



You Don't Have to Be a Statistician to Use Data:

A Process for Data-Based Decision Making in Schools

Using data to make decisions doesn't have to be intimidating. Here are five easy steps to help your school get started.

By Nancy Flowers and Dawn M.H. Carpenter

If it's so beneficial, why aren't more schools using data? Too many school leaders make decisions based on informed intuition, personal experience, or anecdotal information (Ingram, Louis, and Schroeder 2004). They operate without data because looking at data isn't an appealing activity or because they believe it's too time consuming. But looking at data doesn't necessarily mean you'll be working with volumes of numbers and complicated statistics. The aim of data analysis isn't to gather large quantities of data, but to gather and use meaningful data (Schmoker 2003).

By focusing on only the most relevant data for the decision at hand, your school can focus its collective efforts. In this way, educators can maximize their time without getting buried in mounds of unrelated information.

WHAT DATA ARE READILY AVAILABLE AT SCHOOLS?

Many schools are so focused on achievement exam scores that these become the sole source of data (Schmoker 2003). These data are important, but they must be disaggregated (that is, broken out by gender, grade, etc.) and linked to other data in order to help schools plan instructional improvements (Halverson et al. 2007; Mulhall, Flowers, and Mertens 2002; Murnane, Sharkey, and Boudett 2005). By examining other sources of data, including contextual information (for example, lesson plans, examples of student work, parent survey results) about the school and community in conjunction with achievement scores, you can begin to understand the circumstances around test scores and then identify instructional areas that could be improved. For example, students may be performing below standards on reading achievement tests because they miss a lot of school, don't complete homework assignments, or lack parental involvement.



A SOPHISTICATED PRIMER

Schools have plenty of sources of very useful contextual data (see Table 1). These readily available data can be useful when making decisions at all levels of your school's functioning, from the grade or subject level to the school level. For example, disaggregating reading achievement test scores by gender, grade, and ethnicity can point to which students are struggling and will allow teachers to examine such factors as reading and comprehension levels that need improvement. By examining instructional delivery strategies in science, teachers can assess whether students with varying learning styles are supported effectively. Reviewing the grades and homework of students who scored low on a mathematics benchmark test can help teachers iden-

NANCY FLOWERS is the senior coordinator of research and **DAWN M.H. CARPENTER** is manager of research programs at the Center for Prevention Research and Development at the University of Illinois, Champaign, Illinois.

tify the concepts these students still need to master. Teacher survey responses about professional development needs can be disaggregated by years of teaching experience to shed light on varying training needs of teachers.

TABLE 1.
SCHOOL DATA EXAMPLES AND AREAS OF APPLICABILITY

Leadership and professional development	<ul style="list-style-type: none"> Leadership team meeting minutes Grade-level meeting minutes Interdisciplinary team meeting minutes Professional development calendar School assessments Years of teaching experience Type of certification Turnover rates of teachers and staff Budgets
Instructional practices	<ul style="list-style-type: none"> Curriculum materials Lesson plans Examples of student work Rubrics and assessment criteria Student self-assessments Master schedule Technology capacity Benchmark testing results Standardized test results Gradebooks Attendance rates Discipline rates
School climate	<ul style="list-style-type: none"> Attendance rates Discipline rates Safety data Climate survey results Dropout rates Student services/guidance records
Parent involvement	<ul style="list-style-type: none"> Parent attendance rates at activities Types of parent activities Parent communication examples PTA or PTO meeting minutes Parent survey results

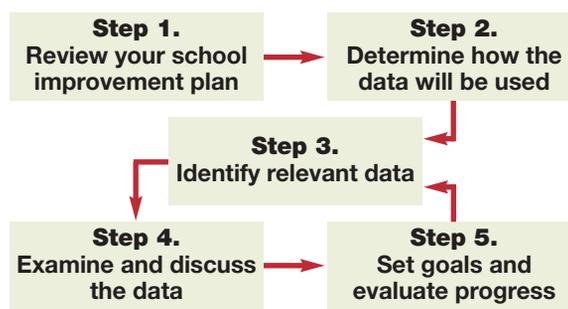
A PROCESS FOR USING DATA

Many educators don't have training or experience in using data to make decisions and thus feel overwhelmed by the prospect (Ronka et al. 2008). Through our work with schools over the past 15 years, we've developed and refined an easy and effective process for schools to use data in regular decisions about school improvement (Flowers, Mertens, and Mulhall 1999, 2002). This process is built on assumptions that schools have limited time for data gathering and exploration, little training in data analysis and interpretation, and a desire to make

informed decisions by raising key questions among stakeholders. The process is centered on viewing data as a resource for inquiry-based discussion, shared goal setting, and evaluation of progress.

