

Principal's Research Review

Supporting the Principal's Data-Informed Decisions

ISSN 1558-5948 VOL. 4, ISSUE 5 SEPTEMBER 2009

Developing a System for Effective Data Use

By Nancy Protheroe

A key component in school reform is gathering and analyzing student data. Data-based decision making has been frequently discussed over the past decade, and many research studies confirm the importance of the practice to school improvement (Brinson, Kowal, & Hassel, 2008; Datnow, Park, & Kennedy, 2008; Williams et al., 2005). Research also shows that more-effective schools typically use data differently than less-effective ones. For example, one study compared schools with rapid improvement to schools that made less progress and found that a primary difference was

the extent of data use to *inform instruction*. [Staff members] from growth schools more elaborately discussed the use of data to inform collaboration, guide them in making

needed instructional adjustments, adjust their alignment with standards, develop intervention strategies, assess individual student progress, and develop instructional modifications. (California Comprehensive Center and American Institutes for Research, 2006, p. 5)

The bottom line is that it makes sense to use data to help clarify decisions, identify alternative solutions to problems, and target resources more effectively. The real question should not be *whether* to integrate the use of data in school improvement, but *how*. Two key elements are establishing a process for data use and ensuring that conditions to support effective data use are present. Research conducted in schools that use data well provides helpful direction for both these elements.

Effective data-informed decision making requires schools to develop well-organized processes as well as conditions that support data use.

Just the Facts

- "School systems are awash in data. So much so, in fact, that some principals feel like they are drowning in it. Unfortunately, although most schools are data rich, they are also information poor" (Mills, 2006, p. 45).
- "Data are just the tip of the iceberg . . . reminding us that what lies beneath is what counts—the curriculum, instruction, assessment, and professional development practices" (Love, Stiles, Mundry, & DiRanna, 2008, p. 14).
- "The examination of data is not an end in itself but rather a means to improve decisions about instructional programs, placements, and methods" (U.S. Department of Education, 2008, p. 6).
- Even in schools that were identified as good data users by Means et al. (2009), teachers wanted more professional development related to data use.

Effective Data Use as a Process

In Love's (2008) view, data and results are, in too many schools, "two shores with an ocean in between....What is often lacking is a process that enables schools to connect the data with the results they want" (pp. 7–8). Perhaps the first step to developing a more effective process is shifting to a framework in which data is understood to *inform* decisions. Knapp, Swinnerton, Copland, and Monpas-Huber (2006) stressed that this change in terminology away from data-driven decision making signals an important change in the way data use should be viewed. In this new framework, data are not thought to "drive" decisions. Instead, data use explicitly acknowledges that educators bring core values and insights into the process.

Some schools have shifted to this view of data-informed leadership. However, other schools are looking for guidance as to how to use data more and in ways that make efficient use of staff time. Gregory and Kuzmich (2004) found that more successful approaches often start small, and Johnson (2000) suggested that "a logical first step in using data is to begin making better use of existing data" (p. 19).

Depka (2006) advised principals to guard against a "the more, the merrier" approach to data use:

Be selective about the data you choose . . . It is important to provide enough data so that participants can have a good degree of confidence that their observations are accurate. But too much information at one data delve can overwhelm, confuse, and exhaust people (p. 22).

Finally, City, Kagle, and Teoh (2005) identified some trade-offs that principals may need to consider as they begin schoolwide data-use initiatives

If you examine instruction more quickly with limited data sources, you will get to designing and implementing solutions faster, but you may sacrifice some accuracy in understanding the teaching dimensions of the

problem of practice. If you take your time and examine several data sources, you may be more accurate, but you may lose a sense of urgency and momentum for improvement.... If you have a few people do most of the examining instruction work, you may get it done more quickly and at greater depth, but you may not get the level of understanding and buy-in you'll want from the rest of the teachers whose practice you ultimately want to improve. (p. 114)

Ultimately, your goal should be to embed the use of data in the day-to-day operations of your school as part of a continuous cycle of school improvement. Thornton and Perreault (2002) agreed and described the alignment of data collection and use with a cycle of school improvement:

- **Develop a plan.** The plan should focus data collection efforts on a specific systemic issue or issues. What data will be collected? How will we improve the system? What new instructional methods or procedure will be developed? What is the current baseline on critical measures? What staff development is needed?
- **Implement the plan.** Did we successfully implement the plan? How well is the plan working? Do staff members need further professional development? Regular assessments should be conducted. At this stage, it is crucial to monitor implementation, collect data, and provide feedback.
- **Analyze the results.** Are staff members working collaboratively? Are staff members exhibiting skills and confidence in data analysis? When determining whether the implementation is successful, criteria to consider are disaggregation of data, performance-based summaries, and open discussions.
- **Take action.** What have we learned? How can we improve the system? What adjustments in the system do the data suggest? (pp. 92–93).

