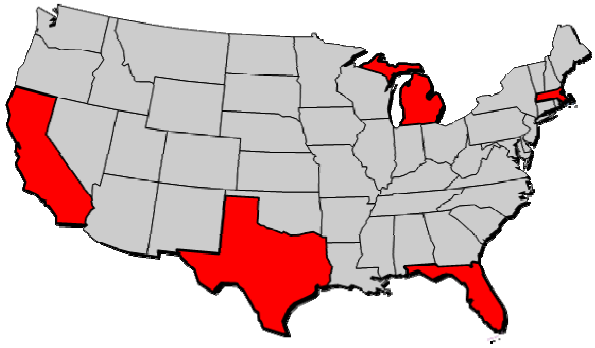
PERFORMANCE AND PRACTICE

CASE STUDY

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



Pyne Arts Magnet School
Lowell Public Schools
(Massachusetts)

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.

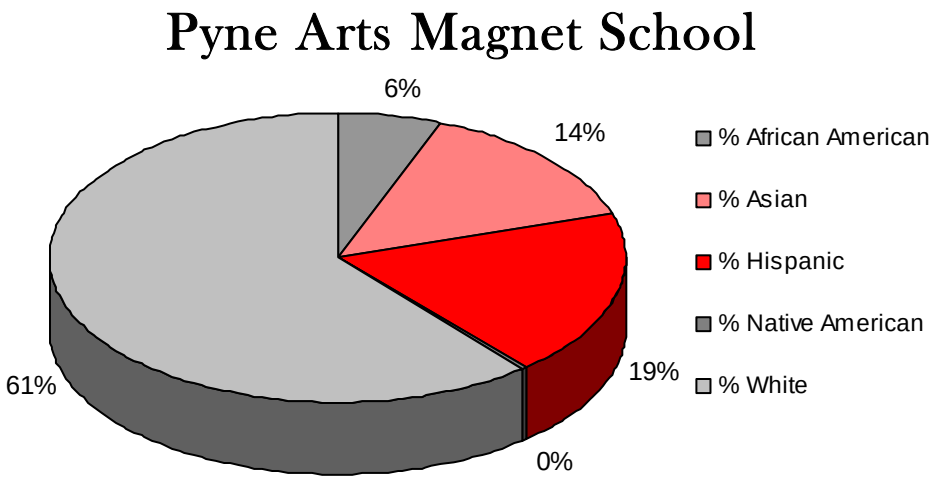
Criteria used in school selection in the current study included three years of state assessment data in mathematics and science (2004, 2005, and 2006), campus demographic make-up, percentage of economically disadvantaged students, school size, and geographic location. In addition, all of the schools 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.[1]

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

NCEA
National Center for Educational Achievement

[1] 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



District and School Profile

The Pyne Arts Magnet School in Lowell, Massachusetts (population 105,000) is part of the Lowell Public Schools, a mid-sized urban district north of Boston. Approximately 13,500 students attend the district's 23 schools. The Lowell Public Schools have a diverse student body, including students from Brazil, Colombia, Cambodia, and several African countries.

Pyne Arts serves approximately 450 students in pre-kindergarten through Grade 8. Because it is a magnet school, students from throughout the city of Lowell may apply to attend Pyne Arts. Students are admitted to the school according to the district's centralized controlled choice student assignment plan. The majority (60%) of Pyne Arts students are eligible for the federal free or reduced-price lunch program. Approximately 19% of students are Hispanic, 6% are African-American, and 14% are designated as Limited English Proficient.

The school curriculum at Pyne Arts emphasizes the arts. In addition to attending the district curriculum core content subject classes, students take elective courses in music, theater, and visual arts. School administrators view the arts curriculum as another method of building students' academic skills. Explained a school administrator, "Embedded in all the arts electives are lessons that address the Massachusetts state standards."

NCEA researchers selected the Pyne Arts School for study participation based upon the school's student achievement results in its middle school grades (5-8). As a result, this case study focuses primarily on district, school, and classroom practices at the secondary level.

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 Pyne Arts 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 Pyne Arts, particularly based on the percentage of economically disadvantaged students.

