

Search & Rescue

Professional development programs of today search for detailed data to drive how teachers should teach and how to rescue American education

By Angela Pascopella

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Like a fine-tuned piece of machinery, districts across the nation are taking advantage of high-tech tools and software programs to collect reams of data on students, make sense of it all, and in the end, transfer that knowledge into successful classroom lessons.

Data-driven decision-making is the biggest thing in education, gaining ground since it first started getting popular in the mid-1990s. Numerous reports and studies have delved into the topic of data-driven professional development, which many districts are using now, revealing the benefits of such programs.

It's about 11 years since only a select few teachers ever got a chance to step out of the classroom and collaborate with their peers for staff development training. Educators never had clear standards of what they wanted children to learn, says Jean Rutherford, so measures and standards were non-existent. When standards are "crystal clear" as they are now, in part due to the federal No Child Left Behind law, Rutherford says, it sets the "stage for powerful professional development."

One research project, compiled by the NEA Foundation for the Improvement of Education, discovered that teachers must take charge of their own learning to get results in the classroom, according to Robert Ganem, assistant director of programs at NEA. The foundation's research calls for standards and accountability, better collaborative efforts as well as better use for technology and expenditures in professional development, Ganem says.

"When people talk about results they'll start with examining results as to what we want in students, and then examine the knowledge and skills of teachers in relation to what we want in students, and then how the staff development is related to that," according to Stephanie Hirsh, deputy executive director of National Staff Development Council. "There is a real consensus in the field that the teachers as part of learning communities is key and examination of that data is the building block to what they learn."

The Center for Social Organization of Schools at Johns Hopkins University goes further, saying as long as educators have easy access to data, the skills to use it, and the structures to support it, a data initiative helps educators be more productive. "Now that we solved technological barriers, professional development is where this [the use of student data to inform educational decisions] is going to live or die," says Jeff Wayman, associate research scientist. His focus is how to use data to help teachers and principals inform practice. "If we do the professional development correctly, using data is going to be the real boon. It taps into a resource we never had before."

Wayman explains that recent technological advances have created software programs that organize student data and offer user-friendly presentations. "Turning data into information isn't a breeze and hardly any educators have had preparation to do so," he says. "That's why it will be crucial to provide development for educators already in service and preparation for education hopefuls in college."

Cleaning Up a Mess

But getting bogged down with data is the last thing school districts need to do. "School data is messy," Wayman says. Data can consist of standardized test scores, mid-term and final exams, attendance, and dropout rates as well as teacher surveys, classroom observations, report cards and anecdotes. "Some of the most exciting information is collected from students themselves, including examples of their work and their positions and attitudes of their own schools and teaching and learning in their schools," Ganem says he learned in the research.

"If the kids are saying instruction is not tailored to their needs, that is important to know. Conversely, students will tell you when something is very exciting. And you learn project-based learning is a very helpful way for them to gain mastery over the subject matter. Maybe you as a faculty can learn more about project-based learning."

Feeling overwhelmed with information is common, according to a report from the Annenberg Institute for School Reform, *Using Data for School Improvement*. And while some schools will still build their own systems, which is a "long and arduous process," Wayman suggests schools use software to handle all data. But no one system provides comprehensive access to solutions to educational problems, so districts must choose between many types of data systems. Student information systems provide attendance and schedules, but not analysis or data beyond the current school year; assessment systems organize and analyze benchmark assessments but are not designed to provide access to such data over time; and data warehousing systems provide access to historical data but not an immediate turnaround of new data, Wayman says.

Letting it All Hang Out

After various research papers, including ones from The Education Trust and the National Commission on Teaching America's Future, experts found links between quality teaching and student results, though some still say it's hard to pinpoint the exact connection. Often, high-minority, high-poverty and well-performing schools have more focused professional development, Hirsh says.

Eight math teachers at Lindbergh Middle School in Long Beach Unified School District, among the districts experts say has powerhouse professional development, are trained to take data, such as results on exams testing common assessments, analyze each piece of information, learn what it all means, and then figure out how to go back to the classroom to re-teach students to master the concepts next time.

Teachers do this by comparing teaching styles to each other in the same grade, for example. If a sixth-grade teacher has students correctly answer exam problems about the order of operations, she teaches her method of teaching to the teachers whose students were hung up on the problems.

Beyond this, teachers' honesty about their teaching methods is vital, according to Peggy Gutierrez, math department chair and math coach.

