

# Making Data Count

*Transforming schooling through data-driven decision making*

BY NORA CARR

As the accountability and standards movement gathers steam, performance expectations for public school students and staff are skyrocketing. Providing the “opportunity to learn” and pointing to “pockets of excellence” as proof of success are no longer sufficient.

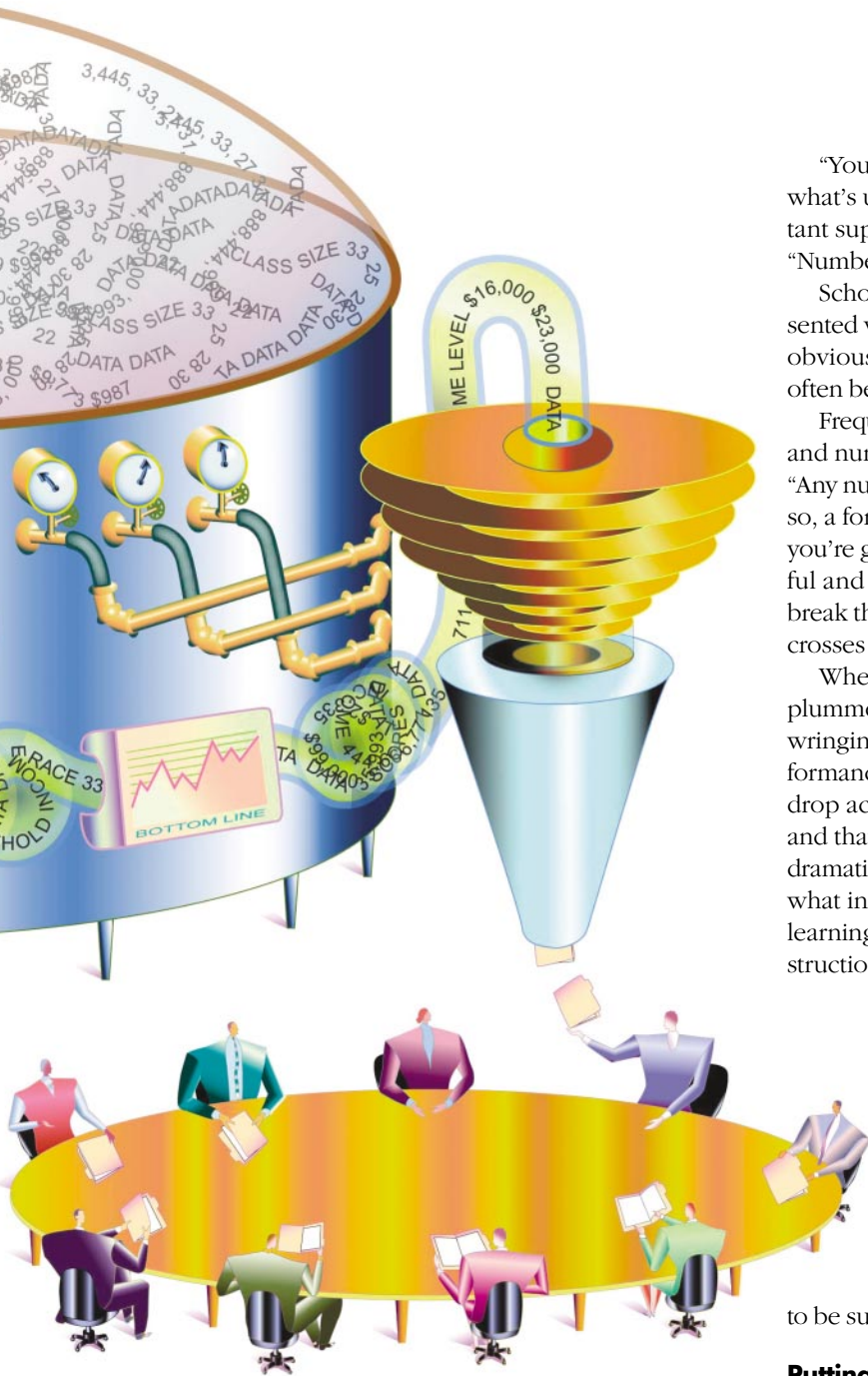
In today’s high-stakes environment, schools must deliver results—quickly, consistently, and for all students. Data-starved school leaders can no longer wait months or years to decide on a course of action or find out whether a new instructional strategy is going to work. Borrowing from business and industry, school leaders are developing a more sophisticated, “just-in-time” approach to research and data analysis to help inform and shape their decisions.

