Turning data into achievement

How some schools have taken that critical next step

Although No Child Left Behind has its many faults, one important outgrowth of the law has been a focus on using student assessment data to drive instruction. This focus has continued under the Obama administration, which has doled out millions of dollars in federal funding to encourage states and school districts to adopt such practices.

Yet while most schools now measure students' progress more frequently throughout the school year, using this information to target instruction more effectively can still be a challenge. As recently as last year, an Education Department report noted that states and school systems were making significant progress in building educational data systems—but school leaders still were searching for examples of how best to connect student data to instructional practices.

In this Special Report, we'll look at how a handful of K-12 schools and districts have taken this critical next step of turning data into achievement. The schools we surveyed for this report range from suburban Seattle, Wash., to rural Alabama—but all share some key characteristics that have contributed to their success, such as a recognition that turning data into achievement involves changing the entire school culture and can't be done without intensive training and support.

Another key to their success has been the use of a new breed of data platforms that tie together the entire instructional cycle.

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School leaders have been asking for end-to-end solutions that bring together the tools used for instruction, assessment, data review, and professional development, with the ultimate goal of putting real-time data into the hands of teachers and administrators so they can make informed instructional decisions.

Schools have always had data, but typically this information has been spread all over the place. Now, a new breed of data platforms can tie together the entire instructional cycle in one easy system.

Schools have always had data, but typically this information has been spread all over the place, housed in disparate systems that don't necessarily talk to one another.

"Up until now, one of the challenges that customers have had is that they have all of these different assessment pieces in different locations, and they get the data … in different ways," said Deborah L. Smith, director of product and portfolio management for Riverside Publishing, a division of Houghton Mifflin Harcourt.

Education vendors are responding with solutions that tie together curriculum, instructional tools, professional development, and parent outreach—all in a seamless manner.

"We're moving to an age now where we can do all types of assessment through one single system, and all that [ines are faster and more efficient, because administrators can see everything about a single child or classroom with one login. Not only are these systems pulling together the data in one spot; they also can prescribe remedial content based on assessment data, which leads to more personalized instruction.

This is a great new trend, said Ann Ware, project director for the Consortium for School Networking's Data-Driven Decision Making initiative.

She cited the work of Project RED: Revolutionizing Education, which surveyed K-12 districts nationwide and found that one of the most effective uses of technology was in delivering targeted intervention to students. "Providing inventions and using technology to do so was the top factor in improving student performance," Ware said.

formation] comes together in one place," Smith said. And the results can be immediate, giving teachers longitudinal data for each student in real time, at their fingertips.

The idea of using data to inform instruction is not new, but it is now coming to fruition, thanks in part to these more robust solutions. And school districts nationwide are reaping the benefits: from getting off school improvement lists, to increasing graduation rates and making teachers' jobs easier.

The advantages are enormous. Educational process-

Restructuring the school day makes a big difference

To improve student achievement, a Michigan school has restructured its school day to make time for teachers to analyze assessment data, discuss the data with their colleagues, and offer students remediation or enrichment accordingly.

"We use data whenever we can, and I think part of the reason we've been successful is because we found ways to build time in our school day to give staff an opportunity to look at data and to collaborate, but also time in the day for students to take enrichment classes," said Douglas Langmeyer, principal of Ring Lardner Middle School, which serves roughly 550 students in grades seven and eight.

Two to three hours per month, grade-level teaching teams, called Data Teams, meet to discuss assessment results and share strategies. Meanwhile, students head to the computer lab for enrichment classes. They complete self-paced instruction that is prescribed based on recent assessment results, either for remediation or acceleration.

"Building those things into the day has been a huge part of what we've been able to accomplish. It's required us to do some creative scheduling, but doing these things during the day instead of having staff stay late in the afternoon or asking kids to come in after school so we can get to it—that's part of the secret to our success," Langmeyer said.

During Data Team meetings, staff look at pre- and post-test data from regular classroom instruction. They are collaborating, asking: What do students already know? What areas did they miss? How should we design our instruction for the following week? What works? What doesn't?

"The nice thing about the Data Team process is that it's very immediate. If I've given a post-test and I see that, 'Wow, I've really missed the mark in this area,' I can immediately go back and readdress that," Langmeyer said.

He added: "Sometimes with standardized test data … it's almost like it's an autopsy. It tells you what you did wrong or what isn't working, [but] it's so far down the road that you don't really have an opportunity to reteach."