Thomas (2006) emphasized the “take action” phase of data use as critical to school improvement. For example, he talked about a teacher team review of assessment and related data:

Unless the team emerges from the data analysis process with a clear plan of action for identified students and for classroom instruction, it has wasted its time. The final step in the data analysis process is for the team to implement the enrichments and interventions within a definitive time frame, modify instructional or assessment practices, and collect data to determine the effectiveness of the changes. (p. 42)

The Questions Are Key

Reeves (2008/2009) described many educators as drowning in data and provided suggestions for gaining control of it. In his view, one of the most important elements of effective data use is developing a clearly focused question. Lachat, Williams, and Smith (2006) agreed. They stressed the importance of organizing data use around “essential questions” and provided the following examples:

- Are specific reading and math interventions improving skills and reducing achievement gaps for selected groups of students?
- How do students’ course grades compare to their results on state assessments and standardized tests?
- How do assessment results for students new to the district in grades 9 or 10 compare to the results of students who have been in the district for their middle school years? (p. 20)

Supporting the Process

While studying schools that are making effective use of data, researchers Means, Padilla, DeBarger, and Bakia (2009) found a persistent pattern of prerequisites and supporting conditions. It is important for school leaders to understand the necessary supporting conditions and ensure that they are in place.

Four essential supporting conditions for effective data use include a trusting environment, training for staff members, opportunities for teachers to collaborate, and a culture of data use.

A Trusting Environment

It’s easy to see why some staff members might fear increased use of data because it can shine a brighter light on school problems or—even more worrisome—on their lack of success with some students. Thus, your role as principal in developing a trusting environment in which people feel comfortable and safe talking about and studying school- or classroom-based problems should begin even before you increase your emphasis on data use.

As an example of the importance of trust, Langer, Colton, and Goff (2003) described a group of teachers engaged in collaborative analysis of student work: “Trust in fellow group members allows [a teacher] to bring a struggling student’s work to the group without fear of being judged or criticized” (p. 46).

Training for Staff

Even in schools that were identified as good data users by Means et al. (2009), teachers wanted more professional development related to data use. Three topics were identified by more than half of the teachers in those schools:

- How to develop diagnostic assessments for my class,

Thus, your role as principal in developing a trusting environment in which people feel comfortable and safe talking about and studying school- or classroom-based problems should begin even before you increase your emphasis on data use.

- How to adjust the content and approach used in my class in light of student data, and
- How to identify types of data that can help to monitor school progress against goals for improvement. (p. 30)

This need for teacher development has been addressed head-on by schools that have incorporated the effective use of data in their improvement efforts. Teachers have learned how to analyze assessment data in various ways:

- Staff development focused on how to analyze reports of assessment results
- Presentations by central office staff or principals to school staff members, followed by a discussion of possible next steps
- One-on-one sessions with a principal, assistant principal, or lead teacher to review and discuss results from their classes and students
- Training of an in-school data expert, typically a teacher, who works with grade-level or subject-area teams to analyze the data.

However, Holcomb (2004) found that effective data use requires more than number-crunching skills. Training can be especially powerful when it is organized around an authentic task. For example, when a content-area team is guided through its initial efforts to take a more detailed view of achievement data for individual students, teachers on the team are learning important skills. Finally, training should include encouraging teachers and other school staff members to recognize the data analysis skills they already have.

Opportunities for Teachers to Collaborate

Another key component of effective systems is time for teachers to discuss the data and to work together to develop solutions. Although teachers view such time for interaction as an opportunity to develop

their skills in data analysis and to brainstorm and share effective instructional strategies, they report that such opportunities are scarce in many schools (U.S. Department of Education, 2008).

One study of high schools that effectively used data to inform improvement efforts found that “structured departmental and/or course-alike time for collaboration was essential for teachers to engage in data discussions” (Datnow, Park, & Kennedy, 2008, p. 80). Means et al. (2009) considered such opportunities an essential element in effective data use, “The most sophisticated data warehouse in the world will have no effect on instruction if no one has—or takes—the time to look at the data, reflect on them, and draw inferences for instructional planning” (p. 5).

Harrison and Bryan (2008) identified structured conversations as the next step many schools still need to take to make more effective use of data. In their view, data management systems may be in place but “the focus now needs to move to the structures and allocation of time that will allow teachers to engage in data conversations about student achievement and its implications for classroom planning and instruction” (p. 15). Some of those “data conversations” may involve the whole school and may include such topics as patterns of student achievement and teacher development needs. However, another use of data might be to support student goal-setting conversations, with one teacher interacting with one student.