Table 1: Performance Trends based on Proficiency Standard

	2004			2005			2006		
Grade	**6**	**7**	**8**	**6**	**7**	**8**	**6**	**7**	**8**
Mathematics	15%	Not Tested	26%	30%	Not Tested	29%	25%	49%	50%
Science	Not Tested	Not Tested	33%	Not Tested	Not Tested	31%	Not Tested	Not Tested	39%
State Average for Similar Schools (Math)	24%	Not Tested	18%	30%	Not Tested	22%	31%	23%	24%
State Average for Similar Schools (Science)	Not Tested	Not Tested	15%	Not Tested	Not Tested	15%	Not Tested	Not Tested	14%

Table 2: Performance Trends based on Advanced Standard

	2004			2005			2006		
Grade	**6**	**7**	**8**	**6**	**7**	**8**	**6**	**7**	**8**
Mathematics	0%	Not Tested	9%	4%	Not Tested	9%	6%	19%	19%
Science	Not Tested	Not Tested	5%	Not Tested	Not Tested	2%	Not Tested	Not Tested	2%
State Average for Similar Schools (Math)	7%	Not Tested	4%	8%	Not Tested	5%	9%	5%	5%
State Average for Similar Schools (Science)	Not Tested	Not Tested	1%	Not Tested	Not Tested	1%	Not Tested	Not Tested	1%

Theme 1

Student Learning: Expectations & Goals

Teachers base instruction on the district's detailed, standards-based curriculum. District curriculum documents support classroom instruction by defining the knowledge and skills students must learn by subject and grade level.

- All schools in the Lowell Public Schools follow the district curriculum, which aligns closely with the Massachusetts state standards. In Massachusetts, the state standards are known as the Massachusetts Curriculum Frameworks. District curriculum specialists add detail to the state standards by defining what should be taught and learned in each grade. Explained a district administrator, "The Curriculum Frameworks are a big umbrella. It's the job of the school district to break down the standards by grade level." A school administrator noted that the tightening of curriculum is the biggest district-wide reform of the last five years. In the past, each school developed its own curriculum and selected its own instructional materials. Another administrator observed, "The district has always had high student mobility, and a student might switch schools and be on a totally different scope and sequence after switching. Each school was an island, and this did not serve students well." Under the current district curriculum program, all core content-area teachers use the same pacing guides, scope and sequence documents, and instructional materials. Said one math teacher, "In math, the entire curriculum is aligned, and the district gives you standards, objectives, and key vocabulary for each unit, along with the scope and sequence. Everyone does the same thing, at the same time, using the same curriculum materials."

- District curriculum coordinators work with teachers to pinpoint "essential standards" in math and reading for each grade level. While teachers must teach all state standards for their grade level, Lowell administrators believe that the essential standards are the foundation upon which the other standards are built. District administrators distribute lists of essential standards to school administrators prior to the beginning of the school year, and administrators then review the standards with teachers during collaborative team meetings. At Pyne Arts, math teachers reported that they teach the essential standards during their regular classes and further address them in extra depth during their math intervention classes. Quarterly, district-wide benchmark tests in math and reading focus on the content contained in the essential standards.

- In addition to prioritizing the state standards, the district leadership team defines performance standards by grade. A district administrator remarked

that the state standards successfully identify the content knowledge that students must learn, but district leaders feel that they need to delineate specific skills that each student must master at each grade level. “We want to define what each student needs to be able to *do* in each grade, across the curriculum,” she explained. Although this initiative is still in the implementation stage, district staff is currently disseminating the performance standards to schools.

Teams of teachers participate in the development of district curricular materials. Teacher involvement helps ensure that curriculum documents meet the learning needs of all students.

- Vertical teams of teachers meet yearly with district curriculum specialists to examine the state standards and update the district’s pacing guides and scope and sequence documents. For example, district leaders recently decided to eliminate stand-alone technology classes in the middle-school grades. However, there were still technology standards in the Massachusetts Curriculum Frameworks that needed to be addressed. Teams of teachers met to integrate these standards into the science curriculum and design new curriculum units for science courses. Another way teacher teams help develop materials is through reviewing data from formative and summative assessments and amending the curriculum to address areas of weakness. Upon introduction of a new instructional program, the teams develop standards-aligned curriculum maps to use alongside the program.

