



How Districts Use Data to Drive Proactive Decisions

Benefits and Best Practices for Creating a Data-Rich Culture

CONCLUSIONS PAPER

Featuring:

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Introduction

Education leaders know it is no longer enough to collect data just to deliver mandated reports. It is time to use diverse data sources to make better, fact-based decisions that improve educational outcomes and the use of scarce resources.

With greater pressures and accountability on schools, hindsight reporting is no longer enough. “Data use must evolve into a more proactive and interactive flow of information,” said Ann Ware, Director of the Data-Driven Decision Making Project of the Consortium for School Networking (CoSN). CoSN is a national professional association for school system technology leaders, providing tools and resources to help school districts make better use of their data.

In an April 2012 webinar hosted by *Education Week*, education professionals from CoSN and Rock Hill (SC) School District 3 discussed an information environment that can integrate data from across the district, track information over time, uncover trends and equip decision makers with self-service reporting – and the culture shift that has to happen to make this all possible.

“It starts with a commitment by all stakeholders to use data for continuous improvement at the school and district levels. District and school leaders should model data-driven decision making as a key aspect of their roles and responsibilities.”

Ann Ware

*Data-Driven Decision Making Project Director,
Consortium for School Networking (CoSN)*

What Is Driving the Need for More Effective Data Management and Use?

“Gone are the days when school superintendents or boards of education would look at the data at the end of the year,” said Ware. “Now they want to know ‘how are we doing?’ throughout the entire school year.”

Parents, community members, teachers, education administrators and policymakers want to be able to answer that question, and many others, at any time. Media outlets want to know how taxpayer money is being used and what the community is getting for its investment. And a growing body of initiatives to improve educational quality – such as Common Core Standards, Common Core Assessments, No Child Left Behind and Race to the Top – are adding new layers of accountability, for which trustworthy data is crucial.

“These are the kinds of forces that push us toward a more data-rich culture,” said Ware. “K-12 educational leaders recognize the need for shifting the district culture away from what has sometimes been seen as a unitary focus on data – by maybe a single person or department – to one where everyone in the district understands and applies the right data at the right time in support of improved learning.”

Commitment at the Local and National Levels

That data-driven ideal is the mission of the Data Quality Campaign (DQC), a national, collaborative effort to improve the availability and use of high-quality education data to improve student achievement. By the DQC’s assessment (and surely beyond dispute), it is time to move beyond data collection merely for compliance and aggregated reporting. It is time to make more effective use of data to answer critical questions facing all education stakeholders. It is time to use the data to shine a light on what is working, and use those insights to make better decisions at all levels.

Why a Data-Rich Culture?

- Gone are the days of “how did we do?”
- Stakeholders need data access throughout the entire school year.
- Data points must be correlated across disparate sources for richer insights.
- Insights must be gained in time to be useful for improving educational outcomes.

“Every state now has the ability to improve student achievement using data that follow individual students over time. However, many states have not yet made this a reality. Policymakers must act now to ensure data are not only collected but used to empower all stakeholders to make informed decisions to improve student success.”

Data Quality Campaign
dataqualitycampaign.org

What Does a Data-Rich Culture Look Like?

For many school districts, a data-rich culture remains a future vision, but the technology is available and so is the support. For example, the national Data Quality Campaign provides tools and resources to help states establish and use longitudinal data systems. The CoSN Data-Driven Decision Making Project helps districts implement data initiatives and better understand how to use data to improve the learning process.

In a data-rich culture:

- Student data of different types and from different sources is linked to create a richer and more comprehensive understanding of students' performance and trends over time.
- School- and district-level data can be shared and compared across the state to track students as they move, gauge relative performance, and identify and learn from the highest-performing schools.
- Longitudinal data enables predictive analysis, so educators know immediately if a student is on or off track and can plan appropriate interventions and instruction.
- Schools, districts and states connect disparate data, analyze it to answer specific questions, and deliver the answers in a timely and user-friendly manner.
- All education stakeholders, from parents and students to educators and policymakers, have trustworthy information to make more effective decisions.
- Data is delivered fast, online, on demand to authorized users within established business rules and processes.
- Data-driven insights are presented graphically through online dashboards tailored for each user's unique needs and role.
- Data is high quality and trusted, because the stakeholders closest to the data are accessing it, catching errors and quickly resolving them.

Seven Keys to Fostering a Data-Rich Culture

Achieving a data-rich culture will require more than old-school ways. Traditionally, data collection has been driven by reporting requirements and box-checking – and has often been used in a punitive way. Often the information arrives too late to be of use. After stacks of papers and spreadsheets have been transformed into usable insights (and standard reporting requirements have been fulfilled, with much manual process), the student has already moved on.