Teachers at Ring Lardner also give common assessments quarterly, to see what kids know from nine weeks' worth of instruction. They use DataDirector and other tools from Riverside Publishing to give these tests and analyze the results.

"That's obviously very helpful," Langmeyer said. "If we taught this particular concept three weeks into the marking period, [and] I find out [that students] still don't have that knowledge, I can put them in this enrichment program that I spoke of."

Currently, Ring Lardner is using DataDirector only for its common assessments, but school officials hope to move all their assessments to the system eventually.

DataDirector captures student assessment data within all levels of instruction. All of the information resides in one place, including state-administered assessments, district benchmarks, and even classroom tests. It also has test-creation capabilities, so teachers can create an online test or an answer sheet for a paper test that is scanned back into the system. Teachers can use their own questions or ones from Riverside Publishing's Assess2Know item bank.

DataDirector also includes a suite of pre-built reports "that are immediately available to report out student performance [in comparison] to state or Common Core standards … where those alignments exist," said Karen Burkhart, director of product management for Riverside Publishing's formative assessment business unit.

The software lets users look at the data in many ways, depending on the questions they might have. "You can break it down by demographics. Any information that is tied to a student ID can be pulled into DataDirector. That enables users to have a really rich data set they can work with," Burkhart said.

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What's more, DataDirector now has the ability to link directly to the instructional resources a school already subscribes to, such as netTrekker or Destination Reading, to offer the remediation students need based on their test results.

"We are really trying to bridge the gap between assessment and instruction," Burkhart said. "Making those links available directly within the assessment report is a great step in making it easier for teachers and administrators to quickly identify the standards that need more instruction, and what resources are available to them within the instructional resource program they subscribe to."

Using assessment data to plan instruction does work. After seeing low writing scores, Ring Lardner officials devised a building-wide initiative to stress writing skills. They trained staff, adopted a structured writing piece, and had kids writing across all curriculum areas, including physical education.

"We've seen some improvements in writing. We are still not where we want to be ... but there's been some improvement," Langmeyer said.

In math, on the other hand, the school's average is 10 percentage points above the state average for proficiency on Michigan's state test. "We have a high at-risk population, and when you consider our demographics, … we've seen some real improvements. It's been continual growth over years—not one year up, one year down," Langmeyer said.

Ring Lardner has achieved these gains despite a student population in which nearly 60 percent qualify for free or reduced-price lunches.

"It's definitely the use of data. It's collaboration. It's also the fact that we've got a strong teaching staff. We've got good people in place," Langmeyer said. "Parental involvement, socioeconomic factors—those things all take a backseat to having wonderful teachers in the classroom."

A web-based, end-to-end system

Using GlobalScholar's Pinnacle Suite as its platform, Washington's Federal Way Public Schools is creating its own web-based, end-to-end system that integrates student information, curriculum, policy, assessment, and professional development. And the real-time assessment data this system makes possible is enabling teachers to differentiate instruction for each student.

"Part of the challenge is that we have a diverse student population with wide-ranging needs, and if we are going to be serious about educating all children, then we have to have … the infrastructure to generate the information that's going to inform daily decisions on instruction," said Robert Neu, superintendent of Federal Way Public Schools, which is 22 miles south of Seattle.

That's where Pinnacle comes in. The software lets teachers extract information and build profiles on individual students, so that teachers can retrieve historical as well as current information about each child. "I can't tell you how important that is. Without it, you can't take differentiated instruction to the level that we need to," Neu said.

Additionally, the district has developed a series of common formative and summative assessments. After teachers give a test, teacher teams get together to discuss the results, share ideas, and form strategies to meet individual students' needs.

"Without that infrastructure, … we weren't able to meet students' needs in real time; we weren't able to have those best-practice conversations in real time, and then it serves no point because the data [are] basically too late," Neu said.

The district is also redesigning its standards system. Starting this fall, all K-12 courses will be aligned, vertically and horizontally, by power standards. There will be no more than 15 power standards in each class and two to three learning targets per power standard, Neu said.

A power standard is the essential component of the curriculum that each child has to master to pass the class and move on to the next level of instruction. Each power standard has to be something that will endure beyond the test; it's got to carry on to the next level of instruction in that content area, and it has to transfer into other areas of the curriculum.

This new system will necessitate individualized instruction. "Some students take longer to … master the standards, [and] those who don't [will] continue to work on it," Neu said. "We've got to be able to collect that [information] on each child to inform daily instruction."

