

Best Practices Case Study

Vincent Amodeo, June 2009

Jefferson Middle School Science

Jamestown City School District

School Context

Situated on the southern shores of Chautauqua Lake, 60 miles southwest of Buffalo lies Jamestown, New York, home to the Jamestown City School District and Jefferson Middle School. Jamestown is a small city with six elementary schools, three middle schools, and one high school. In the 1960s and '70s, Jamestown thrived on its furniture-making industry. Now, as in many towns and cities across the state, this community is struggling with increasing rates of poverty. One district official reports that the city is the twelfth poorest in the state.

An indicator of this poverty is the percentage of students receiving free and reduced-price lunch at the school. In the course of only four years, Jefferson Middle School's rate for free or reduced-price lunch has risen from 50% to 69%. The rates in the city's other two middle schools are 64% and 48%, with the district overall at 56% in 2007-08. The upward trend indicates the challenge faced by both school and district of having to do more with less.

Student Demographics 2007-2008: Jefferson Middle School, Jamestown City School District¹

	Jefferson Middle School	Jamestown City SD	New York State
% Eligible for Free Lunch	55%	46%	36%
% Eligible for Reduced-Price Lunch	14%	10%	8%
% Limited English Proficient	1%	4%	7%
Student Ethnic/Racial Distribution			
% African-American	12%	8%	19%
% Hispanic/Latino	7%	12%	21%
% White	79%	77%	52%
% Other	2%	3%	7%
% Students Meeting or Exceeding State Standards on Intermediate-Level Science Examination	84%	78%	71%
Total Enrollment	390	4,948	2,714,385

Jamestown's primary income is derived from the summertime tourist industry. According to district personnel, it also has a high number of rental units and relatively low rents. This

contributes to a high transiency rate within the district, including across the three middle schools. In addition, the number of bilingual students and those whose education has been interrupted is rising.

Walking through the halls of Jefferson Middle School's newly renovated building, updated in 2007, I could not help but think that there was a church-like reverence to this place. The Director of Curriculum, Assessment, and Instruction identified the reason for such reverence: "If you surround people with facilities that they will be proud of, their expectations of themselves will improve and teachers' expectations of children will improve. They have an environment that supports pride in one's self and pride in their learning." The principal had input into the design of the new facilities, from the tile on the walls and floors to the width of the hallway. Everything in this school is about the students: from the physical design of its auditorium and the high tech projection systems in each classroom, to the up-to-date fitness room used by students during gym class, to the flat-screen televisions mounted in the cafeteria; from the extra 1800 minutes of instruction for students who need it built into the schedule to the benchmarking of student progress.

However, the new building is just one manifestation of the way the school has changed over the past decade. Just seven years ago, it was deemed by the state to be a school in need of improvement (SINI), but it has been in good standing for the past five years.

Best Practices Highlights

In a recent visit to the school, a sense of dedication, collaboration, and pride pervaded two days of interviews with teachers and administrators as well as during classroom observations. Their dedication is exemplified by the principal's claim that "everyone is responsible for teaching all children," which was borne out throughout the visit as staff expressed their commitment to the education, students, and school of this community. They spoke of their collaborations with peers as enhancing the school's mission: "to keep the bar high in academic achievements as well as providing enriching activities to promote social, emotional and physical growth." Collaboration is supported by the school and district structure, as well as a three-pronged approach to data collection and use: consistent benchmarking, data analysis, and placing more responsibility for using data in the hands of teachers.

While poverty presents a challenge, it is "not an excuse for poor performance." Teachers and administrators express pride in the way the school counters the ill effects of poverty with positive elements in curriculum, instruction, and assessment, as well as scheduling and staffing.

The school has been the recipient of federal and state grants and also relies on whatever resources the community has to offer. These include, for example, the Roger Tory Peterson Institute, the Jamestown Audubon Society, and the Jamestown Forest Preserve. Staff. Students also benefit from collaborations with Jamestown Community College and the State University of New York at Fredonia.

