

Practical Leadership

Improving the Schools of Today

Inventing the Schools of Tomorrow

RESEARCH INTO PRACTICE

Using Data for Decision-Making

In A Nutshell

Principals are expected to use data to guide school improvement. In most schools there is a lot of data available, so much data that it is unclear whether there is data that can be meaningfully used to inform decisions and improve teaching and learning (Skalski & Romero, 2011). The attitude of principals toward the use of data and the confidence they show in how it informs decisions can build a culture where data is seen as useful. When principals model and promote the use of data it sets the tone for their school and positively impacts attitudes of teachers, staff and families about its use (Schmoker, 2012; Williamson, 1998; Williamson & Blackburn, 2010).

It's easy for a principal to be overwhelmed by the amount of data to be reviewed, digested and used to improve their school. Often when you hear about data you think about numbers, things like test scores, attendance rates, and other forms of quantitative data. But data is more than just numbers it includes all sorts of information that is available, or might be collected, to help with decisions, measure success and monitor your accountability.

Much of the data that schools collect is in response to someone else's agenda. Principals report data to their state education agency. They provide reports to accrediting agencies. Other data is collected for federal programs. Often principals see these data as obligations that must be fulfilled rather than rich sources of information that can shape and guide decisions about their school.

Data by themselves are not very useful. Only when data is turned into information and that information is used to stimulate conversations about the future of your school is data meaningful.

Lack of data, or the failure to use data, can lead to a deficit of information and become a problem for a school leader. "Citizens and district leaders lose confidence in the program, and with increasing frequency, in the principal's ability to run it" (Johnston & Williamson, 1998).

In order for data to be useful to principals and teachers certain conditions should be met (Williamson & Blackburn, 2009; Skalski & Romero, 2011).

- 1. The data must be clearly relevant to the people using them.** If teachers are asked to look at test results in the subjects they teach, and consider the reasons for both positive and negative aspects of student performance, they can contribute to the conversation. They may feel less confident, and less empowered or engaged, in a discussion about per pupil expenditures in the school or district. The bottom line is that people are interested in the data they believe they can influence, not data for the sake of data.
- 2. Data must be reduced or transformed to become useful "information."** Huge sets of raw data are both numbing and overwhelming. Comparisons, disaggregation, trend analyses and other "transformations" give meaning to raw data and help people form conceptions of its importance.
- 3. Data must be trustworthy.** Stakeholders must have confidence in the data; they must believe that it represents the reality of their school and their circumstances. Trustworthiness is a function of the way the data are collected, the integrity with which it is handled, and the reasonableness of the analysis and reduction techniques.

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Strategies for the Use of Data

Six “key” principles emerge from the literature on the use of data to guide school improvement (Johnston, 2005; Johnston & Williamson, 1998; Schmoker, 2012; Skalski & Romero, 2011; Williamson, 1998; Williamson & Blackburn, 2010).

Involve Others – Participation by stakeholders (teachers, staff, parents) is important. Participation fosters acceptance of the process, builds credibility and leads to greater support for any action taken as a result of the review. Participation is essential to create a climate open to routine gathering and examination of data.

Use Multiple Data Points – Any data review is strengthened when you use a variety of data. This builds confidence in the process and acknowledges that a single indicator doesn’t tell the complete story about your school. There is often a lot of quantitative data (test scores, attendance rates) available to school leaders. Other types of data like satisfaction surveys or data from focus groups can complement quantitative measures and provide explicit examples that illustrate the impact of other measures.

Attendance data obviously tells you something about student attendance but it can also tell you something about student engagement. Classrooms with high absenteeism may be places where students are not successfully engaged. Spending time in those classrooms and charting the interaction of the teacher with students can provide data that complements the attendance data. You might chart the teacher’s path around the classroom so that you can increase the teacher’s awareness of those patterns and their impact on engagement (Shaffer & Derman, n.d.).

Value Longitudinal Data – A single measure, or data point, often doesn’t provide a complete picture of your school. Similarly, data from a single year, doesn’t provide the basis for decisions. Always look for data from more than one year and look for patterns and trends across multiple years.

Always Disaggregate – Often the data received by a school arrives as aggregate data (the whole school or grade). While useful, aggregated data may not tell you everything you want to know. The ability to disaggregate data and look for patterns related to gender, race, or poverty may reveal persistent problems. For example, disaggregation of composite state achievement tests may reveal areas of need and help guide your decision.