A Culture of Data Use

Principals who want to build a culture of data use in their schools must look first to themselves. Ask yourself, Am I demonstrating the effective use of data in making decisions—or do staff members only hear me talking about the importance of using it? You should be modeling the use of data every day.

The most sophisticated data warehouse in the world will have no effect on instruction if no one has—or takes—the time to look at the data, reflect on them, and draw inferences for instructional planning.

One challenge to principals who are working to build a schoolwide data use program may be breaking down the closed-door culture of teaching. Boudett and Moody (2005) stressed the importance of making data study a collaborative approach from the very beginning:

Even in cases where one person is willing to assume primary responsibility for data work, it is important that that person not work alone. Assembling a group of people, assigning responsibility for specific tasks, and planning how individuals will coordinate their efforts with each other and the rest of the school sends a message that using data in your school will be a collaborative effort. (p. 14)

Summary

In essence, effective data use consists of two key elements: asking the right questions and acting on the answers. School leaders “play a major role in... setting expectations for staff participation in data-informed decision making, and making resources such as supported time available to support the enterprise” (Means, Padilla, DeBarger, & Bakia, 2009, p. 5). Principals must ensure that the supporting conditions for effective data use are in place. PRR

NASSP Leadership Skills Assessment



The NASSP Leadership Skills Assessment is a dynamic new professional development program for current and aspiring school leaders. This online tool assists participants in assessing their leadership strengths and improvement needs and in constructing an individualized professional development plan.

Leadership Skills Assessment incorporates the following components:

- Analyses of developmental assets and needs
- 360° self- and observer assessment
- In-basket performance
- Professional development suggestions
- Individualized development guide

Leadership Skills Assessment is a great way to help administrators prepare to meet ever-increasing demands.

Order now! It's convenient and affordable—and flexible! Created with the busy educator in mind, you can complete it at your own pace as your schedule allows.

Members: \$49.00 Nonmembers: \$99.00

For information on special rates and supplementary materials for groups, contact Pete Reed at reedp@principals.org.

NATIONAL ASSOCIATION
OF SECONDARY SCHOOL
PRINCIPALS



Order now at www.principals.org/SKILLS

Many schools that are good data users have found that an important element of their success involved expanding their definition of data beyond results from state assessments and other more traditional indicators such as drop-out statistics. Thus, a principal might intentionally use classroom observations to identify gaps in good teaching strategies that should be addressed by schoolwide teacher development. Or a school committee focusing on behavior and discipline issues might look closely at when and where problems in hallways tended to occur—with this data informing discussions about both problems and possible solutions.

Pincipal John Skretta uses short (3 to 10 minutes), unannounced, informal classroom observations to gather data that “can be used to prompt and provoke dialogue about instruction between teachers and administrators” (2007, p. 17). Typically, he has a focus for his observations. For example, he used the walkthroughs “to gather data about instructional practices that improve reading across the curriculum.” (p. 18)

Source: Skretta, J. (2007). Using walk-throughs to gather data for school improvement. *Principal Leadership* (May 2007), 16–23.

Teachers in one middle school felt they needed a common understanding of students’ literacy levels to inform their work around improving literacy. They decided to use an organized approach to sampling student work to do this:

“After much discussion, the teachers agreed that they should give a writing assignment that would allow them to collaboratively assess their students, using a rubric that they had developed. They

developed the following assignment: ‘Teenagers on the street are reported to get into trouble, such as engaging in criminal behavior or getting involved in gang-related activities, after 10:00 p.m. Do you think it is a good idea for cities and towns to enforce curfews—times after which teenagers must be off the streets? Explain your reasons.’” (National Turning Points Center, n.d., p. 13).

The data collected through the work sampling provided information about overall level of student proficiency and so helped teachers focus their discussion on ways to improve instruction to better support student needs.

Source: National Turning Points Center. (n.d.). *Turning points—Transforming middle schools: Guide to data-based inquiry and decision making*. Boston, MA: Author.

In one California high school, students and staff members collaborated to address the question “To what extent do the structure at the school, the quantity of work, and individual classes affect the overall attitude of students and the quality of learning?” Students were surveyed and interviews conducted with small groups of teachers and students. Some topics addressed included perceptions about the overall school environment, the quantity of work expected of students, and student learning supports. After students working on the project analyzed the data and made presentations to teachers, teachers began to talk together about ways to address student concerns about workload issues while still maintaining academic excellence.

Source: Jones, M., & Yonezawa, S. (2008/2009). Student-driven research. *Educational Leadership* (December 2008/January 2009), 65–69.