A Closer Look

Curriculum and Academic Goals

Teachers and administrators agree that the goal is to meet, if not surpass, the New York State Science Standards. Despite what this might mean in terms of teaching for the test, they also agree that the goals of science education should be to get kids turned on and involved in science and to develop critical thinking skills. For example,

- The Director of Curriculum, Assessment and Instruction summarizes the mission of Jefferson Middle School: “All students, regardless of their SES resources, deserve the opportunity to achieve at a high level. We have an obligation to provide highly qualified, trained teachers, staff development, the physical resources, the infrastructure to provide students with high-quality academics.”
- The Director of Middle Level Education, in a presentation to the school board at the beginning of the 2008-9 school year, provided an overview of the changes made at the middle school and future goals. In addition to the goal that “all students [are] expected to meet high standards,” he included “looking forward to continuing our efforts to make our MS the best in the state . . . if not the nation.”
- Academic goals are driven by the district’s SAIP (Student Achievement Improvement Progress) process. Within this process, grade-level departments develop goals for their individual subject areas, as well as action plans to help reach those goals. In addition, in 2008-9, the middle school goals were built around how other subjects could promote higher student achievement in math and ELA.

A curriculum mapping project that began five years ago has given district educators “the opportunity to look at each grade level,” which is seen as important, in part, because of the high transiency rate between schools. At least one administrator voiced the need now to “work on vertical alignment.”

Staff Selection, Leadership, and Capacity Building

Much of the success of the Jefferson Middle School and the district as a whole is attributed to the previous superintendent, who had a vision of what the district and Jefferson Middle School should be and aggressively sought the funding to bring that vision to fruition. Now, says the director of curriculum, instruction, and assessment, “what is important is what you do with that legacy.”

A key position in the district is that of the coordinator of science and technology, formerly a high school physics teacher. He is praised by teachers and administrators alike for his tenacity and assertiveness in seeing that the needs of the science department are met, whatever they are, which in turn allows teachers to meet the needs of the students. He was described as the “go to guy,” the one who will get you what you need -- supplies for an experiment or financial support to attend a conference. They praised his attitude, drive, and

sense of commitment and wished it could be bottled and distributed to schools throughout the state.

Jefferson recruits teachers from an employment fair held at Edinboro State College in Pennsylvania and Buffalo Regional Recruitment Fairs, as well as through traditional media routes. Because of Jamestown's close proximity to the State University of New York at Fredonia and St. Bonaventure University, many teachers are graduates of these institutions or they originally hail from the Jamestown area. Teachers are selected in the typical fashion of interviews with the principal and science coordinators and often involve other teachers on the team, grade, or department. According to the principal, "The addition of a teacher assists in finding the right 'fit' to add to the school staff." Questions cover areas such as how candidates would interact with parents and how they might deal with disruptive students. In some instances, a candidate may be asked to teach a lesson. The principal described the pools of applicants as "above average" and attributed this, in part, to Jamestown's reputation as being able to "form a better teacher – to groom a teacher" as well as to the "high level of technology" available for instruction.

Although the district offers no formal process to support teachers to pursue National Board certification, professional expectations are high and professional activities support teacher development as much as possible. In addition to district monies for attending conferences, the Jamestown Teachers Association sets aside \$300 per teacher in its budget for professional development.

Instructional Programs, Practices and Arrangements

Use of Time. Several aspects of Jefferson Middle School's instructional program stand out; most outstanding, perhaps, are the steps the school and district have taken to maximize instructional time. Between 2002 and 2003, a task force composed of a consultant, teachers, administrators, and community members was created to evaluate the district's middle schools and to make recommendations for how to improve middle-level education for Jamestown students. During their 18 months of work, the task force compiled what they saw as the correct mechanisms to address beliefs about middle school students and the schools they attend. Time, in its many permutations, was at the core of the task force's recommendations. These included long, flexible blocks of time for fifth- and sixth-grade teams; 60-minute Encore (specials like home and careers, art, music) and PE classes; 30- and 60-minute team and grade planning periods daily; a trimester schedule; and added core time for teams.