- Special education and bilingual education teachers, as well as district specialists in these areas, participate in the curriculum development process. In the words of one district administrator, “The district really takes into account whether the curriculum and curricular materials will be appropriate for special education students and English language learners.” For example, special education and bilingual education teachers have worked to ensure that the reading and math curriculum developed for the elementary and middle school grades include built-in intervention programs and other options. These efforts are ongoing. According to another district administrator, teachers and curriculum specialists are currently working on infusing English Language Learning (ELL) standards throughout the district curriculum. She added, “The district’s curriculum development has really evolved over the years, to the benefit of Special Education and ELL students. Having a common curriculum and common instructional programs has made a big difference.”

Theme 2
Staff Selection, Leadership, & Capacity Building

District leaders give the principals the authority and the support to make decisions about instructional staffing.

- District leaders provide principals with the tools they need to supervise their staff members effectively. District leaders establish a minimum standard of acceptable performance for teachers and administrators in order to identify those who cannot perform, even after receiving considerable instructional support. A district leader explained that many other urban districts wrestle with the "march of the lemons." In these districts, if a teacher is underperforming, a principal will agree not to give them a negative evaluation, as long as the teacher transfers to another school. To keep this problem from persisting in Lowell, district administrators recently examined teacher records. They noticed that some teachers had, for example, worked at five different schools in nine years. District leaders then established a rule that no teacher could transfer out of a school unless he or she could present a positive recommendation from the principal. The district leader explained, "Until a few years ago, principals in the Lowell Public Schools didn't think that they had the power to dismiss anyone. The district had to prove to them that it could be done. In order to educate principals about their rights and responsibilities, we provided lots of supervision and evaluation training. On the other end, the district built in lots of opportunities for professional growth for teachers and administrators, such as mentorship programs and instructional coaches. Overall, these changes have led to a much more professional culture, and a culture of continuous improvement."

- District and school leaders analyze their staffing structures and reallocate teachers to promote gains in student achievement. Leaders grant principals some control over staffing: even if the district lacks the budget to add positions, principals can make changes to better suit their school's unique needs. For example, in 2002 district administrators surveyed teachers in order to find out how many were teaching middle-school math. Administrators discovered that many teachers taught one or two math classes a day, even though math was not their primary assignment or their primary area of expertise. Additionally, many special education or bilingual education teachers were teaching one section of math. District and school administrators recognized that full-time math teachers were best qualified to offer high-quality math instruction. School leaders were then able to reduce the overall number of staff members teaching math at the middle-school level, while also increasing the number of full-time math teachers.

Ongoing, job-embedded professional development opportunities for both new and veteran teachers create a culture of continuous learning at every school.

- New teachers receive ongoing support through the Lowell Teacher Academy, a three-year induction program for all new teachers in the district. Established in 2005, the program provides teachers with prescribed coursework, study groups, and one-on-one mentoring. According to a school administrator, the Academy is "one of the best things ever to happen in the Lowell Public Schools." He explained, "When I started working in this district as a teacher, they gave me the textbooks for my classes and that was it. I had to figure out everything myself and seek out my own teacher mentors. The Academy now institutionalizes support, monitoring, and mentorship for every new teacher." One key goal of the program was to ensure the retention of effective new teachers in the Lowell Public Schools. At the end of the Academy's first year, 80% of 111 new teachers returned to the district for a second year of teaching. In the second year, 87% of 124 new teachers returned.

- At each school in Lowell, a Teacher Support Team (TST) provides school-based support and monitoring for new teachers. Recognizing that everyone has a stake in the success of each new teacher, the teams help school administrators provide effective support for new teachers in their first, second, and third years with the district. Composed of the principal, assistant principal, mentor teachers, instructional coaches, and math and ELL resource teachers, the teams meet for one hour a month to coordinate timely and developmentally appropriate support for new teachers. District administrators attend as many team meetings as possible and are always available for support and consultation.