Harden, or Soften, the Data – If you rely on quantitative data you may want to consider “softening” it by gathering qualitative information directly from students, parents, or teachers. The use of focus groups and shadow studies is described later in this brief. These tools can provide information about how your school is perceived by those it serves. Similarly, if you have lots of qualitative data you will want to “harden” it by looking at patterns across interviews or shadow studies.

Test scores provide quantitative data about student learning. But a discussion with students about their perceptions, and opinions of a course and comparing their response with that of their teacher, can provide insight into the delivery of instruction. That data can complement the numbers from test scores (Shaffer & Derman, n.d.).

Answer the “Right” Question – Because so much data is available to school leaders it is easy to be consumed by it. The most successful principals identify questions that they want answered. They look across the data for information that will help provide answers. Stay focused and avoid being distracted by data that, while interesting, may not relate to your questions.

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Improving the Use and Value of Data

A recent study on data-based decision making identified ten things principals can do to promote the use and value of data (Skalski & Romero, 2011).

1. Develop a culture that embraces data. Use it in your work and share how you use it with others.
2. Collect data that provide a complete picture of the school's climate for learning, including school variables that examine teacher-student and peer-peer relationships, student and family engagement, school safety, and how the physical environment supports learning.
3. Collect data that determine the present performance level of every student in the core academic program and determine how students are performing in other areas that may impact their learning and engagement.
4. Collect student performance data that provide a complete picture of the whole child including academic, behavioral, social-emotional and physical development.
5. Use professional learning communities or other collaborative groups to discuss and solve problems related to teaching and learning.
6. Have teams review relevant student performance data to determine a course of action to solve problem affecting student and school performance.
7. Monitor student progress in response to interventions and programs implemented to address those problems.
8. Evaluate intervention and program effectiveness to refine instruction, interventions and data collection.
9. Engage all school staff members, students and families in reviewing and using data.
10. Distribute progress reports on a regular basis (monthly or quarterly) to all stakeholders to ensure continued focus and ownership of improved student learning.

Tools for Gathering Data About Teaching and Learning at Your School

Principals have access to lots of information --- student grades and test scores, survey results and attendance data. While useful, these data often don't give you information about the way that students and parents experience your school. There are two tools commonly used by principals. Both provided interesting insights into the day-to-day experience of students and can be used by your leadership team to complement other data points.

Student Shadow Study - One technique for gathering information about the curricular and instructional experiences of students is to conduct a shadow study. Shadow studies involve selecting students at random and "shadowing" them throughout their day (Lounsbury & Johnston, 1985). You literally follow a student around for a day. You'll want to select students randomly so that you get a good cross-section of your school.

A shadow study, originally developed by NASSP, charts the experience of students at 5-7 minute intervals. This allows the observer to see the ebb and flow of activities during the day. Spending the entire day with a student, and documenting their experience, provides interesting insights into the student experience. Of course, students quickly figure out that something is going on. The best approach is to talk with the student and assure them that you are not gathering information about them to report to the office. At the end of the day it's a good idea to meet with the student and debrief the experience.

SHADOW STUDY OBSERVATION FORM

TIME	SPECIFIC BEHAVIOR AT 5-7 MINUTE INTERVALS	COMMENTS / IMPRESSIONS

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Focus Group Meeting – A focus group is a group of individuals brought together for an open-ended discussion about an issue. Focus groups provide a useful tool for gathering information about people’s beliefs and attitudes. They consist of a structured conversation and are generally most useful when conducted by an outside facilitator. This encourages people to speak more freely and discuss difficult issues. The information that emerges should be scripted, analyzed for patterns and themes and then publicly reported and discussed.

There are several advantages to holding a focus group meeting. Participants can learn about your school during the meeting. You can gain a deeper understanding of how participants perceive your school. These small group meetings provide data that may be helpful in working with larger groups.

Additional information about focus groups is available in *Breaking Ranks: A Field Guide for Leading Change* (www.nassp.org) and sample focus group questions can be found at http://learningobjects.wesleyan.edu/downloads/focus_group_protocol.htm.