Based on task force recommendations, students are assigned to teams. At the fifth- and sixth-grade levels, teams consist of just two teachers. In this way the teachers are only responsible for approximately 40 students, instead of twice that number. The principal alluded to this during our conversations with her, stating, "We were finding that the kids coming up from elementary were lacking independent skills; they needed more contact time. Now with only 35-40 kids on a team, they [teachers] can get to know them better, work with them."

Not only has Jefferson increased teachers' ability to get to know their students better, but it has also "added" 6½ weeks of instruction. This has been accomplished by having the English teachers loop (advance to the next grade level along with the students). The principal explains that through this process, students do not have to "get used to" a new teacher and vice-versa, but that they can pick up where they left off the previous year. In addition, all grades receive a double block of English language arts daily.

The schedule allows for both team meetings and grade-level meetings during common planning time of either 30 minutes or 60 minutes daily. Half of the Supervisory Period is used for AIS (Academic Intervention Services), with the remaining time available for other instructional help. In addition, there are very few bells, as passing times are not built into the schedule. This eliminates the desire for "clock-watching" and underscores the importance of education and learning.

Another of the task force's recommendations was to operate on a trimester marking schedule, a practice that Jefferson Middle School has adopted.

Instruction. According to an administrator, "The *what to teach* is the curriculum map, and *how to teach* is where the [teacher] autonomy comes into play." That said, science teachers are "strongly encouraged" to use an inquiry-based and experiential approach to teaching, and have been provided with the resources and support to do so. In the science classes we observed, we found teachers engaging students and using a combination of small and large group instruction. Teachers "mixed it up," using a variety of teaching strategies, and they made efforts to connect with students' prior knowledge and experience in introducing a new topic. It was also clear that students felt safe to suggest an answer and risk being wrong.

For example, one class took place in a lab room that had been emptied of desks and chairs. The teacher divided the group of 19 students into two groups, 10 on one side of the room, 9 on the other. Each student received 3 laminated "resource" cards, each one saying "corn," "water," or "shelter." With one side of the room representing deer and the other side resources, students were instructed to draw a single card. "Deer" were then instructed to cross the room and find a student holding a card that matched their own. If they found a match, both students went to the "deer" side of the room; if no match, they went to the "resource" side. Then they counted the number on each side and recorded it in a chart on the whiteboard. After several rounds of "competition" and recording of the fluctuating numbers (16-3, 6-13, 12-7, 14-5, etc.) on the chart, the teacher introduced a "lion" card to some of the students on the resource side of the room and continued a few more rounds until, at the conclusion of round (year) 18, the deer population reached zero.

With students seated on counters or anywhere they could get comfortable, the teacher conducted a whole group discussion of what had happened, encouraging correct use and definitions of appropriate scientific vocabulary – extinct, prey, predator, herbivore, competition, etc. Then, after moving desks back into the room, students were given graph paper and rulers and instructed to take out pencils. And the teacher led them through setting up a double line graph, again using precise vocabulary to describe the graph and its

elements. Working individually, students then began to plot the data from the chart on the whiteboard onto their graphs as the teacher circulated through the room monitoring student work and answering questions. A teaching assistant worked with one student during the graphing.

Monitoring: Compilation, Analysis and Use of Data

The use of data is one of the anchors for success, according to educators at Jefferson. The Director of Curriculum, Assessment, and Instruction sums it up by stating: “We look at the data. We’re always looking at past performance and trying to improve upon it.” For example, software and frequency charts are used to track how often a Key Idea from the state assessment is asked. One goal has been to get more useful data in the hands of teachers – data that are specific to their students -- and the district has purchased a software package that provides for that. Teachers we spoke with identified trainings they attended that related to data collection and monitoring or to curricular items.