- Instructional specialists deliver job-embedded coaching to both new and veteran teachers. Federal Title I and Title II grants pay for full-time instructional coaching positions in district schools. The Pyne Arts School employs a math coach and a literacy coach, who work with grade-level teams to help teachers plan collaboratively and model lessons for one another. The coaches also work with individual teachers to help improve their instruction. According to a school administrator, instructional coaches regularly observe teachers teaching. These observations are collaborative rather than evaluative. The administrator reported, "The coach helps the teacher set up the lesson, and then afterwards she shares feedback with the teacher and then asks the teacher to reflect on the lesson and brainstorm new ways to approach the objectives he would like to teach."

Teachers hold regular collaborative team meetings to analyze student data and review instructional practices.

- School and district leaders provide dedicated time for intensive vertical team meetings. Some of these meetings occur during the school's professional development time. In addition, the district gives middle school math departments time for monthly "math brigade" meetings. The district provides substitute teachers, and each school's math department can meet for an entire school day to analyze student performance data and brainstorm ways to improve instruction. Teachers reported that they appreciate the extra time provided by school and district leaders, because it is hard for teachers at small schools like Pyne Arts to find common time during the school day to work together across grade levels. According to one math teacher, "If teachers had to do this data analysis on their own, we would probably not do it because it is too overwhelming and the scheduling is too difficult. The school is really good about setting up ways for teachers to analyze data together. The math brigade meetings have led to some really impressive analysis by the middle school math teachers."

- School leaders provide time during the school day for teachers to meet in grade-level teams. The school master schedule gives each teacher one prep period a day, and all grade level teams receive common prep periods. Although their contracts stipulate that teachers are allowed to use the time as an individual prep period, teachers at Pyne Arts frequently meet together as a team during this time to review the progress of individual students. Teachers also hold formal, 45-minute, grade-level team meetings once a week. Furthermore, observed one teacher, "Because we are such a small school, all the teachers communicate informally all the time."

Theme 3
Instructional Tools: Programs & Strategies

District stakeholders select instructional programs after a careful study of whether the programs align with current academic goals. District and school leaders provide teachers with the support needed for successful implementation of all instructional programs.

- When selecting new instructional programs, district administrators first study the key research in the field to find programs with proven records of success. Administrators then obtain sample program materials and ask teachers and district staff to review and discuss the materials. For example, district leaders recently decided to select new instructional programs for elementary and middle school math. The district identified three possible new programs and then gave sample program materials to teacher teams throughout the district. The district asked the teams for candid feedback. According to a district

administrator, “The goal is to build some sort of consensus as much as possible before we make a final choice.” The feedback helped district leaders select two new, district-wide math programs¾one for elementary students and one for middle school students. Whenever possible, district administrators also visit schools in other districts currently using the instructional program, in order to observe the program in action. According to a district administrator, “Everyone really has a strong vision of where they want to go in all of the core subject areas, so that makes it pretty easy to choose programs. We will only select the instructional programs that match our vision and align with our academic goals.”

- After district administrators select a new program, they use the instructional coaches to assist with the implementation process and offer related professional development. Sometimes district administrators organize workshops for teachers directly, and sometimes they employ a “train the trainer” model where administrators train instructional coaches to deliver professional development in schools. For instance, when Lowell implemented its new math program in 2003, district administrators developed specific professional development offerings for each unit of the new program, with teachers divided into grade-level teams. Teachers studied each unit with their grade-level peers before teaching the unit. Instructional coaches facilitated lesson study and lesson-planning sessions, where they worked with teachers on preparation for the new lessons. Explained a district administrator, “These new programs were phased in with lots of professional development. We decided to invest in professional development for math teachers in math concepts and pedagogy so that they would be well-prepared to use the new program.”

Teachers employ instructional practices and arrangements that maintain academic rigor while differentiating instruction, in order to meet the needs of every student in their classes.

