TERC | Using Data Case Study

Danvers School District, Danvers, MA

Educators at Massachusetts School District Go Back to School Online

Educators Learn How to Use Data to Accelerate Student Achievement

At Danvers Public Schools, a suburban district outside of Boston on Massachusetts' northeastern coast, principal Sharon Burrill and her staff at Ivan G. Smith Elementary are taking a sharp look at data, to guide them in making the best instructional decisions for their 275 students. "We're working with a comprehensive data analysis process with the goal of translating it into improved student achievement," said Burrill. "With constant refinement of instruction, we aim to tweak and improve our teaching for the next day."

Online Course Catalyst for Change

Danvers Public Schools began this journey three years ago after curriculum director Mary Wermers took an online class and learned how to implement "Using Data," an innovative program designed to fundamentally change teaching and learning through the use of data.

Developed by TERC, a leading educational research and development organization, with a grant from the National Science Foundation and evaluated by independent researchers, Using Data has documented gains in student achievement in mathematics, science and other content areas and has been successful in narrowing achievement gaps between economic and racial groups, as well as increasing collaboration, data use and instructional improvement. The Using Data process takes teachers beyond the "why" and "what" of data-driven decision-making to the important question of "how." Teachers learn how to use data to inform their day-to-day practice and to put every student on the path to success.

Faculty Forums Established

Teams formed of cross-sections of Smith Elementary's faculty scour data on a regular basis. Additionally, one Friday morning every month, the analysis takes a broader view at a "faculty forum." Administrators and students' parents cover the classrooms for a two-hour block while the entire teaching staff meets to work on one aspect of their practice. "Everyone is very committed to this work, and we're fortunate to have strong support behind us," said Burrill. "People really see the value of what we're doing."

One of the faculty forum topics was teacher feedback to students, studied in conjunction with data analysis. "We looked at what kinds of responses might prompt students to think, 'I can't,' versus those that prompt them to think, 'I can,'" said Burrill. The group worked in triads across disciplines to make peer observations, coding the responses they were seeing. "We became very conscious of how we're responding in the classroom," she said.

With a faculty that's become highly collaborative and willing to ask difficult questions, Burrill said they're delving deeply into the Using Data process and generating interesting conversations. Data teams at Smith Elementary are also putting the process to work on long-term impacts, examining how, for example, grade 3 achievement affects achievement in grade 5. "We're seeing the potential for teachers to establish a strong foundation in the lower grades when we cross-reference the data," she said.

Investigating Long-Term Impacts

Julie Hilliard, a teacher at Smith Elementary, is always seeking ways to improve achievement in her fourth-grade classroom, with the Using Data process as her guide. She said she is looking at the state standards more closely, matching them with investigations lessons and addressing any areas of deficiency with morning work and homework.

Highlights

- Online professional development provides foundation
- Collaboration leads to long-term solutions
- Middle School math and literacy gains
- Systematic process facilitates grant award

She teamed with her colleagues to develop a Massachusetts Comprehensive Assessment System (MCAS) tutoring curriculum and a math enrichment class. In addition, she begins each school day by challenging her students with an MCAS math problem.

Assessment data at Smith Elementary are showing improvement each year, with scores on the MCAS on the rise. Burrill is confident that understanding and analyzing the data is leading the school in the right direction. "This process can only help us," she said. "I'm excited about what the staff is doing to stretch themselves, to become more precise, to sharpen their delivery and improve teaching."

Districtwide, teachers and administrators are seeing the benefits of the Using Data process – a solution that came at a time it was needed. Six years ago, when Danvers Public Schools began implementing a standards-based math program, scores began to fall across the district. "Principals were upset, and teachers from each school were coming to me to analyze their data. However, looking at charts wasn't going to change things – we needed a good process," said Wermers, curriculum director. "We needed a way to make good decisions, not quick decisions."

Online Course Provides a System for Analysis

Over the summer, Wermers enrolled in the Using Data online class – something that at first gave her pause. "I didn't know how I would do with online learning, because I'm a bit of an extravert and I thought I needed to be in a room with people," she said. "But it was wonderful. It was more interactive than I anticipated. And, the course content was a challenging and valuable process. The flow made a lot of sense – it was very sequential, and I was able to navigate the materials easily," she said.

Armed with her new knowledge, Wermers formed an implementation team and began working with data teams serving the K-8 population in her district. Data analysis began with large, district-level assessments and expanded to smaller, classroom-level work. "It's more school-based, and teachers are more involved now. We're affecting what's actually happening in the classroom," she said.

Personalized Solutions Make a Difference

Today, data teams are planning and organizing in a common process at every school and seeing how to tackle areas of deficit to meet each school's unique needs. "One school's problem with math is not another school's problem, so we can't all have the same solution," she said. "Often we jump to fix something that we think is a problem, but it isn't. We have the deep conversations and look at the research and find the real problems."

Collaboration is especially strong with the middle school faculty, who were some of the district's early adopters of the Using Data process, said Wermers. For example, the math teachers meet every six days to analyze their data and continually inform instruction. Language arts teams at the middle school and elementary schools are also joining forces to examine data.

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> *Mary Wermers, Curriculum Director, Danvers School District, Danvers, MA*

One hurdle with the implementation has been the desire for quick fixes, "because as teachers, we are problem-solvers, and we want to fix things now," said Wermers. "Using Data is providing us with longer term solutions based on research. There is no short-term fix to make up for inequities and to transform learning for low socioeconomic students. When the process is right, the payoff will come."

Funding Solutions and Sustainability

After beginning the Using Data process, Danvers was awarded a grant from a private foundation to continue its work with data-driven decision-making. "We were awarded the grant, in large part, because we had a systematic process in place with Using Data," said Wermers. That has enabled the district's teachers and administrators to take the process full force now. Now the high school grades are gradually being added to the process, with a goal for a more consistent and streamlined implementation.

The Using Data process has been easy to sustain, and the district "keeps pushing on," said Wermers. "Using Data is heavy on protocols and procedures, which keeps conversations productive and meaningful."

In addition, partnering with Jennifer Unger, a Using Data process consultant for TERC, has "truly aided us in guiding the district through the Using Data process," said Wermers. When questions have arisen, TERC and Unger have been very responsive, she said. "We've really felt the high level of their support."

"It's an exciting time for us," said Burrill. "And it's the way a school community chooses to work together that defines what's possible."

For more information about Using Data, visit http://usingdata.terc.edu/

About TERC

Founded in 1965, TERC's mission is to improve math, science and technology teaching and learning. Each year, TERC's programs and products reached more than 3.5 million students in the United States and abroad. For more information, see **www.terc.edu**.

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