Benchmarking exams at the end of each trimester marking period, every 13 weeks, enable teachers and the science coordinator to “identify strengths and target weaknesses.” Once the exams are graded, the results are provided to the teachers. And the teachers discuss these data, not just within the school (for example, between the 7th and 8th grade teachers or the 5th and 6th grade teachers), but with their colleagues across the district. The data are also used to guide the kinds of professional development offered to teachers. As reported by one teacher, the benchmark tests are not meant to be – and generally are not – used to give individual student grades. The benchmark test “is truly meant to be informative in order to help the students directly,” for example, to figure out if anyone needs Academic Intervention Services.

Overall, the school’s Student Achievement Improvement Process (SAIP) is the vehicle that drives data collection and use. The process allows the school to focus on goals set by the building principal or department coordinator. The department coordinator uses the data to monitor progress on state and district assessments and collaborates with teacher teams to identify action plans that define the ways they think they need to change or improve.

Recognition, Interventions, and Adjustments

The benchmark tests given each trimester not only help identify areas of curriculum and instruction that need more attention, but they also help identify students who need more support before a formal low grade makes that need all too clear. In addition to formal Academic Intervention Services, the school day provides students several opportunities for additional instructional support. They can work with their teachers during a Supervisory Period, which alternates days with physical education. And some students are assigned a “working lunch,” generally for a half-trimester. During this time, which is “sold as multi-tasking and an adult behavior,” a few students work in a focused, structured environment with a few other students and teachers. “The goal,” according to the principal, “is to have the student complete at least one task as they eat. Students with similar [tasks] are sometimes working together. . . . Some students actually don’t want to return to their regular lunch environment, as they can see the benefits of focus and structure.” Over the

course of each year, every teacher is expected to offer 1800 additional minutes of instruction for students who need the additional help. And during Jefferson’s after-school programming, the local YWCA offers homework and tutorial assistance through the “Striders Program.”

Special educators report that they are “fully involved” in curriculum development, and an English as a Second Language department, although focused mainly on ELA, is available to help with science.

An advanced track in science and math is available for academically talented seventh- and eighth-grade students. This course includes earth sciences, life sciences, and physical sciences, and these students are also required to take a summer course to prepare them for high school science. Their course grades become part of their high school transcript.

In a Nutshell

In 1984, distinguished educator John Goodlad published a book about a landmark four-year study of schools. *A Place Called School* reported on the state of education and schooling at that time and recommended reforms that would make them more successful. Educators at Jefferson Middle School have risen to Goodlad’s challenge to provide an education that can meet the needs of the 21st century. The collaborative, supportive, and nurturing environment in the school is the result of the work of many, not just one. All the individuals interviewed truly share in the vision of educating children for success despite what ever obstacles or challenges may exist. To this observer, Jefferson Middle School embodies the place Goodlad called school.

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Carm Proctor, Principal**

<http://www.jamestownpublicschools.org/jefferson/>

ⁱ Demographic data are from the 2007-08 New York State Report Card (<https://www.nystart.gov/publicweb/AllDistrict.do>). This case study was conducted in spring 2009 as one of a series of studies conducted by Just for the Kids-New York since 2005. For the study of middle school science, research teams investigated seven consistently higher-performing and three average-performing schools based on student performance on the New York State Intermediate-Level Science Examination in 2006, -07, and -08. Researchers used site-based interviews of teachers and administrators, as well as classroom observations and analyses of supportive documentation, to determine differences in practices between higher- and average-performing schools in the sample. In 40% of these schools, the percentage of students qualifying for free or reduced-price lunch exceeded the state average. Average-performing schools were matched as closely as possible to the higher performers in terms of student poverty levels, geographic location, size, and student ethnicity. In 2009 Just for the Kids-New York changed its name to Know Your Schools~for NY Kids.