The specific data management, analysis and reporting infrastructure will look different for each school district, depending on its needs and resources. However, school districts that successfully foster a data-rich culture will address seven key elements¹, said Ware:

1. **Clear vision.** “Often in the strategic planning process, or some type of continuous improvement planning process, the superintendent sets a vision for the district on data and how it’s going to be used,” said Ware. “Evangelizing that vision leads to a common language for school leaders and teachers and students about the value of that data-rich culture.”
2. **Learning from colleagues.** “Recognize the value of learning on the front end what has worked and what has not worked,” said Ware. The best way to do that is to learn by those who have gone before you. “Educators are very aware of the value of learning from one another.”
3. **Self-review and analysis.** You need to be able to ask the tough questions and answer them candidly. Do you have the commitment and resources? What kind of infrastructure will you need? How will you bridge the gaps between today’s patchwork or manual systems? What processes need to be put in place?
4. **Commitment and trust.** Change creates fear, especially for those who might foresee data being used to judge and punish. Ware recommends starting by asking teachers what information and answers they want to see, and then consider how the data relates to that.
5. **Professional development.** More than technical training in the use of data systems, many districts are having teachers participate in formal or informal professional learning communities to discuss data issues and ways data can be used to inform their work.
 “When I was the districtwide chief technology officer, I often heard the question, ‘I see the data, what does it tell me to do next?’” said Ware. “It can be valuable to provide opportunities for teachers to collaborate with each other and with those who are very knowledgeable about the data to collaborate, talk about trends and determine how that informs the pedagogy they are using in their classrooms.”
6. **Data meetings.** Bring educational leaders at the school and district level together to discuss data processes, progress and utilization, and give teachers access to that information.
7. **Barrier-free data flow.** Establish policies or guidelines that ensure people can access and use the data as appropriate to their roles, but without compromising student privacy or granting more access than necessary.

¹ Mills, Lane B. *Creating a Data-Driven Culture: Leadership Matters*. SAS white paper (2011).

Best-practice districts – those that excel at using data for making the best operational and instructional decisions – go beyond the seven keys and share four distinguishing characteristics, said Ware. These districts:

- Get high-level commitment and advocacy for the project.
- Use a variety of standards-based measures to inform instructional decisions.
- Adopt a continuous improvement model that tracks key indicators over time.
- Design and implement a data governance strategy to ensure data quality.

“Best-practice districts are proactively monitoring data quality on a daily basis,” said Ware. “They provide professional training to data entry personnel at the school level and district level to ensure that data quality processes are in place. Some districts also include measures about the effective use of data (not just compliance use of data) into staff performance assessments.”

How Rock Hill School District 3 Achieved a Data-Rich Culture

“Prior to using SAS, our data environment was a little bit rough,” recalled Dan Ralyea, Research Specialist in the Office of Instruction and Accountability at Rock Hill School District 3 in Rock Hill, SC. “Data collection was primarily typing into a spreadsheet. If you wanted to compile any information about specific groups of students, you had to look up their information and then plug it in, in order to gather it. So a teacher could spend a good amount of time just going through student records trying to get a handle on who is going to be entering the classroom.”

The district has the state-mandated PowerSchool student information system, but that system does not meet all the reporting requirements, said Ralyea. “PowerSchool does its job very well. It gathers information well, and it can produce the information that has been entered, but it is not designed to handle the information in its native format. Somebody has to get it from the text file that you download from SAS or the spreadsheet that comes in from the state government and get that into PowerSchool – and then you might be able to pull up one test result on one student, for example. But it is not designed to do any analysis or compile information for reports. That’s just not its intention.

“Now [with the district’s data platform based on SAS] it is basically a matter of logging in, and every principal and teacher will have access to a student’s profile. That’s a big change in information access. We’re not limited to predefined reports anymore; we can gather information on the fly and do comparative data very quickly.”

“Many school districts today have quibbles between parents and teachers. Where parents can have access to student information on a regular basis, they can be involved and be a part of that conversation during parent-teacher conferences.”

Ann Ware

*Data-Driven Decision Making Project Director,
Consortium for School Networking (CoSN)*

A former math teacher, Ralyea is revolutionizing the use of data in Rock Hill to not just weather budget cuts, but to also identify students for advanced math, standardize teacher training, and look at information across student groups in a way that the state’s own mandated student information system can’t do.