The program started four years ago after they learned the school was the lowest performing middle school in the district, Gutierrez says. Gutierrez worked with California Academic Partnership Program, which offered a grant, and other math coaches to design a method for analyzing student work. "This process was a difficult one because for teachers to open up and speak honestly about their teaching methods to their peers and reveal or show their scores, they must be able to trust and feel safe with their fellow teachers," says Gutierrez. "Not all teachers were willing to share as easily as others; therefore, this part took a little time."

Teachers collect student work from selected students, for a random sample, ranging from far below basic to advanced proficient, Gutierrez says. Prior to analyzing student work, the teachers of specific grades will identify problems to be considered, chosen by difficulty and those most stressed on the California Standards Test. They review and analyze specific problems, Gutierrez says., and the

questions they ask themselves include: What is the state standard for this problem? How many students answered this correctly? What is the common error in this problem? Is the problem procedural or conceptual? How am I going to re-teach this concept so that all students can be successful?

Twice a month teachers come together and compare student work through common assessments in reading and writing, which are then used to analyze student work.

The changes have helped the school's academic performance index increase from 423 to 684 and they hope to reach 700 this year, Gutierrez says.

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Accessibility for All

Although honesty about teaching is key, having accessible data is vital for some top districts. At Garden Grove Unified School District in California, which won the 2004 Broad Prize for Urban Education, a "magnetizing, energizing" group of teachers collaborate, communicate and share data about their students, one expert says. Its new Web-based data system is easily accessible to department chairs, teachers and principals who can distinguish what intervention program a particular student should use, such as if a student struggles with phonics or phonemic coding. Quarterly benchmark assessments, allowing for adjustments in teaching during the year, are also accessible online within 24 hours of posting so teachers can see results quickly and learn how they are tied to standards, according to Carolee Ogata, director of K-6 instruction.

The district's data warehouse also includes results from CELDT, California English Language Development Test, which assesses reading, writing, listening and speaking and identifies students at risk for intervention programs. About 70 percent of Garden Grove's 50,000 students are English Language Learners. Results from CELDT are disaggregated by school, grade level, and even teacher.

"Last year, we had a lot of kids in that middle band, early intermediate, and stuck there" for several years, Ogata says. "So we knew we needed to do something for students."

Staff members at the district office act as literacy coaches to teachers using, for example, demonstration lessons. Teachers might also watch videos of successful strategies. A final training session then takes place to ensure a teacher's comprehension.

Long Beach Unified School District in California has a "powerhouse district-level research and data department," according to Jean Rutherford, director of educational initiatives at the National Center for Educational Accountability. The district, which started using data-driven professional development programs in 1996, shows student improvement and performance because it has such a hold on its data analysis, in terms of its focus on grade-level and subject-level materials. If data show that most students struggle with double digit addition, administrators can then look for national resources in considering if the main problem is curricular or staff development, for example. "They see 30 of 32 elementary schools having difficulty in the same area. There has to be a powerhouse training," Rutherford adds.

Principals of each school can also study every objective on a state science test and plan staff development around that, Rutherford adds. "These principals go in and study, what did we miss?" she says. "Is this a problem with the teacher, the grade or across the district?"

Rutherford watched a team of ninth-grade algebra teachers come together in Long Beach for an hour daily, break into groups, and work on common unit assessments, such as end-of-unit exams. "They were sitting on their knees and comparing answers, item by item," she says. "It was truly the best development session."

And the "coolest part" is when that was done, teachers then sat in on an algebra class with students that needed the most assistance. The teacher with the best student scores on objectives on the unit

assessments taught the class as other teachers observed, Rutherford says. "It's beautiful," she says. "That is your real time."

A number of factors come into play. Long Beach created an online data collection system whereby teachers enter data on common assessments given at the classroom level, such as grade level reading assessments, according to Lynn Winters, assistant superintendent of Office of Research, Planning and Evaluation. A teacher logs on to the Research Intranet to access her classroom roster. She can then enter a score or click on a proficiency level, depending on the assessment. From there, teachers can print the results or graphs showing the percentage of proficient students, or an individual student's test score history. Principals can use this for "real time" snap shots of classrooms or curricular areas that may require more support or indicate a need for acceleration and enrichment, Winters says.

"More often, kids are not getting the instructional rigor they need," Winters says. So the question becomes, "What do we need to do starting in grade four or younger to master all concepts so by the time they get to grade eight" they will continue to move along at a proficient rate?