Instructional Walkthrough – Walkthroughs were originally designed as a tool to promote conversation among teachers about improving instruction. They are not intended as evaluation tools nor designed for quick tours of a building. Rather walkthroughs provide a way to gather focused data about a school’s instructional program.

They should always be designed and implemented collaboratively with teachers. Prior to conducting a walkthrough be clear about its purpose. For example you might use it to gather data about a new instructional practice or you might use it to collect data about student engagement. Let teachers know who will be visiting, what data will be collected and how the data will be shared and used following the walkthrough. Successful walkthroughs collect data in a systematic way and should never be a special event with special lessons. Most importantly observers should focus on the instructional practices present in classrooms they visit. They should understand that classrooms will be different and every practice may not be present during the visit.

In some schools observers may want to talk with students. Responses from students can provide helpful information about the instructional program and expectations for students. Here are some possible questions (Williamson & Blackburn, 2011).

- What are you learning?
- Why do you need to know this information?
- What did you learn previously that helped you with the lesson?
- How do you know your work is good enough?
- What is an example of something you’ve done where you had to work hard but also learned a lot?

After the walkthrough provide an opportunity for teachers to study the data and reflect on its meaning. Information that was collected should be available in an open and transparent way, one that invites conversation and discussion. Engage teachers and others in identifying patterns and using the data for school improvement. Consider the format to be used for the discussion. Should it occur with the entire faculty, with departments or content areas, or with the school improvement team?

Look at Student Work – A useful source of information is student work. In many schools teams of teachers, either at the department, course or grade-level, examine student work as a way to clarify their own standards and expectations. The goal of looking at student work is to promote a conversation, anchored in data, about your school’s curricular and instructional program. These conversations are a useful way to build commitment to improving both teaching and learning (Williamson & Blackburn, 2011).

Looking at student work is a dramatic change from the norm in most schools. Before you begin you will want to work with your leadership team and with faculty to be clear about the norms that will be used. Talk about the process and ensure it is not evaluative. Consider different ways to gather relevant contextual information and then select a protocol or guideline (www.lasw.org) for conducting the conversation. Perhaps of greatest importance is to establish a system for providing and receiving feedback that is constructive.

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Collaborative Data Analysis Strategies

There are a variety of strategies working with teachers, families and other stakeholders to use data to guide school improvement.

Organize a Data Night

In a suburban Chicago school a task force of teachers, parents and administrators was convened to make recommendations about the direction of the school. After revising the school's vision, they identified more than twenty different types of data that could help them determine next steps. Each member received a notebook containing the data and a wiki (www.wikispaces.com) was developed so that the members could share their observations, comments, and work online.

To help with the analysis they organized several "data nights" where the group met, worked together to examine the data, identify patterns, discuss implications and rate the school's current success. The analysis and discussion continued in small groups.

These data nights were useful because they were designed so that every participant had access to the same data, had an opportunity to talk about its meaning and contribute to the analysis. This collaborative effort helped move the group forward and built support for the recommendations that emerged. (Williamson & Blackburn, 2011)

Look for Patterns

One of the challenges associated with data is that you may get different information from different sources. Or you may find that you don't have nearly enough data in other areas.

A useful strategy is to conduct a "Pattern Analysis" where you look across data points and identify areas for improvement. Always look for multiple indicators, or data points, that may tell you similar things. If they conflict it may indicate the need for further data. Here's one graphic organizer that can be used to conduct a pattern analysis.

Pattern Analysis Template

Data Source	Strengths	Opportunities
Overall Areas of Focus (based on multiple data sources)		
Strengths		Opportunities for Growth

Adapted from: Williamson & Blackburn (2011).

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Faculty/Parent/Student Study Groups - Study group is a generic term applied to a variety of types of small group discussion. Study groups are used in many schools to research a proposed program, to examine student achievement data, or to look at school improvement initiatives. Murphy (1999) found that study groups are most successful when the faculty decides what the group will study and participation is voluntary. In some schools the focus is book study. One Michigan school organized into groups to read and discuss Schmoker's *Results: The Key to Continuous School Improvement* (2012) and identify how they could more effectively use data to guide their instructional decisions. A school in Utah established study groups to look at student achievement data and then examine each of the nine research-based instructional strategies identified by McREL (Mid-Continent Research for Education and Learning; www.mcrel.org) (Marzano, Pickering & Pollock, 2001). The goal was to use data to shape decisions about instructional practices.

