful for assessing the needs of entering ninth graders. Explained a math teacher, “Snowden is a school of choice, so students are assigned here from throughout the district. There’s not a traditional feeder pattern. Because students come from all over, it is important that teachers figure out the skill levels of entering ninth-graders quickly, so that they can tailor instruction to their needs.” The 9th-grade cluster teachers will meet and discuss every individual student in the first few weeks of the school year, so they quickly get a sense of any significant learning gaps. The guidance counselor is also involved in the cluster meetings, which is helpful for directing additional help towards students who may be struggling. Since the counselor talks to the teachers regularly at these cluster meetings, if a student is doing poorly he’ll know about it right away. If a student is failing, he talks to the parent immediately and tries to get the student into a tutoring program. “Good communication between the counselor and the teachers really helps everyone identify struggling students immediately” noted a school administrator.
- The school’s student support team meets every week and discusses individual students who may be struggling with psychological or behavioral issues. The support team consists of the school counselors, the school psychologist, the assistant headmaster, and a student support specialist from the district. Counselors get information about struggling students from the cluster meetings and then bring that information to the student support meetings. Together the team will develop a plan for academic support and counseling to meet the student’s needs.
- A counselor reported that he meets with each student individually over all four years of high school to make sure that they stay on-track for college readiness. He reviews each student’s schedule at the beginning of the semester, and monitors their progress reports and transcripts. “Because

Snowden is such a small school, I can maintain that kind of relationship with students and give them lots of individual attention.” The counselor explained that each year of high school brings its’ own set of goals and deadlines students must tackle if they want to graduate ready to enroll in and pay for college. With ninth graders, he emphasizes the importance of doing their homework and not getting behind on assignments. Homework can “make or break you” in high school. When students get into 10th grade, he talks to them about preparing for standardized tests such as the PSAT, SAT, and ACT and directs them towards PSAT and SAT study guides. He also starts informing them about how to begin researching scholarships and colleges. Eleventh grade, he explained, is “all about the PSAT and SAT.” Students take the PSAT in the fall of their junior year, and then take the SAT in the spring. He works to get student the necessary SAT preparation materials and classes. At the end of 11th grade, he gives students a timeline for the college application process, and he encourages them to visit colleges over the summer. He wants students to have their colleges picked out by the beginning of 12th grade. In the 12th grade he focuses on getting students through the college application process. He tracks each 12th grade student’s college application process to make sure that they meeting all their deadlines and submitting their financial aid forms.

Teachers receive regular feedback and constructive criticism from school leaders. Frequent classroom observations allow school leaders to identify teachers who may be struggling, as well as those who are excelling.

- In order to ensure that the curriculum and curricular materials are being used by all teachers, school leaders conduct regular classroom observations. Informally, the principal observes teachers frequently, and then discusses the results of that observation with them. Sometimes she also prepares a written assessment to give to teachers. “I always try to emphasize what I liked, as well as areas where they could improve,” she explained. “I try to have discussions with them, rather than just telling them my thoughts.”
- School leaders are encouraged to monitor new teachers carefully in order to identify especially talented instructors. A district administrator explained that all teachers in the Boston Public Schools usually don’t earn permanent status until the first day of their fourth year with the district. However, “superstar” teachers, with excellent evaluations and references, may earn permanent as early as January of their first year. Explained a district administrator, “This decision is left up to the discretion of principals. The district developed this policy to let principals reward their best new teachers so that they can keep them in their school.”

## Theme 5

### Recognition, Intervention, & Adjustment

Proven, practical intervention strategies, such as tutoring and extra instruction in study skills, are quickly deployed in response to learning difficulties. Struggling students receive extra help immediately.

- Teachers intervene with students individually outside of the classroom to ensure that they are making academic progress. Teachers regularly tutor students before and after school, and keep a close eye on their progress. A school administrator explained, “Teachers here really take the time to get to know students as individuals. When a student is struggling in a class, his teacher meets with the student and writes up a contract together describing what he needs to do in order to improve. They’ll sign the contract, and then the student has to take responsibility for meeting the contract’s terms.”
- Extra instruction in study skills is integrated into the school curriculum to help prepare students for advanced coursework. A math teacher explained, “Teachers often have to adjust instruction because they’ll find that their students, especially ninth graders, lack good study skills. Teachers help students learn how to review for tests and take study notes.” The school also participates in the Advancement Via Individual Determination (AVID) program. AVID offers a rigorous program of instruction in academic skills and study skills to students identified as “underachieving.” A school administrator explained, “We would like to start offering AP courses to 11<sup>th</sup> grade students as well as 12<sup>th</sup> graders, so we’re hoping that AVID will help us raise our students’ academic skill levels so that they’ll be ready for Advanced Placement work by their junior year.”
- Snowden recently established a writing tutoring center in partnership with Harvard University because past MCAS results showed that the students’ writing skills needed improvement. The grant-funded writing center is open every weekday after school. Harvard students work one-on-one with students on various writing assignments, helping Snowden students strengthen their writing skills and learning more about the writing process. Teachers refer students to the writing center when working on an assignment. Explained a school administrator, “The writing center is for all students, not only for struggling students. We believe that writing is the way students express their learning, so it is especially important that they have strong skills in this area.”