“Better data helps you make better decisions,” says Eric

Smith, superintendent of the Charlotte-Mecklenburg Schools (CMS) in Charlotte, N.C. “Better decisions yield better results, and that’s the new bottom line for school systems.”

Although data-driven decision making was initially focused on education’s core business—teaching and learning—school leaders are now using this approach to transform other aspects of their operations, from human resources and facilities management to school safety and community relations. They’re also building their organizations’ internal capacities in research, planning, quality control, organizational development, and other areas to manage the work and bring new expertise and management tools to the business of schooling.

“In the past, data influenced some of our decisions, but there was still a lot that was based on a hunch or speculation,” says Smith, who is retooling and restructuring his district’s



“You have to take the time to really study data and look at what’s underneath those numbers,” says Susan Agruso, assistant superintendent for instructional accountability for CMS. “Numbers alone won’t tell you what you need to know.”

School leaders sometimes jump to conclusions when presented with a set of numbers, says Agruso. “If you go with the obvious and easy reason,” she cautions, “you’ll find yourself often being wrong.”

Frequently, additional research is needed. And accurate facts and numbers don’t necessarily ensure accurate conclusions: “Any number cruncher can give you accurate data,” says Agruso, a former physics teacher and state assessment director. “If you’re going to draw conclusions from data that are meaningful and useful, you have to get down under those numbers, break them apart, look at trends, and see how the information crosses grade levels, schools, classrooms, and kids.”

When 10th-grade writing scores throughout South Carolina plummeted one year, for example, many policy makers began wringing their hands over the students’ and teachers’ poor performance, Agruso recalls. But further analysis showed that the drop actually occurred during the students’ sixth-grade year and that, in later grades, South Carolina teachers had actually dramatically improved the majority of the students’ skills. Thus, what initially had been perceived as a failure of teaching and learning in the 10th grade really pointed to curriculum and instructional challenges late in elementary school.

Similarly, a group of teachers Agruso worked with in New York, she recalls, were astounded when an item analysis of a chemistry test showed that students repeatedly failed one section not because they didn’t understand the scientific concepts, but because their math skills were weak.

“Science teachers can teach math, and math teachers can teach reading,” says Agruso. “The goal is to meet students where they are and then accelerate their learning so they gain the skills they need to be successful at higher and higher levels.”

### Putting the data to work

Mathematics teachers at a Charlotte middle school used data earlier this school year to help solve a similar dilemma. Frustrated by the small number of students taking algebra by eighth grade, they started analyzing their students’ achievement data. Expecting to find evidence of poor preparation or poor performance in elementary school, they discovered that the vast majority of their students performed on grade level in fifth grade. Further review soon revealed that the real barrier for their students was the math department’s long-standing course sequence and access requirements.

Similar issues surface when looking at other sources of data, from public opinion polls to school-bus efficiency ratings. When CMS analyzed its highest performing schools, several consistent patterns emerged, from the experience level of the teachers to the availability of high-quality classroom materials and media-center supplies.

“back room” operations to provide better support to schools, top management, and the school board. “School systems can’t afford to make educated guesses anymore. When you look at the potential impact on children’s lives, the stakes are simply too high.”

### Getting good data

Getting good data, while an obvious first step, can be a challenge for many school systems, especially those with limited budgets or staff expertise.

Just looking at the numbers—the percentage of fifth-graders who pass or fail an end-of-grade state test, for example, or the cost-per-square-foot for new construction—isn’t going to yield the kind of information school leaders need to develop effective strategies and solutions.

As a result of this study, the district has developed an initiative to provide signing and performance bonuses, tuition assistance, and other incentives to help recruit and retain highly qualified personnel in schools with high concentrations of students who are performing below grade level and show other risk factors.

Along with an aggressive and targeted recruitment effort, other initiatives—including lower class sizes, extensive professional development opportunities, more funding for classroom materials, and additional counselors and other personnel—are helping close the achievement gap. Since the 1995-96 school year, fifth-grade reading scores have more than doubled for African-American students and those qualifying for free and reduced-price lunch.

Careful analysis of data can also save money. When Cooperating School Districts, a consortium of 48 school districts around St. Louis, began tracking how teachers found out about its staff development programs a few years ago, the consortium learned that colleague-to-colleague referrals and highly targeted mailings were its two most potent marketing tools.

The group's glossy, expensive, and award-winning catalog—once viewed as absolutely essential by staff—was dropped, saving more than \$60,000 in printing. Despite the catalog's circulation of more than 20,000 and its five-year history, the marketing director received only one phone call from a customer when the publication was canceled.

