



## Lessons for a Data Culture

Adapted from *Implement, Improve and Expand Your Statewide Longitudinal Data System: Creating a Culture of Data in Education*

by Jamie McQuiggan and Armistead W. Sapp III (Wiley 2014)

School systems no longer can afford to make decisions without data, and forward-thinking leaders in education have absorbed this lesson. Proactive data usage enables more accurate warning systems, better individual outcomes and a better microscope on what is working in education.

But it's not enough to implement technology and tools; educators and administrators must be prepared to accommodate and eventually embrace them. Readiness to do so varies widely from system to system, school to school – even from classroom to classroom. Data use is increasingly a daily reality for teachers, so while it is not new, there are very real misconceptions and negative experiences to overcome.<sup>1</sup>

So how do education leaders facilitate the culture-of-data mentality and incorporate data-driven decision making into daily activities? Which tools can they harness to enable the key connections to be made?

### Leadership

Strong leadership is essential for establishing a culture of data. The vision and goals should be discussed frequently and backed up by policy initiatives that reinforce behavioral changes and reward good data use. In any shift to data-driven culture, if the buy-in and vision do not guide the group toward the new procedures and shifts, there is a risk that the project will fail.

Local leaders also have the important role of enabling greater data use within the schools. If there are established policies that reinforce data silos (e.g., this department maintains this data set and no one else can see it), leaders need to tear down these walls and establish new sharing

policies.<sup>2</sup> They're also the ones who will establish professional development programs, which can position the system for ultimate success.

### Confidence in the system

To prove its usefulness to teachers and administrators, there must be confidence in the system's output, meaning that high levels of trust in the data and trust in others exist.<sup>3</sup>

A strong data quality process and governance will provide assurance in the data and process as a whole, though each user of the system has a responsibility as well. These policies should be shared with each user to promote this understanding and trust in data quality.

If the results of reports and data analysis can't be trusted because of poor data quality, what would compel educators to continue to lean on this resource to drive their classroom decisions? A feedback loop is essential in building trust and quality data. In that same vein, there must also be a high level of trust in the community, such that the other users and

administrators of the system are ensuring the data quality and using the data to achieve a common goal.

### Redefine data and its uses

No Child Left Behind (NCLB) introduced more achievement data and accountability requirements to schools than had ever been seen previously. The huge uptick in standardized tests has given schools more achievement data than ever to interpret, though the law only requires this data be used as a compliance tool.

To effectively create a culture that embraces data, it is essential to:

- Foster trust in the data efficacy and the process.
- Be clear about what the data is used for.
- Use and share data often.
- Take part in professional development to learn and maintain the right skills.

## Data-driven decision tools

How to increase graduation rates, how to provide personalized learning for all students and data usage by educators are all issues where longitudinal data promises to change the equation. Here's a quick rundown of two tools that use longitudinal data and create the opportunity to make a breakthrough in some of the most relevant educational issues of our time:

- **Response to intervention (RTI)** is an official process that schools use at the classroom level to systematically identify students' academic and behavioral needs, intervene and track the responses to those interventions using data. It offers the ability to look at the effects of specific interventions on certain academic or behavioral problems. RTI involves monitoring student progress over time and adjusting methods used depending on the student's response.<sup>6</sup>
- **Early-warning systems (EWS)** use longitudinal data to answer important questions, producing alerts when certain conditions are met. They can be logically programmed to target key questions, and when using longitudinal data, are a great way to use data in a timely fashion. These systems send an alert or assign a risk level to students meeting certain criteria, with the hope that their trajectory could be changed through interventions by educators and they'd still be able to successfully graduate high school.



While NCLB does create more data and primes the education system for a shift to a culture of data, in and of itself it doesn't provide the framework for data-driven decisions. Making the leap from data to useful information is the next big hurdle in bringing the culture of data to the classroom.