The process contains five steps for using data to make school decisions (see Figure 1). The first step is to review your school improvement plan to identify the most salient issues your school wants to improve. The second step is to determine how the data will be examined (that is, what groups in your school will be involved in reviewing the data). The final steps are in a cyclical three-part process: Identify the relevant data, examine and discuss the data, and set goals and evaluate your progress.

FIGURE 1.
CPRD'S DATA-BASED DECISION-MAKING PROCESS



STEP 1: REVIEW YOUR SCHOOL IMPROVEMENT PLAN.

Looking at data should never be an isolated activity at your school. Instead, data should be incorporated into your existing school improvement process. Therefore, the first step in using data is to review your school improvement plan. By analyzing goals that are part of your plan, you'll be able to determine your school's primary focus (for example, improving student achievement in mathematics, increasing parent involvement, raising student academic expectations). You may need to prioritize your goals. Just the process of prioritizing the goals can begin to create consensus among staff and administrators regarding a "starting point" for school improvement.

STEP 2: DETERMINE HOW DATA WILL BE USED.

The most critical issue to consider as you determine how data will be used at your school is to work within the structure that already exists for school improvement. Your school may have a school improvement team, improvement committees, or subject-matter specialty groups, or your school may address improvement issues within grade levels. Regardless of your improvement structure, data should become a resource for the existing groups in your school. When groups work collaboratively with

data, they create a collective responsibility for overall student learning (Flowers, Mertens, and Mulhall 2000). The key concepts to keep in mind are to:

- Involve as many teachers and staff in the process as possible;
- Engage parents and community members in order to broaden participation;
- Provide those involved with specific areas of responsibility;
- Keep things moving in the face of daily demands; and
- Create a system in which representatives of different improvement groups can come together to share information.

STEP 3: IDENTIFY RELEVANT DATA.

As you review the list of data in Table 1, as well as other data sources, ask yourselves, “Are these data relevant to our school improvement plan?” If the answer is yes, then gather the data and share it with the appropriate improvement group at your school. If the answer is no, then simply put the data aside. By reducing the amount of data to only the most relevant information, you increase the likelihood that your improvement groups will use the data when examining improvement issues.

STEP 4: EXAMINE AND DISCUSS THE DATA.

The next step is to examine the data closely. Reviewing the data as a group ensures that everyone understands how to read and interpret them. A shared understanding of the data is important in order to create a productive environment for examination and discussion.

One of the most challenging aspects of examining

your data is to do it objectively. Your goal should be to examine the data without making quick judgments. In other words, be open to both the good news as well as the challenges that your data may reveal. One of the best ways to review

data is to ask yourselves a series of guiding questions.

The first guiding question is: Does the data indicate that our school is where we want to be? For example, if you’re focused on increasing mathematics achievement, ask yourselves, “Do math lesson plans incorporate key learning standards (for example, problem solving, reasoning and proof, analytic

methods) as frequently as they should?” This dialogue can help you determine where your school is on the issue and factors that contribute to the issue within the context of your school and community. In some cases, the answer will be yes, you’re right where you want to be. If that’s the case, share this data with teachers, staff, students, parents, and community. If the answer is no, ask where your school should be. In the example regarding mathematics achievement, you might ask, “How often should the key mathematical concepts and skills be built into lessons?” By asking where you should be on the issue, the group engages in a structured discussion about practices and goals. Such a discussion allows everyone to participate and to reach a decision about the ideal level of practices. Simply having structured conversations like this promotes participation, joint decision making, and ownership of the improvement process (Flowers, Mertens, and Mulhall 1999, 2002).

The final question that should be asked is, “Do I have all the data necessary to proceed, or are there other data that would address this area?” It’s important to have multiple sources of data because no single source can cover everything that’s important to your school improvement issue. Disaggregating your data is also important because that allows you to examine groups of students in your school. For example, review the characteristics — gender, grade, ethnicity — of struggling readers in your school to gain insight into their learning experiences.

