

Principal's Research Review

Supporting the Principal's Data-Informed Decisions

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Creating a School Culture That Supports Data-Based Instructional Decision Making

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The explosion of student data at every level of the education system during the past decade has increased the pressure to use those data to drive instructional decisions. The No Child Left Behind Act of 2001 introduced regulatory requirements that gave administrators and teachers access to more data than ever before. The growth of Response to Intervention (RTI) has also contributed to the push for data-based decision making. To implement RTI, schools use data to provide high-quality instruction and interventions matched to individual student need, monitor progress frequently, and apply the data to classroom practice in a continuous cycle.

Another development driving data use is the widespread adoption of the Common Core State Standards (CCSS), which represent a coherent progression of learning expectations in English language arts and

mathematics that are grounded in evidence about what it takes for high school graduates to be ready for college and careers. The standards define the knowledge and skills students should have each step along the way in their K–12 education, emphasizing learning goals, describing end-of-year expectations, and focusing on results. As part of the CCSS initiative, most states have committed to work together in one of two consortia that are developing the next generation of summative and formative assessments.

Lastly, advances in technology have added to the ready availability of data in districts and schools. According to a national survey of district technology coordinators and teachers, there has been a significant increase in teachers' access to student data systems. The percentage of teachers who reported accessing data systems jumped from 48% in 2005 to 74% in 2007 (Gallagher, Means, & Padilla, 2008).

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Just the Facts

- The percentage of teachers who reported accessing data systems jumped from 48% in 2005 to 74% in 2007 (Gallagher, Means, & Padilla, 2008).
- Educators analyze data together in order to understand their instructional practices, build knowledge of the impact on student learning, and solve problems (Marsh et al., 2006).
- The first step in developing a data-driven school culture is recognizing that raw data must be translated into knowledge and actions (Marsh, Pane, & Hamilton, 2006).
- Teachers who have been members of successful data teams report that school leaders modeled the use of data, included them in decision making, and responded to their opinions and feedback (Mason, 2002; Sharp, 2004).

At the same time, teachers reported that they were more likely to have access to students' grades and attendance than to achievement data: only 37% reported that they had electronic access to achievement data for their students.

Recommendations for Practice

Although policies and programs that encourage data-based decision making in schools have grown along with the available data, there is limited evidence from research about the practice. Most of the current research is descriptive and does not examine the impact of data-based decision making on student outcomes. It is also challenging to isolate the direct impact of data-based decision making because it is usually part of a broader school improvement initiative or is coupled with other change efforts.

The limitations of the research on data-based decision making are reflected in the practice guide *Using Student Achievement Data to Support Instructional Decision Making* (Hamilton et al., 2009). The panel of experts acknowledged that the level of evidence for each of the recommendations was "low," meaning that the research does not support any causal claims that the practices result in positive effects on student outcomes. Despite the limited evidence, Hamilton et al. (2009) recommended five actions that districts and schools can take to support data-based decision making:

- Make data part of an ongoing cycle of instructional improvement
- Teach students to examine their own data and set learning goals
- Establish a clear vision for schoolwide data use
- Provide supports that foster a data-driven culture within the school
- Develop and maintain a districtwide data system. (p. 8)

Translating and Using Data

What exactly is a data-driven culture? And what types of supports are necessary to create one in a school? In general, school culture includes the

expectations and beliefs that guide the actions and behaviors of educators and students (Firestone & Gonzáles, 2007; Heritage & Yaegley, 2005). In many studies, school culture has influenced how administrators and teachers use data. In a data-driven school culture, administrators and staff have a thorough understanding of how data inform instructional decisions, and they possess the knowledge and skills to use that data appropriately. To create this environment, school leaders can offer supports such as a data facilitator or coach, structured time for collaboration, and targeted professional development (U.S. Department of Education, n.d.).

The first step in developing a data-driven school culture is recognizing that raw data must be translated into knowledge and actions (Marsh, Pane, & Hamilton, 2006). The increased availability of data does not necessarily mean that schools have the systems and supports in place to use the data and make sense of the implications for decision making (Knapp, Swinnerton, Copland, & Monpas-Huber, 2006; Light et al., 2005).

In a recent interview, Herman (Education Northwest, 2011) pointed out that

...typically, there is more data than teachers [and administrators] know what to do with....They see it as a lot of numbers, and they don't necessarily know how to make sense of it. They don't always approach the data with questions that they want the data to help answer. If you don't approach it that way, it can become overwhelming. (p. 16)

Therefore, the key to a successful culture of data-based decision making is enabling teachers and administrators to frame research questions appropriately, identify data to answer those questions, interpret the data accurately, and create actionable knowledge.

Fostering Collaboration

Collaboration among staff members is essential to accessing, interpreting, and applying data.