- Differentiation within the classroom occurs frequently at Pyne Arts because, since it is a small school with a small teaching staff, its school leaders cannot group students by ability level. Explained a school leader, “We believe that while different students may have different needs and backgrounds, the school must hold all students to high standards. Everyone is taught the same curriculum, but teachers differentiate the curriculum to better meet the needs of each individual student.” A math teacher noted that he looks for the learning style that fits best with each particular student. “Students with higher cognitive levels might like thinking abstractly,” he explained. “Struggling students need more concrete representations of math concepts, so we’ll also do more hands-on activities, such as working with manipulatives. Part of being a good teacher is being able to adapt your instruction to different learning styles. The district selects instructional programs that allow teachers to uses multiple

representations of math concepts. Different students can use different ways to solve problems. They just have to able to explain their reasoning no matter what approach they use."

- School leaders encourage teachers to devote extra time to lesson planning, in order to develop multiple instructional approaches for each learning objective. A school administrator said, "Teachers need to plan their lessons based around what students need. You also need to be flexible enough to switch gears if students are not 'getting it.' You can't just teach to one group of students, such as high, middle, or low achievers. You have to teach all students in the 45-minute class period you have, and that takes a lot of planning." She encourages teachers to engage in backwards planning, explaining that she asks teachers, "What do students need to know when you finish this lesson, and how will you get there?" She added, "You need to know your students. You need to have looked at their prior data and know what they already know, and what they need to know."

- According to a district leader, administrators and teachers in Lowell strive to keep special-education students in regular classroom settings as much as possible. "Keeping students exposed to the highest possible level of curriculum is really beneficial," she noted. "Many other districts pull students out of classes for specialized instruction, but Lowell really makes an effort not to do that." As a result, Lowell has a higher percentage of students receiving inclusion services than other, demographically similar districts. This change occurred gradually. About ten years ago the district built and opened several new schools, and these schools operated as full-inclusion "model" schools so that existing district schools could learn how to move their schools towards greater inclusion. "As a result," the administrator said, "there was lots of training provided at these new schools regarding co-teaching between regular and special education teachers, and other inclusion strategies. This approach gradually filtered out to the rest of the district."

- School leaders at Pyne Arts provide special training to teachers to help them work effectively with English language learners. More than 100 English language learners attend Pyne Arts. In order to best serve these students, school administrators train all teachers in second language acquisition, as well as in instructional techniques for English language learners. A school leader explained that he thinks all teachers can benefit from this training, regardless of the students they teach. "Good instruction for English language learners is just good instruction, period," he said. "These strategies will help any teacher improve instruction, even if they don't have ELL students in all their classes." Further, when analyzing student data, school leaders encourage teacher teams to identify standards that particularly challenge English language learners. Explained a science teacher, "This will sometimes point to an area that requires some additional instruction in the vocabulary attached to that standard."

Theme 4
Monitoring: Compilation, Analysis, & Use of Data

District and school leaders provide teachers with clear, easily accessible student data reports. Teachers use data from benchmark and state assessment results to adjust instructional approaches and identify struggling students.

- Recent district reforms prioritized the use of data to inform instruction. As a district administrator explained, “Unless you really know what a student knows and is able to do, you really cannot effectively plan instruction to make maximum progress for those students.” The district changed its student data-management system recently and started using a more user-friendly software system that makes it much easier to generate data reports. “The district’s data analysis software allows stakeholders to look closely at least four years of data for each student and identify the students’ particular needs,” the administrator said. “I look for trends in state assessment data and item analysis, in addition to studying individual student results on benchmark tests, in order to identify trends in student and teacher data.”

- District and school administrators agreed that their next goal is to train teachers in how to use the district data software resources themselves. A school administrator noted, “I really want to teach the teachers how to analyze student data. I’d like to find the time to sit down with teachers and train them on how to use the data analysis software so that they can do item analysis of state assessment and benchmark test results. Currently, I’ll do most of the analysis and then I share the data reports with teams of teachers.” According to the teachers, the data reports help them to identify strengths and weaknesses in their instruction. Teachers especially appreciate the ability to look at multiple years of state assessment results by test item, because it allows them to identify state standards that may require additional attention. One teacher explained, “We really try to look at particular standards that students struggle with year after year, because this will really call attention to something that we need to change about our teaching.”

Common assessments and district benchmarks help teachers both monitor student mastery of the district curriculum and align instruction across school levels.