Smart data use can help personalize instruction.

Federal Way has outperformed state and national averages, despite the diversity of its student population—making it one of the top 10 school districts in the state of Washington, Neu said. He expects to see even further student growth as the district realigns its instruction around the power standards.

Pinnacle's ease of use has played a role in the district's success. When it's easy to enter and retrieve data, teachers can make decisions that have more impact, Neu said.

Kal Raman, CEO of GlobalScholar, says the integration of data is a real problem for America's school districts.

"It's [often] too much effort to convert [data] into actionable information," Raman said. "Either the data get collected all throughout the day and people see [the information] after it's too late, or the data get collected without proper statistical modelling or applying some collaborative filtering. It's not actionable even when it's real-time."

Individual coaching pays dividends

An Alabama school district got one of its schools off the school improvement list and increased its graduation rate to 96 percent by using assessment data to inform instruction.

With data analysis and coaching provided by Software Technology Inc. (STI), the school turned itself around within two years, said Dave Sewell, technology specialist for Houston County Schools in southeastern Alabama.

"The school gives [STI] credit, but actually, it was the hard work of everyone put together. STIAchievement data showed where they needed to focus their efforts," Sewell said.

Now, all nine schools in Houston County use STI services to drive instruction. "They saw the success at the first school, and they were eager to copy that success," Sewell said of the other school leaders. The rural district, in which 76 percent of students qualify for free or reduced-price lunches, has seen improvement in all of its schools that have been working with STI for more than a year, he added.

STIAssessment lets educators do benchmark testing throughout the year, in four subject areas from third grade through 12th grade. The tests can be taken online for immediate results, or the answer sheets can be scanned back into the system for marking. STIAcheivement lets users pull a myriad of reports based on different criteria.

STI pairs its suite of software tools with in-person professional development and coaching. The company, which started in student information systems 25 years ago, has professional coaches—mostly former school improvement specialists—who travel on-site to a school or district to design a custom program.

First, the coaches analyze data collected through STI's formative assessment program, benchmark testing, and even high-stakes testing. Then, during a series of meetings, the coaches explain the results in terms of strengths, weakness, and goals. They also help teachers develop pacing guides, change instructional strategies, or develop individual student lesson plans—whatever is needed based on the data analysis.

"We will build a plan for [teachers] based on what we know from the data three to four years ago and where we stand today. And we will work together in partnership to raise those weaknesses and maintain those strengths," said Jenna Wood, marketing director for STI.

She continued: "Ours is not a cookie cutter-type service, where one model fits all. We actually customize every plan based on each individual school. And then we work our plan around that, and who our coaches need to be, and we determine how many days we would suggest for this type of service."

The coaches not only analyze data and prescribe remediation, but also focus on getting teacher buy-in and raising moral, Wood said, adding: "They become part of the district. They get down and dirty with the teachers and assist them in anyway possible."

Benchmarking once again is key

Like the other districts we talked to, North Carolina's Granville County Schools attributes its success in turning data into achievement to teacher training and support, frequent benchmarking, and regular meetings to discuss the data. Granville County also uses longitudinal data to predict a student's future performance on state exams.

"Our high schools have noticed a huge jump in scores, and our elementary schools, grades three to eight, have had a 14-percent increase," said Superintendent Timothy J. Farley.

The district started using its data analysis tools in earnest two years ago. For data analysis, Granville County uses Education Value-Added Assessment System (EVAAS) from SAS Institute. The system takes multiple years of data and predicts how a child will perform in the next grade level based on that prior information, and it also generates other data reports.

For benchmarking, the district uses the ClassScape Assessment System from North Carolina State University. "Not only do we know where we start from using EVAAS, we check along the way to make sure our teaching and learning are aligned," Farley said.

One of the biggest challenges was training principals and teachers to read, interpret, and use the data correctly. Now, teachers meet weekly to discuss the data and plan lessons and assessments. They also align the curriculum and assessments "to make sure what is taught is tested and what is tested is taught," Farley said.

Using data has been key in eliminating any bias a teacher might have in recommending a student for more advanced coursework. "In particular, we've used it to place more students in Algebra 1," Farley explained.

Not only does the district use data to inform instruction, but officials have done audits in every department—resulting in huge cost savings.

"We've managed to save a huge amount of money in using data to change our operations," Farley said. "We saved well over $1 million on our maintenance, transportation, and technology side of the house." eSN

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