Say it loud and say it often: Statewide longitudinal data systems (SLDS) and related data initiatives are not simply standardized test scores.<sup>4</sup> They provide access to rich and varied data for educators. They provide access to more types of data, enabling a move from the NCLB-enforced accountability model to the continuous improvement model.<sup>5</sup>

The ability to move beyond standardized test scores and to use the scores to learn about students in a timely fashion provides tools for teachers that have never before been available. From longitudinal data, instructional changes oriented toward increased student achievement become a reality. For teachers, this cultural shift in how the data is viewed makes all the difference. Data becomes an enabler, a job aid, rather than an obligation and a method of judgment.

### Teacher education and professional development

It's fair to say that the existing statistics and data analysis education required to receive a teaching license are not sufficient to meet the growing demands on our educational system. To truly rise to the challenges in a data-driven culture, teachers need to be proficient in principles of assessment and statistics, as well as comfortable with the technology used to deliver this functionality.<sup>7</sup>

Teachers are used to, and indeed have been trained to, receive certain data on students. Without education on how to incorporate new and more plentiful data into their day-to-day activities (lesson planning, testing, addressing student needs), there's no reason they won't continue to use the data in the same ways and for the same purposes. Trainers must be brought in to inspire them to break out of the box in which they've operated before and entertain new possibilities. Training sessions should be recurring to encourage ongoing data use and skills enhancement. Using real data is also recommended to paint a clear picture for teachers about how data usage can change outcomes for their students.

Fostering a collaborative learning environment among teachers establishes a strong foundation for building a proactive data culture. Make no mistake, there is a lot to

learn in incorporating a culture of data-driven decisions in the classroom, so creating a group learning experience is a great way to set up the system to succeed.<sup>8</sup> The learning community process mirrors the scientific process taught to students today. Data teams work together on how to improve teaching – examining data, and learning, and sharing findings with colleagues.<sup>9</sup>

As time goes on, and the data proves useful in initial instances, administrators and educators will begin to see the possibilities. They'll ask more sophisticated questions, realizing they can get answers that are more specific and targeted than they ever could before.

Several studies have found that teachers' confidence in their data skills affects the likelihood of using data to make decisions. A strong combination of teacher preparation programs – including data analysis in their course of study, in-service training and ongoing collaborative working groups – can foster confidence and proficiency to effectively use data in classroom decision making, facilitate a stronger data culture and make real progress toward the ultimate goal: providing the best possible education for all students.

1. Amy Wilkinson, interview with author. July 27, 2012.
2. Lane B. Mills. *Creating a Data-Driven Culture: Leadership Matters*. SAS white paper, 2009. [http://www.sas.com/en\\_us/whitepapers/data-driven-culture-104995.html](http://www.sas.com/en_us/whitepapers/data-driven-culture-104995.html).
3. Data Quality Campaign. *What Is Data Literacy and How Do We Achieve It?* July 17, 2012, webinar.
4. Ellen B. Mandinach, Edith S. Gummer and Robert D. Muller. *The Complexities of Integrating Data-Driven Decision Making Into Professional Preparation in Schools of Education: It's Harder Than You Think*. Report from an invitational meeting, May 12, 2011.
5. Ellen B. Mandinach and Sharnell S. Jackson. *Transforming Teaching and Learning Through Data-Driven Decision Making*.
6. Rachel Brown Chidsey and Mark W. Steege. *Response to Intervention: Principles and Strategies for Effective Practice*.
7. Ellen B. Mandinach and Sharnell S. Jackson. *Transforming Teaching and Learning Through Data-Driven Decision Making*.
8. Ellen B. Mandinach, Edith S. Gummer and Robert D. Muller. *The Complexities of Integrating Data-Driven Decision Making Into Professional Preparation in Schools of Education: It's Harder Than You Think*.
9. Nancy Love. "Taking Data to New Depths." National Staff Development Council Vol. 25, No. 4 (Fall 2004).

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