- Educators in the Lowell Public Schools administer quarterly benchmark assessments in math and reading in Grades 1 through 8. As a result, teachers monitor students’ progress throughout the school year and modify instruction according to students’ strengths and weaknesses. Math teachers reported that they really appreciated receiving immediate feedback on student performance. Said one teacher, “This is so much more effective than tailoring

instruction only to the previous year's assessment results, which is fairly old data by the time we see it."

- Teachers understand that frequent assessment helps them measure whether students are actually learning what has been taught. A science teacher explained that all science teachers identify learning objectives for each class session. "We'll write the objective on the board each day, teach that objective, and then, at the end of each multi-week learning unit, we'll test students on each of the learning objectives for that unit," he said. "In science, there is no district-wide benchmark testing, so these tests serve as our formative assessments."

- Common math assessments used in middle and high school classes help middle school teachers prepare their students for high school coursework. Algebra teachers in Lowell use common Algebra I assessments. "One of the big problems in math in most districts is the disconnect between what middle schools expect and what high schools expect," reported a district administrator. "The immediate feedback to eighth-grade Algebra teachers from the common assessments is really powerful, and it really raised the expectations that middle school math teachers had of their students."

Collaboration among teachers and administrators helps all stakeholders track individual student progress and identify students in need of extra assistance.

- Strong communication across grade levels helps teachers identify and intervene with struggling students early in the school year. According to one teacher, "Teachers frequently collaborate informally across grade levels. For example, a sixth-grade teacher will talk to the seventh-grade teacher at the beginning of the school year and tell them about the students who are coming to his or her class." Teachers discuss the overall strengths and weaknesses of groups of students, as well as issues faced by particular students. A school administrator explained, "The PreK to Grade Eight school format is an important component of the school's success, because we get to know the students and parents really well. At least 65% of kids move all the way through the school, so teachers and administrators get to know the student's weaknesses and strengths. We eliminate lots of the upheaval that come when students transition between grades."

- Teachers reported that they constantly observe students as they teach, and determine whether they're "getting it" or not. Middle school math teachers review and grade students' math assignments and portfolios together, using a shared scoring rubric. Said one teacher, "We try to catch students who are having problems and get them extra help before the benchmark assessments, because benchmark testing occurs only every three months. You can't wait that long to identify students who are struggling."

- At Pyne Arts, teachers and administrators keep close track of truancy or other student behavior issues. The school's administrative team reviews and discusses the progress and well being of individual students in weekly meetings. Explained one school leader, "These administrative team meetings are non-negotiable, while many other schools hold them as time permits. At the meetings, everyone focuses entirely on the students. There is much more that goes on at this school to reach kids beyond what happens in the classroom."

Theme 5
Recognition, Intervention, & Adjustment

Proven, practical intervention programs scheduled before, during, and after the school day provide opportunities for all students to improve their knowledge and skills in core content areas.

- Recognizing the importance of strong basic math skills in preparing students to take college preparatory coursework in high school, district leaders in Lowell require all middle school students to participate in 90 minutes of daily math instruction. Students receive enrichment, targeted interventions, or remedial instruction for 30 minutes a day, in addition to their daily 60-minute math class. At the beginning of the school year, after reviewing the previous year's state assessment results, school leaders assign each student to a math intervention class targeted to his or her needs. While each school is free to develop its own intervention model, teachers at Pyne Arts plan instruction from an intervention curriculum program provided by the district. Students also take a daily 30-minute English Language Arts intervention course focused on vocabulary and reading comprehension. Teachers regularly move individual students between intervention groups, based upon each student's current mastery of the material.

- The district provides additional tutoring before school for struggling students. For example, a math teacher noted that she works with students four mornings a week. "Between 14 and 25 students come in at 7:30 to do math!" she exclaimed. "It's great! I never would have believed students would do this voluntarily." During these tutoring sessions, the teacher works with each student to help him or her understand how important it is to learn the state standards and pass the state's standardized exam. She reviews students' test results with them, on an individual basis, so that students can see where they excelled and where they struggled. "It really made the test come alive for them." she said, because, "They can see how the work they did all year will help them be successful on the test. It's no longer a 'scary' assessment."