The new data platform puts data at the front lines, supporting day-to-day decisions that help teachers, students and principals, said Ralyea. “This is the most exciting part of the SAS system. A summary profile of each student in the class will be available to teachers before the first day of school, and it will automatically update as students transfer within the district. The profile will have the student’s complete MAP [Measure of Academic Progress] test history, student performance summary and information by substrand across their academic history. The information will be pushed out to ESOL teachers and special education teachers.

“SAS enables our version of data governance, allowing us to control who sees what information, so we do not have data about every student in every class broadcast out to people who don’t have need to see that information. It is limited to teachers’ need to know the information about their classrooms and their students. So we’re able to maintain privacy for the students and only give people the information that’s relevant to their jobs.”

The Rock Hill School District data platform also uses a rubric that identifies students for accelerated classes, based on multiple inputs, such as grade point status, MAP scores, state exam scores and teacher input. “This rubric removed a lot of subjectivity that was in the selection process before,” said Ralyea. “Teachers are now able to identify students across a broader spectrum of information. Maybe the quiet student who wasn’t jumping up and down all the time but got the answers right is now included, where perhaps that student might not have been noticed before.

“Another nice thing about the data-driven selection process is that I don’t have to be the one to tell the parents that their child isn’t gifted. You can present all the information across the data that you have and say, ‘Look, this isn’t necessarily the best placement for your child.’ Parents might still present their concerns, but at least now you have a clear rationale for why you’re making the choices that you do.”

Ralyea described a recent case where a parent thought a teacher graded too harshly in giving her child a 2 (“Developing”) on a particular standard. “We were able to show the list of the indicators the child has mastered and has not mastered, the MAP score and other assessments, and present a whole picture for the parent.” Facts make the case and engage the parent in the process.

“Principals use the data for setting up small group interventions. They can pull up the information, look at how a child is doing on a substrand, and use some flexibility in the schedule to set up small groups across a grade level to work on a particular standard. Students aren’t stuck there for a year because they didn’t do well on a particular assessment; they are reassessed, and if they no longer need that intervention, they can move on to either an enrichment opportunity or perhaps another skill on which they need improvement.”

Quick Facts: Rock Hill School District 3

- Eleventh-largest school district in South Carolina.
- Includes city of Rock Hill and surrounding area.
- Greater than 50 percent subsidized meal population.
- Recent school district rezoning to balance demographics.
- Spends about \$8,800 a year per pupil.
- Employs about 1,300 teachers.

“It is an amazing thing, the way we’ve been able to empower teachers and administrators to make decisions about curriculum, to evaluate programs, and to remove some of the subjectivity to decisions that we make about the curriculum and the way we do our jobs. It is a very, very powerful tool.”

Dan Ralyea

Research Specialist, Office of Instruction and Accountability, Rock Hill School District 3, Rock Hill, SC

The unified data platform can deliver new observations and comparisons that can be enlightening. For example, which interventions are producing the best results? Which data points have the most predictive value? Ralyea analyzed students who had passed the high school exit exam and found that their eighth-grade ELA assessment was actually more highly correlated with the exit exam results than the high school English 1 EOC exam. Knowing the predictive value of that eighth-grade score, educators can take action earlier to help at-risk students.

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SAS® for Education

“SAS solutions are licensed and implemented at more than 3,000 educational institutions worldwide, and we have more than three decades of experience working with education,” said Georgia Mariani, Product Marketing Director for Education at SAS. “With SAS, you can gain access to consistent and trustworthy information from a wide variety of sources. SAS can pull data from your student information system, personnel, facilities, finance and more. Wherever you have information, SAS can get to it.

“Once your data is cleaned and housed in a data warehouse, you now have ‘one version of the truth’ in which to do reporting and analysis. You can give users secure, self-service access to the information they need, in the format they need, at the time they need it. And you can go one step further to analyze the data in order to predict outcomes and intervene to help students reach their potential.”

Consistency and self-sufficiency are built into the SAS structure, said Ralyea. At the district level or IT level you prepare the data warehouse, create information maps that build the relationships between data tables, and establish common procedures for coding, labeling and calculating. Report consumers have the option of using reports previously designed or creating reports on the fly using a simple drag-and-drop interface. No programming is required at the school level.

“Along with the Web portal interface, SAS also enables you to interact directly with Microsoft Office,” said Ralyea. “You can pull a SAS table, hit the raw data (if you have permission), download it to Excel, and do whatever you want with it.”