In the Aldine Independent School District in Texas, Principal Nancy Blackwell of Mattie B. Hambrick Middle School uses three-week benchmarks, allowing for instant knowledge when something is not clicking with students. Before spring testing, teachers review assessments and set goals. After TAKS results, they break the answers apart, objective by objective, teacher by teacher, student by student, Blackwell says.

Weekly staff development occurs with principals leading the training. It could range from fractions for math teachers to grammar and writing for language arts teachers, and reviewing objectives for the coming month. Her school is closing the achievement gap between white and minority students, she says. "To me, if your staff development is effective, it prevents teachers from burning out," Blackwell says. "Teachers have to be treated as professionals, looking for new ways to reach the kids."

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Wanted: Dedication

Great strides have been made but there is still no system of teachers sharing with other teachers what is effective and not. Tapping those resources and sharing those practices are still huge issues.

"We don't know precisely what the skills are that teachers need to have to reach proficiency in reading," Hirsh says. "Some districts ... do know. Some are there and some are moving." That's the next phase for data development.

Angela Pascopella is features editor.

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Asking Difficult Questions

According to Peggy Gutierrez, math department chair at Long Beach (Calif.) Unified School District, success can come from training teachers to ask difficult questions about their own teaching methods and implementing ways that data could drive instruction in class.

"This is an easy process to follow as long as all teachers are dedicated and willing to put in the time and effort that is needed," Gutierrez says. "There has to be a skilled and patient coach who can motivate and empower the teachers to be accountable to themselves, to their peers, and to the students."

Some tips include having:

- A supportive administration
- A nurturing, motivating, approachable and supportive coach
- A principal that trusts the coach and allows the coach to make decisions that affect the process
- Teambuilding retreats with teachers to build trust
- Each teacher accountable for the work and the process
- Follow up with teacher one-on-one so he or she feels comfortable
- Every teacher understand expectations and details on how to properly analyze student work.

A Little Help from Software Friends

New York City administrators can pinpoint what standards 6,000 new teachers are choosing to work on while South Carolina educators have easy access to data.

AHA! Educator software essentially helps New York City administrators learn how a teacher is spending time and how to align professional development with strategic initiatives, standards and curriculum, according to Kathy Bocchino, director of the NYC Department of Education Induction Program.

Other programs, such as CompassLearning, PowerSchool, Schoolnet and Co-nect, provide similar resources. Last year, TetraData Corp. partnered with Co-nect in a three-year project to build and deploy a Web-based tool for 60 test and control schools in eight states with an aim to create alternative scenarios on how to enhance instructional practice. Co-nect's Instructional Quality Toolkit helps district- and building-level instructional leaders interpret instructional quality data and target training to key areas. At Love Elementary School in Houston Independent School District, for example, teachers can disaggregate data, take scores from standardized tests and figure out why students answered wrong on any question, according to teacher technologist Patricia Garcia-Perez. "The tools help us pinpoint where we are going off," she says. The school advanced from an "acceptable" rating by the Texas Education Agency to "recognized."

Jersey City Public Schools just started a three-year project that considers all data collected in the data warehouse using Co-nect's DataFlow software, according to Adele Macula, the district's associate superintendent. "Our hope at the end is that everybody can get to this data in an easy fashion and use it to help them," Macula says.

Over the past two years, the district's math scores were poor, with data showing students struggled in statistics, probability questions and measurement problems. DataFlow helps districts move from data management to data analysis. School consultants work with district trainers to deliver school-based staff development in the use of data. Teachers get onsite training, coaching, online support and resources through the Co-nect Data Exchange Web site, which provides best-practice lesson plans. Math scores recently shot up 11 points for the whole student population and up 17 points for limited English proficient students and special education in fourth grade, Macula says.

In New York City, if the reading framework wants teachers to focus on fluency and comprehension at different points in the year, a reading specialist can insert the data in the AHA program, including the strategies used and the end result. "I'm very confident we are going to see two things: retention improved and see an improvement with students," Bocchino says.

In Beaufort County School District in South Carolina, every employee has access to the files, says Sandra Chavez, executive director for academics and accountability. In the system, administrators embed the "power standards", or their version of state standards, and goals tied to critical success factors, Chavez says. From there, teachers take a survey which asks, for example, if they adjust reading instruction to meet diverse learners' needs.