- After-school tutoring and enrichment classes are provided through the Pyne Arts Extended Day Program. Reported a school administrator, "The Extended

Day Program is a much richer and more academically-focused program than the typical after-school program." Funded by a federal grant, the program runs after school for three eight-week sessions during the school year. About 120 students in Grades 5 through 8 participate, and the school provides bus transportation home. Students spend part of the Extended Day working on homework, with teachers available to provide one-on-one tutoring. Students spend the second part of the program taking various enrichment classes taught by Pyne Arts teachers. Some students participate in intervention classes in literacy or math, while other students take academic electives. Others participate in arts or physical education classes. The school identifies academic and behavioral outcomes linked to each course. For example, according to the school's curriculum documents, an Extended Day course called "The Science of Baking" supports the development of reading and verbal communication skills, math communication, math reasoning, problem solving, and relations with adults and peers. Noted one teacher, "The after-school program gives us some additional flexibility and creativity with our teaching. We can diverge a bit from the district's scope and sequence, even though the coursework is still strongly standards-based."

Frequent, open communication between stakeholders at the district, school, and classroom level facilitates the continuous review and adjustment of curriculum, instructional programs, and classroom instructional practices. Stakeholders identify problems in any of these areas early, and they develop solutions quickly.

- A district administrator explained that that the district employs a Coordinator for School Improvement, who looks in detail at teaching and learning in low-performing schools. The Coordinator works closely with teachers and administrators at low-performing schools to provide support and new ideas. A district leader reported, "We've made great progress with school performance this year, moving from 11 schools that we're worried about to only three. We're seeing incremental progress, and are confident that it will continue. We believe that the practices we've institutionalized, especially the interventions and coaching, are really working."

- Instructional coaches serve as valuable conduits for communication between district and school stakeholders regarding needed revisions to district curricular materials and instructional programs. Reported one district administrator, "The critical feedback I receive from teacher teams via the instructional coaches is incredibly important. It helps me understand changes that need to be made to curriculum." Instructional coaches also work individually with struggling teachers. Observed a school leader, "When teachers struggle, it's usually because they need clarity about something, not because they don't want to do it or can't do it. For example, there was lots of confusion when the entire district first adopted our current math and ELA

instructional programs, because the learning curve was steep, but we worked through it as a team."

Summary of Findings

Student Learning: Expectations & Goals

Teachers base instruction on the district's detailed, standards-based curriculum. District curriculum documents support classroom instruction by defining the knowledge and skills students must learn by subject and grade level. To help ensure that these documents meet the learning needs of all students, teams of teachers participate in the development of district curricular materials.

Staff Selection, Leadership, & Capacity Building

District leaders give principals the authority and the support to make decisions about instructional staffing. Ongoing, job-embedded professional development opportunities for both new and veteran teachers create a culture of continuous learning at each school. As part of the school's professional development program, teachers hold regular collaborative team meetings to analyze student data and review instructional practices.

Instructional Tools: Programs & Strategies

Stakeholders select instructional programs after carefully studying whether the programs align with current academic goals. District and school leaders provide teachers with the support needed for successful implementation of all instructional programs. Teachers use instructional practices and arrangements that maintain academic rigor while also differentiating instruction, in order to meet the needs of every student in their classes.

Monitoring, Compilation, Analysis, & Use of Data

Teachers use this student achievement data to select instructional approaches and identify struggling students. Common assessments and district benchmark tests further help teachers and administrators both monitor student mastery of the district curriculum and align instruction across school levels. Collaboration among teachers and administrators helps all stakeholders track individual student progress and identify students in need of extra assistance.

Recognition, Intervention, & Adjustment

Proven, practical intervention programs scheduled before, during, and after the school day provide opportunities for all students to improve their knowledge and

skills in core content areas. Frequent, open communication between stakeholders at the district, school, and classroom level facilitates the continuous review and adjustment of curriculum, instructional programs, and classroom instructional practices. Stakeholders identify problems in any of these areas early and develop solutions quickly.

4030-2 W. Braker Lane, Suite 200 Austin, Texas 78759 512.320.1800 www.nc4ea.org