Educators analyze data together to understand their instructional practices, build knowledge of the impact on student learning, and solve problems (Marsh et al., 2006). Teachers also rely on one another to discuss data and identify implications and actionable ideas, as well as share new instructional strategies (Datnow, Park, & Wohlstetter, 2007). Hamilton et al. (2009) asserted, “Collaborative data analysis can highlight achievement patterns across grade levels, departments, or schools, and can engender the kind of consistency of instructional practices and expectations that often characterizes high-performing schools” (p. 35).

To develop a collaborative environment, Dufour (2004) advised schools to make public what has traditionally been private—specifically their goals, strategies, materials, pacing, questions, concerns, and results. He suggested that every educator belong to a data team focused on student learning and create time to meet during the workday throughout the year.

The purpose of collaborative meetings should be to create student-centered, measurable goals and to identify the current student achievement through common formative assessments that correspond to the goals (Dufour, 2004). The data generated should be collected, analyzed, and discussed, and ultimately serve as a catalyst for improved teacher practice. Further, Dufour recommended that educators base views of their own effectiveness on their students’ results.

Fullan (2000) advised that each school or team must build its own collaborative model and develop local ownership through an extensive process of analysis and reflection; it cannot follow another school or team’s pathway. He suggested that to navigate such a process, healthy school cultures must be cultivated, nurtured, and tended by shaping assumptions, expectations, habits, and beliefs that constitute the norms of the institution and teacher teams.

According to one national survey, teachers who reported better-than-average support from their colleagues and schools for working with data were also more likely to use student data for instructional purposes (Gallagher et al., 2008).

Providing Time, Structure, and Norms

To support collaboration, time must be built in to the school schedule so that teachers can meet on a regular basis (Hamilton et al., 2009; Sharp, 2004). Many schools have adapted their schedules to ensure that teachers and other professionals have time for collaborative meetings to examine student data; critical friends groups to discuss pedagogy and theoretical issues; lesson study to collaboratively plan, observe, and analyze classroom lessons; and other types of professional learning communities. A nationwide survey of more than 5,000 teachers found that 69% of those teachers participated in regularly scheduled collaboration with other teachers and 53% participated in a common planning period with other members of their teams (Parsad, Lewis, & Farris, 2001).

Unfortunately, teachers sometimes find that even when meeting times are protected, true collaboration is more difficult than anticipated. Some find that meeting time is not used productively or does not have the hoped-for effect on teaching and learning. As a result, some teachers become frustrated and begin to view “collaborating” as one more obligation that keeps them from doing their “real” work.

As Grant and Murray (1999) pointed out,

When teachers are asked to commit themselves to a collaborative venture, they typically ask themselves three questions. First, they want to know if it will help their students. Second, they wonder if collaborating will make a positive difference in their teaching. And finally, they ask if they will receive adequate support for the work. If the answer to any of these questions is negative, teachers’ support for collaborative work will not happen at all, or it will begin but quickly wane. The degree to which teachers value and invest in the collaborative process will determine the success of their collaborative enterprise. (p. 193)

Two steps can help ensure that meetings are productive: developing a results-oriented agenda for each meeting and setting group norms. A well-designed agenda—created to address learning outcomes and student needs—is the most efficient and effective way to sustain focus on the stated purpose of the meeting and its expected outcomes. A good agenda includes open time to analyze data, examine student work, score common assessments, discuss effective lessons, and talk about specific student needs across the grade level (Garmston, 2007).

According to Garmston (2007), a well-constructed agenda includes topic, purpose, guiding questions, context, and processes and has the following characteristics:

- Identifies the desired outcomes of the meeting. The outcomes describe a product, not a process; explain the desired result; and serve as evidence that the group has achieved its goals.
- Sequences the agenda topics to launch the group into actions that are aligned with the meeting outcomes and guiding questions.
- Plans an opening that sets the tone and enables participants to understand the expected outcomes and processes.
- Labels the purpose of each topic so that the group's role in and expectations of decision making is clear.
- Constructs engaging questions that encourage staff members to probe more deeply into the topics under discussion.
- Summarizes the information that staff members need before they respond to the guiding questions.
- Describes any processes the group will use to accomplish each task.
- Identifies each person responsible for each task so that there is time to prepare.
- Indicates an estimate of time required for each item on the agenda.

Some schools have also found it helpful to adopt formal protocols and group norms to guide their discussions about data so that the process becomes

more familiar and comfortable (Boudett, City, & Murnane, 2006). Norms of openness and trust have been associated with school cultures that encourage data-based decision making (Marsh et al., 2006). For example, teachers have an understanding of the potential uses for data and see how data can contribute to their efforts to improve teaching and learning (Herman & Gribbons 2001; Mason, 2002). According to Wayman, Midgley, and Stringfield (2005),

Collaborative conversations that center on topics such as “what did my students learn recently and how do I know this,” and “in what practices have I engaged that affect student learning” make conversations around “I have these materials that might help you,” or “have you considered this activity?” much more useful and acceptable among teaching colleagues. (p. 5)

Another strategy to create a climate of trust is to introduce data use slowly—beginning by looking at district-level data and then moving gradually to the school and classroom levels—and to give teachers ownership of their classroom data, allowing them to choose how and when to share it (Datnow et al., 2007).