### **Fighting information overload**

While some school systems are data poor, others seem to be drowning in so much information that it's difficult to make sense of it all. The key is to focus the district's research and analysis on the issues that will make the biggest difference in terms of student, teacher, and system performance.

"Our research focuses in on our strategic plan indicators," says Carol Eaton, communications research specialist for the Jefferson County (Colo.) Public Schools. "We look at key pieces of data and examine what [each piece] means and what the implications are in terms of what we need to do differently to get better results, both as a department and as a district."

To help put data in context, school leaders should test their information and conclusions against other similar studies. District trends for reading and math can be compared with data from credible state or national sources like the National Assessment of Educational Progress (NAEP; <http://nces.ed.gov/nationsreportcard>) or the Third International Mathematics and Science Study (TIMSS; <http://nces.ed.gov/timss>). Local benchmarks regarding public perception can be tested against the annual education polls conducted by Gallup/Phi Delta Kappa (<http://www.pdkintl.org>) or Public Agenda (<http://www.publicagenda.org>).

Universities, the United Way, hospitals, farm bureaus, and city planning departments often can be valuable (and free) sources for information regarding demographic trends, business development, socioeconomic data, and insight into the current health and future vitality of the community.

Major decisions should never be based on just one source of data. "Whenever you're using one type of method, you're going to have some bias," says Eaton, who gathers feedback from more than 60,000 district residents each year through surveys, focus groups, Internet polling, telephone polls, and group-feedback sessions.

Triangulating the data—researching an issue using at least three methods or perspectives—will help determine whether an issue is a blip on the radar screen or a pattern or trend that's going to hold up over time.

"I really think the questions you're asking should drive the methods you use," says Eaton. "You may hear back from a quantitative survey that the community as a whole thinks you're headed in the right or wrong direction, but it won't tell you why. Putting data into context and making sense of it is one of the hardest things to do. That has to occur at the leadership level."

### **Leveraging resources for results**

By using data more strategically, school systems across the United States are beginning to reap significant results.

"This really goes beyond the personal bent of individual superintendents," says Michael Casserly, executive director of the Council of the Great City Schools. The Washington, D.C.-based council has been studying why some urban school systems engaged in similar reform efforts and with comparable student demographics are getting vastly different results.

"One thing we have found in case studies of school districts making unusual progress in improving student achievement is that it is at least partially driven by good, data-based decision making," he says. "The bottom line for urban school systems is academic achievement. If you don't know where the bottom line is, it's hard to figure out what kind of programming to put in place."

Using data to drive decisions and get better results extends beyond the classroom, however. As school leaders begin to re-focus more exclusively on student learning, they frequently discover they must restructure the entire organization.

Five years ago, CMS was clearly a "system of schools" rather than a "school system," says James Pughsley, deputy superintendent. "We had pockets of excellence, but we did not have excellence across the board as a system."

Charged with moving the district's strategic plan forward and improving quality systemwide, Pughsley turned to loaned executives from First Union bank and Duke Power for assistance. They, in turn, introduced CMS to a new management tool, the balanced score card. Developed and promoted by some of the nation's top business schools, the balanced score card helps organizations track their progress, align their resources, and make midcourse adjustments when needed.

"Most districts have beautiful strategic plans," says Pughsley, who has led planning efforts in small and large, urban and suburban districts in four different states. "Where most school systems fall down is that they don't pay enough attention to execution and implementation. The balanced score card pulls

it all together and helps you focus on those two critical areas.”

Using the balanced score card and other quality management tools, CMS has begun restructuring and refocusing transportation, facilities management, business and finance, instructional accountability, human resources, information services (technology and telecommunications), and public information. The goal is to deliver projects and support services to school-based customers on time and on budget, with an accuracy level at or above 95 percent. Now, for the first time, an internal customer satisfaction survey will be used as part of all central administrators’ performance evaluations.

“One of the most difficult things in our business is the ability to look at ourselves in the mirror,” says Pughsley. “It takes a great deal of confidence, as individuals and as a system, to be able to do that. When it comes to accountability, however, everyone has to [work together], or you’re not going to get the kind of deep changes you need to ensure the success of all students.”