References

- Boudett, K., & Moody, L. (2005). Organizing for collaborative work. In K. P. Boudett, E. A. City, & R. J. Murnane (Eds.). *Data wise: A step-by-step guide to using assessment results to improve teaching and learning*. Cambridge, MA: Harvard Education Press.
- Brinson, D., Kowal, J., & Hassel, B. C. (2008). *School turnarounds: Actions and results*. Lincoln, IL: Center on Innovation & Improvement. Retrieved May 1, 2009, from www.centerii.org/survey/downloads/Turnaround%20Actions%20and%20Results%203%2024%2008%20with%20covers.pdf
- California Comprehensive Center and American Institutes for Research. (2006). *Data-driven decision making based on curriculum-embedded assessment: Findings from recent California studies*. Sacramento, CA: California Comprehensive Center at WestEd.
- City, E. A., Kagle, M., & Teoh, M. B. (2005). Examining instruction. In K. P. Boudette, E. A. City, & R. J. Murnane (Eds.). *Data wise: A step-by-step guide to using assessment results to improve teaching and learning*. Cambridge, MA: Harvard Education Press.
- Datnow, A., Park, V., & Kennedy, V. (2008). *Acting on data: How urban high schools use data to improve instruction*. Los Angeles, CA: Center on Educational Governance, USC Rossier School of Education.
- Depka, E. (2006). *The data guidebook for teachers and leaders: Tools for continuous improvement*. Thousand Oaks, CA: Corwin Press.
- Gregory, G. H., & Kuzmich, L. (2004). *Data driven differentiation in the standards-based classroom*. Thousand Oaks, CA: Corwin Press.
- Harrison, C., & Bryan, C. (2008). Data dialogue: Focused conversations put evidence to work in the classroom. *Journal of Staff Development*, 29(4), 15–19.
- Holcomb, E. (2004). *Getting excited about data* (2nd ed.). Thousand Oaks, CA: Corwin Press.
- Johnson, J. H. (2000). Data-driven school improvement. *Journal of School Improvement*, 1(1), 16–19. Retrieved August 25, 2009, from http://findarticles.com/p/articles/mi_pric/is_199701/ai_3778767970/
- Knapp, M. S., Swinnerton, J. A., Copland, M. A., & Monpas-Huber, J. (2006). *Data-informed leadership in education: A research report in collaboration with The Wallace Foundation*. Seattle, WA: Center for the Study of Teaching and Policy, University of Washington. Retrieved May 2, 2009, from depts.washington.edu/ctpmail/PDFs/DataInformed-Nov1.pdf
- Lachat, M. A., Williams, M., & Smith, S. C. (2006). Making sense of all your data. *Principal Leadership*, 7(2), 16–21.
- Langer, G. M., Colton, A. B., & Goff, L. S. (2003). *Collaborative analysis of student work: Improving teaching and learning*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Love, N. (2008). *Using data to improve learning for all: A collaborative inquiry approach*. Thousand Oaks, CA: Corwin Press.
- Love, N., Stiles, K. E., Mundry, S., & DiRanna, K. (2008). Passion and principle: Ground effective data use. *Journal of Staff Development* 29(4), 14.
- Means, B., Padilla, C., DeBarger, A., & Bakia, M. (2009). *Implementing data-informed decision making in schools—Teacher access, supports, and use*. Washington, DC: U.S. Department of Education, Office of Planning, Evaluation, and Policy Development. Retrieved May 24, 2009 from www.ed.gov/rschstat/eval/tech/data-informed-decision/data-informed-decision.doc
- Mills, L. (2006). Transforming data into knowledge. *Principal Leadership*, 7(2), 44–48.
- Reeves, D. (2008/2009). Looking deeper into the data. *Educational Leadership*, 66(4), 88–89.
- Thomas, R. S. (2006). How to survive data overload. *Principal Leadership*, 7(2), 37–42.
- Thornton, B., & Perreault, G. (2002). Becoming a data-based leader: An introduction. *NASSP Bulletin*, 86(630), 86–96.
- U.S. Department of Education, Office of Planning, Evaluation and Policy Development. (2008). *Teachers' use of student data systems to improve instruction: 2005 to 2007*. Washington, D.C. Retrieved May 24, 2009, from www.ed.gov/rschstat/eval/tech/teachers-data-use-2005-2007/teachers-data-use-2005-2007.pdf
- Williams, T., Kirst, M., Haertel, E., et al. (2005). *Similar students, different results: Why do some schools do better? A large-scale survey of California elementary schools serving low-income students*. Mountain View, CA: EdSource.

About the Author

Nancy Protheroe is director of special research projects at Educational Research Service (ERS) in Alexandria, VA. ERS was established by NASSP and other administrator associations in 1973 to serve the research needs of school leaders.