The Principal's Role

School leaders can support a data-driven culture by learning about data use alongside staff members, encouraging questions, and creating an atmosphere of trust. Administrators can invite teachers to frame the questions, conduct the data inquiries, and interpret the results of their collective efforts (Feldman & Tung, 2001; Knapp, Copland, & Swinnerton, 2007). Teachers who have been members of successful data teams report that school leaders modeled the use of data, included them in decision making, and responded to their opinions and feedback (Mason, 2002; Sharp, 2004).

School leaders must also recognize that teachers must have flexibility to take advantage of the benefits of data-based decision making. Teachers

Providing Supports That Foster a Data-Driven Culture Within a School

Steps recommended by Doing What Works (U.S. Department of Education, n.d.):

1. **Understanding and knowledge**—All district and school staff need a thorough understanding of how data are used to support instructional decision making. This understanding must then be combined with adequate knowledge and skills to use that data appropriately.
2. **Essential elements**—Schools can provide such supports as a data facilitator or coach, structured time for collaboration, and professional development. These supports can help schools build capacity among all staff for data use.
3. **Facilitation**—In order to encourage staff to use data effectively, schools can provide a facilitator or coach with expertise in using data and the ability to train and encourage other staff. Data facilitators can be district staff members who support multiple schools, full-time teachers who provide coaching to other staff, or a dedicated site-level staff person who supports all teachers in that school.
4. **Facilitation duties**—Data facilitators' duties include:
 - Modeling data use and interpretation using examples that relate to the school's learning goals
 - Demonstrating how a data-driven diagnosis of student learning issues applies to daily classroom practices
 - Assisting staff with data interpretation by preparing data reports and related materials
 - Training staff on how to use data to improve their instructional practices and, by extension, student achievement
5. **Staff collaboration**—Encouraging teachers to work collaboratively with data can highlight achievement patterns across grade levels, departments, or schools. A school culture that encourages collaboration in this way can promote consistency in instructional and assessment practices and expectations.
6. **Structured time**—Structured time can be set aside for staff to collaboratively analyze and interpret their students' achievement data and to talk about instructional changes. This time also can be used for professional development on data use.
7. **Targeted professional development**—In order for staff to learn to use data in a way that is consistent with school goals, schools and districts need to provide ongoing opportunities for professional development.
8. **Professional development opportunities**—Staff will need to develop new skill sets, ranging from data entry to data analysis to team leadership.
9. **Easing into a new culture**—Creating staff confidence in, and comfort with, a new data system can increase the chance that data will be used regularly and effectively to raise student achievement. Training should be implemented in small doses and occur close to the time that the data system is implemented or before any system enhancements go into effect.
10. **Specific training needs**—It can sometimes be difficult to find professional development opportunities that are aligned with the specific needs of the school. With the assistance of the data team, schools can examine their needs and discuss them with their professional development provider.
11. **Securing resources for success**—Principals and district-level administrators can work to secure the fiscal and human resources necessary to ensure that staff understands how to interpret and interact with data.

Source: U.S. Department of Education, Doing What Works. (n.d.). *Using student achievement data to support instructional decision making* [Topic webpage]. Retrieved from http://dww.ed.gov/Data-Driven-Instructional-Decision-Making/topic/index.cfm?T_ID=30

must be able to respond when the data indicate that a group of students needs additional help, that a specific concept needs to be revisited, or that other instructional adjustments are called for (Datnow et al., 2007; Halverson, Grigg, Prichett, & Thomas, 2005). Therefore, it may be necessary to relax certain requirements, such as adhering to a district-mandated curriculum pacing schedule (Marsh et al., 2006). Without this flexibility, teachers will be limited in their ability to use data to inform their instruction.

Professional Development for Data Literacy

Finally, encouraging a data-driven culture will require administrators and teachers to be data literate. Districts and schools will need to invest in targeted and ongoing professional development for administrators, teachers, and classroom support specialists (Hamilton et al., 2009). A range of skills is needed to support data-based decision making, such as collecting and compiling data, analyzing data, and leading data teams. In addition, professional development should focus on how to apply data to planning; curriculum; and instruction and help teachers identify practices and resources in response to what they learn from their data (Hamilton et al., 2009; Marsh et al., 2006).

In Summary

Although educators have little research to guide their efforts, it is clear that they are striving to devise structures and strategies to support the use of data-based decision making. The trend toward data-based decision making will likely continue, as will the trend for states to invest in longitudinal data systems and work together on data collaboratives through the CCCS initiative.

There is still more to learn about existing practices for using data and how they influence student outcomes, but school leaders can support data-based decision making by providing time and tools for collaboration around identifying, analyzing, and applying data. [PRR](#)

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