SAS Education customers can choose an on-site or hosted solution. Either way, the system can evolve and expand to match changes in data requirements, such as new Common Core Standards and Common Core Assessments. “If you have designed your data warehouse well, you won’t need to make any changes in the way the data is stored,” said Ralyea. “The reporting will change, but the data warehouse itself should be able to correlate a score with a standard with a student with a point in time,” even as external reporting requirements change.

“People need to understand that this is about continuous improvement, not about punishment or looking to somehow devalue a person. The value is still there; we’re just looking to how we can maximize the utility that each person brings to the education system.”

Dan Ralyea

Research Specialist, Office of Instruction and Accountability, Rock Hill School District 3, Rock Hill, SC

- Replace hunches with solid evidence to drive decisions.
- Integrate data across the district.
- Equip all decision makers with self-service reporting.
- Identify current and future trends for better decision making.

Closing Thoughts

“As districts are facing an ever-increasing ocean of information, the importance of establishing and maintaining a data-rich culture to improve student outcomes is increasingly needed,” said Ware.

For achieving the requisite level of data-driven decision making, “SAS is a great tool,” said Ralyea. “You just have to convince people that you’re going to be using it for the common good, that the purpose of this is to look at how we can all grow together.”

To create a culture that encourages the use of data to improve instruction, you need to build trust with stakeholders. Engage them in an ongoing dialogue about what data is being collected and how it is being used. Start by asking people what questions they want to be able to answer, so you can deliver data that will be meaningful and relevant to them.

“The important thing is communicating the vision and value of the reporting and analytics across the board,” said Ralyea. “We need to build an awareness that reporting and analytics will be used to accurately assess the current state without judgment and to collaborate on how to improve the current state. The message that you want everybody to walk away with is that this is not about finding a way to make you look bad, or finding ‘gotchas.’ This is about understanding the reality as it is right now so we can make it better.”

About the Presenters

Ann Ware

Data-Driven Decision Making Project Director,
Consortium for School Networking (CoSN)

Ann Ware serves as an educational consultant to local school districts, local and national educational organizations and the private sector. She has worked in the Georgia K-12 educational community for more than 30 years with experiences at the classroom, school, district and state levels.

For 10 years, she served Henry County Schools as the Director of Technology Services and fostered the value of strong school improvement relationships among district and school leaders. She served the state in her work at the Georgia Department of Education while working as the Associate Superintendent for Instruction and then the Interim Deputy Superintendent for Technology Services.

“As districts are facing an ever-increasing ocean of information, the importance of establishing and maintaining a data-rich culture to improve student outcomes is increasingly needed.”

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*Data-Driven Decision Making Project Director,
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“Sustaining a culture of data is a lot like teaching somebody to use a fork. Before you learn how to use one, you might wonder why you would need it, but after you’ve started using a fork, you can’t imagine not having that tool.”

Dan Ralyea

*Research Specialist, Office of Instruction
and Accountability, Rock Hill School
District 3, Rock Hill, SC*

Dan Ralyea

Research Specialist, Office of Instruction and Accountability,
Rock Hill School District 3, Rock Hill, SC

Dan Ralyea is responsible for preparing and analyzing data for superintendents, principals and teachers so they can make proactive, data-driven decisions. As a former math teacher, he is promoting the use of data in Rock Hill to not just weather budget cuts, but to also identify students for advanced math, standardize teacher training, and to look at information across student groups.

Georgia Mariani

Product Marketing Director for Education, SAS

Georgia Mariani has been with SAS for almost 14 years. In her current role, she works with customers to share best practices, successes and recommendations that enable education institutions to get the most productive insights from their data. Previously, Mariani managed analytic strategy and consulted with sales prospects in the government and education industries to answer their business analytics and software implementation questions.

For More Information

On-demand archive of the presentation: *How Districts Use Data to Drive Proactive Decisions* – event.on24.com/eventRegistration/EventLobbyServlet?target=registration.jsp&eventid=416885&sessionid=1&key=5A754A6785DAD2D597FA670E977C54CC&partnerref=TOC&sourcepage=register

White paper: *Best Practices in Information Management, Reporting and Analytics for Education* – sas.com/reg/wp/corp/42935

White paper: *Creating a Data-Driven Culture: Leadership Matters* – sas.com/reg/wp/corp/27579

Webcast: *Data Systems That Enable School Leaders to Make a Difference* – sas.com/reg/web/corp/1500813?page=reg

Customer success story: *Rock Hill School District Depends on Data to Ensure Instructional Dollars Are Used Effectively* – sas.com/success/rockhill.html

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