STEP 5: SET GOALS AND EVALUATE PROGRESS.

You can’t improve everything all at once, or even change a few things substantially in a short amount of time. Therefore, you’ll want to establish both short-term and long-term goals. Once again, we recommend that you ask yourselves a series of questions, beginning with a discussion of your long-term goals and then establishing short-term goals.

The first question to ask is: What’s an acceptable goal that we can reach in three to five years? Long-term goals are important because they communicate the “ideal” for your school and when it should be reached. Short-term goals help measure progress along the way, but the long-term goal is what you ultimately want to achieve. An example of a long-term goal is: “By 2013, 8th graders will engage in text-based review and discussion three times per week in their literature classes.”

The second question to ask is: Given our school’s current resources, what’s a realistic goal that we can reach in the next year or two? Short-term goals let your staff know they’re “on course” and allow them to celebrate victories along the way. Remember, goals should be specific and measurable. An exam-

ARTICLE AT A GLANCE

Using data to make decisions does not have to be a time-consuming or intimidating process. The authors present five steps to make using data easier and more productive. Those steps are:

1. Review your school improvement plan.
2. Determine how the data will be used.
3. Identify relevant data.
4. Examine and discuss the data.
5. Set goals and evaluate progress.

ple of a short-term goal is: “By 2010, mathematics teachers will engage students once a week in using calculators during lessons.”

The third question to ask is: What resources or conditions may need attention if we are to reach our goals? Identify and discuss barriers or resource shortages that may inhibit your school’s ability to reach your goals. Brainstorm ways to break down the barriers or adjust your goals in light of resources that are lacking.

The last question, but by no means the least important, is: What strategies will we use to reach each goal? Strategies are the action plans you follow to reach your goals. Strategies should be specific, and they should include a realistic timeline for completion. The best strategies directly address the goal and provide teachers with the tools they need to succeed. An example of a strategy for achieving the goal of increasing the frequency of critical thinking activities is: Teachers will attend a seminar on how to implement critical thinking practices and, as part of the seminar, will revise existing lesson plans to incorporate critical thinking activities.

The last part of the data-based, decision-making process is to evaluate your progress. This final aspect encompasses the documentation, communication, and implementation of all the decisions and goals that have been formulated in the previous steps. Part of documenting your decisions is to get consensus on your plan by having a decision-making body in your school (for example, the administrative team or school board) formally agree to the goals. Next, the goals, strategies, and timelines need to be communicated to your entire staff so that they understand the plan, as well as their responsibilities. A maximum level of staff input throughout the process will help achieve buy-in and a shared direction during this step.

Finally, you need to review data to monitor and evaluate your progress toward your goals. Simply go back to Step 3 again! Step 3 (identify relevant data), Step 4 (examine and discuss the data), and Step 5 (set goals and evaluate progress) are represented as a cycle in the process because they’re meant to be repeated as you evaluate your progress. Until you reach your goals, this is a continuing process that you can repeat to ensure that data-based decision making is always part of school improvement planning.

CONCLUSION

Using data to make decisions can have an extraordinary effect on a school. One of the greatest benefits is that you make better decisions because they’re based on informed reflection. Another benefit is that the data will provide support for your decisions if you’re faced with opposition, whether from district personnel, par-

ents, or the community. Using data also provides you with a way to evaluate the success or failure of your decisions. Finally, using data can assist you in concretely demonstrating the needs of your school so you can lobby for the resources to assist in implementing your programs.

The first step in using data is to overcome the belief that the process is overwhelming and too complicated. We suggest that schools begin with just one key issue and demonstrate the value of making a data-based decision. The five-step process for incorporating data into decisions is an excellent framework for schools to build on and to adapt for their unique structure. The key to success is that it becomes ingrained in the way you regularly conduct business. Before making any decision, no matter how big or how small, always ask: What data do we have to shed light on the issues around this decision? You’ll be glad you did. **K**

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SUGGESTED RESOURCES

Annenberg Institute for School Reform. Tools for School-Improvement Planning Web Site. www.annenberginstitute.org/tools/index.php.

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