Teachers, counselors, and school administrators keep each student on track toward meeting high school graduation and college entrance requirements. They work closely with individual students to make sure that they complete the college application and financial aid process.

- When teachers or counselors see early indications that a student may be at risk of dropping out, everyone at the school will work with that student to get them back on track. Explained the principal, “Dropout prevention all goes back to climate and school size. The school is small, which enables us to form relationships with each student. All students are connected to at least one adult at the school. We believe that there are two critical periods when students are most at-risk: ninth-grade repeaters, and 12th graders who get discouraged about whether they can finish all the different requirements for graduation. We pay special attention to students in those grades, to look for early warning signs” A school counselor noted, “I feel really passionately about education, I feel like that it is the key to a good life. If I see a kid who is struggling, I immediately start tracking them down and talking to them about staying in school. I tell them how hard it is out there without a high school diploma. I’ll go to the student’s teachers, and the student support team to try to get the student the help they need. Dropout prevention, like everything else at Snowden, requires the coordinated effort of teachers, counselors, and administrators, as well as the student themselves.”
- Teachers, counselors and administrators talk to students about college readiness from the first day they enter the school as freshman. A guidance counselor explained “I have lots of students who tell me ‘I don’t think I can go to college.’ I tell every student that there is a college out there for them, and I’m going to help them find it. I really try to help students find a school that meets their individual needs. Some students really need the feeling of community that they’ll get at a small college, and I will steer them in that direction. Students who are more independent and self-directed will do well at a big school like the University of Massachusetts.” He also talks to students and parents about financial aid. The majority of parents at the school did not attend college, so they need to learn about financial aid and scholarship options. However, the guidance counselor noted that his responsibilities do not end when students graduates from high school. “I want to see all my students finish college, so I stay in touch with them after they graduate and try to help them out and encourage them if they’re struggling in college,” he said.

## **Summary of Findings**

### **Student Learning: Expectations & Goals**

Educators in the Boston Public Schools teach a rigorous, standards-aligned district curriculum. Detailed documents help to clarify the district curriculum, while vertical team meetings amongst teachers facilitate curricular alignment across grade levels. District leaders, school leaders, and teachers understand the importance of preparing all students to graduate from high school ready for college and skilled careers.

### **Staff Selection, Leadership, & Capacity Building**

District human resource strategies support the development and recruitment of promising teacher and school leaders. School leaders ensure that professional development, mentorship programs, and instructional support are all anchored to school-specific instructional needs and academic goals. Frequent collaborative team meetings, both formal and informal, allow teachers to review student data and share ideas about curriculum and instructional practices across subjects and grade levels.

### **Instructional Tools: Programs & Strategies**

Aligned instructional programs and resources address the academic objectives of the district curriculum while giving teachers the freedom to develop their own teaching style and respond to the needs of individual students. Teachers use evidence-based instructional practices such as student-directed learning, hands-on activities, and the use of real-world examples. District and school policies encourage all students to pursue advanced coursework and provide the support necessary for students to succeed.

### **Monitoring, Compilation, Analysis, & Use of Data**

Benchmark tests and common assessments allow teachers and school administrators to identify gaps in student learning. This data informs revisions to lesson plans and instructional practices. Teachers receive regular feedback and constructive criticism from school leaders. Frequent classroom observations allow school leaders to identify teachers who may be struggling, as well as those who are excelling. Snowden International School's small size allows faculty, administrators, and counselors to closely monitor each individual student's progress towards college and career readiness.



## **Recognition, Intervention, & Adjustment**

Educators quickly deploy proven, practical intervention strategies, such as tutoring and extra instruction in study skills, in response to student learning difficulties. Teachers, counselors, and school administrators work together to keep each student on track towards meeting high school graduation and college entrance requirements. This includes monitoring individual students to make sure that each one successfully completes the college application and financial aid process.



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