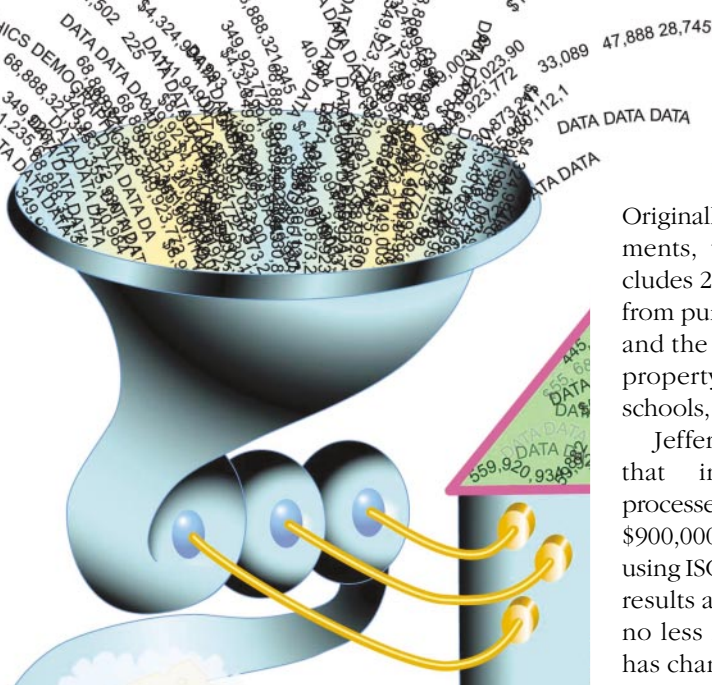
“If you’re not willing to have your belief systems turned upside down, you shouldn’t even get into this,” agrees Agruso. “You have to be very open minded and willing to listen to what the data tells you, even if it goes against your personal opinion or a long-standing philosophical belief.”

### Looking at the big picture

Another helpful tool school leaders can use to reexamine district operations comes from the International Organization for Standardization (ISO), a nongovernmental group that promotes the development of standards for business, government, and society. In addition to a data-driven approach to decision making, ISO says, most quality-improvement programs focus on strengthening seven guiding principles: customer focus, leadership, the involvement of people, continuous improvement, mutually beneficial supplier relationships, an emphasis on streamlining processes, and taking a systems approach to management.

Colorado’s Jefferson County school district is applying ISO 9000 quality management standards to change how its central office serves its 145 schools. Currently used by more than 430,000 businesses in 158 countries, ISO 9000 can help school systems improve their productivity by organizing their people, tasks, timelines, and resources more efficiently and effectively. (For more information on ISO 9000, see the organization’s Web site: <http://www.iso.ch>.)

Jefferson County achieved ISO 9000 certification in 1999.



## MAJOR DECISIONS SHOULD NEVER BE BASED ON JUST ONE SOURCE OF DATA

Originally focused on 14 departments, the initiative now includes 22 departments, ranging from purchasing, food services, and the school board office to property management, charter schools, and athletics.

Jefferson County estimates that improved purchasing processes alone saved more than \$900,000 during the first year of using ISO 9000 principles. Other results are more intangible but no less important. “[ISO 9000] has changed the way we operate,” says Bill Rowley, a 25-year veteran educator and executive director of organizational development for the district.

By working together across departments, he says, Jefferson County is bringing more expertise to the table and solving problems more effectively.

“Talking about interdependence is nice, but we really have to rely on each other now,” says Rowley, noting that most customer-service challenges arise not within a department, but when one department hands over a job to another. “It’s pulled us together in a way that simply wouldn’t have been possible before.”

Rowley says the district’s focus on continuous improvement and ISO certification is also building voter and community confidence. “The strategies and things we’ve put in place are helping create the trust we needed to get our voters and the business community to support us,” he says.

Following the district’s ISO 9000 certification, Jefferson County voters approved the first mill-levy increase in more than 17 years. The measure included a “performance promise” from the district to increase student achievement on state assessments by 25 percent over three years. If the district meets its performance goals, voters will kick in an additional \$20 million.

“Data is important because it informs entire communities about decisions that need to be made,” says CMS’ Smith, who credits data-driven decision making and extensive community engagement for the passage of \$860 million in school bonds since 1996 and a recent \$40 million increase in local funding.

“What we’ve found in Charlotte is that if the community knows and understands the data, [voters] will help support the solution and the corrective action that is needed,” says Smith. “If people don’t know the facts, or if they’re kept from the data, the answers and solutions the school system develops just don’t make sense, and they won’t give public schools the support they need to be successful.”

Nora Carr ([n.carr@cms.k12.nc.us](mailto:n.carr@cms.k12.nc.us)), is assistant superintendent for public information for the Charlotte-Mecklenburg (N.C.) Schools.