Focus

Too often schools try to do too many things at the same time. This dilutes the energy of both teachers and principals and may detract from your ability to make progress. Working with teachers and other stakeholders is a useful way to focus your efforts. Plan thoughtfully and purposefully for the discussion. Present the data in non-threatening and non-accusatory ways. Focus on areas for growth, rather than areas of concern; opportunities rather than weaknesses" (Schmoker, 2012; Williamson & Blackburn, 2011). Here are some suggested discussion prompts.

- As you look at the data, what patterns do you see?
- What do the data say about our strengths, our points of pride?
- What do the data indicate are some opportunities for improvement? How do we select a priority?
- What other data might we want to collect so that we can more completely understand the issues?

Non-Judgmental Analysis (Force-Field Analysis)

A useful tool for non-judgmental discussion of a problem is the Force-Field Analysis. Developed in the 1940's, it can help analyze a problem and determine a course of action. One of its benefits is that it allows a group to examine all sides of an issue including the forces for and against that issue.

Factors Working For	Factors Working Against
Next Steps:	

When you use a Force-Field Analysis you want to state the issue positively, then discuss and identify the factors working for and against the issue. Discuss them thoroughly and assign a score reflecting the strength of the factor (high, medium, low). Continue the discussion of the factors with the greatest strength to identify action steps.

Summary

Using data is an expectation for every leader. For school leaders it is critical because sound analysis can identify policies, programs and practices that can be continued, modified or discarded. Maintaining a focus on improvement is essential. It builds confidence in the analysis and improvement plans that emerge from the analysis.

Online Resources

Making Sense of Data Driven Decision-Making in Education – (2006)

RAND Occasional Papers

http://www.rand.org/pubs/occasional_papers/OP170.html

This paper shares strategies and tools for using data to guide decisions about instructional practices.

More Than Numbers – Williamson and Blackburn (2009)

<http://tinyurl.com/kfx7hst>

This article from *Principal Leadership* discusses how qualitative data can offer insights into a school's culture and complement quantitative data already present in schools.

Making Sense of All Your Data – Lachat, Williams & Smith (2006)

<http://www.principals.org/portals/0/content/54342.pdf>

This article from *Principal Leadership* suggests strategies that school leaders can use to find the data they need for decision-making.

Data-Based Decision Making – Skalski & Romero (2011)

http://www.nasponline.org/resources/principals/Data_Use_Jan11_NASSP.PDF

This article from NASSP's *Principal Leadership* discusses how school leaders must know which questions to ask to find the data they need.

Using Student Achievement Data to Support Instructional Decision-Making (2011)

http://www.naesp.org/sites/default/files/Student%20Achievement_blue.pdf

This white paper from NAESP offers suggestions for collaborative use of data to improve teaching and learning.

Investigating Multiple Sources of Data – Shaffer & Derman (n.d.)

<http://piic.pacoaching.org/index.php/piic-coaching/mentor-blog/346-investigating-multiple-sources-of-data>

This article from the Pennsylvania Institute for Instructional Coaching discusses multiple sources of data.

Data-Driven Decision Making in K-12 Schools – (2005)

<http://www.technology-alliance.com/pubspols/dddm/dddm.html>

This article from Technology Alliance provides an overview of the importance of using data to guide decisions about school improvement.

White Paper: Data-Driven Decision Making: A Powerful Tool for School Improvement - Messelt (2004)

https://www.erd.c.k12.mn.us/promo/sage/images/Analytics_WhitePaper.pdf

This paper from Sagebrush Corporation discusses how data can be used to improve student learning and help schools select appropriate data-driven strategies for school improvement.

Print Resources

Schmoker, M. (2012). *Results: The Key to Continuous School Improvement* (2nd ed.). Alexandria, VA: ASCD.

Wellman, B. & Lipton, L. (2004). *Data-driven dialogue: A facilitator's guide to collaborative inquiry*. Sherman, CT: MiraVia.

Williamson, R. & Blackburn, B. (2010). *Rigorous schools and classrooms: Leading the way*. New York: Routledge.

This *Research into Practice* brief was prepared by Practical Leadership, LLC and authored by Ronald Williamson, Professor of Educational Leadership at Eastern Michigan University and Howard Johnston, Professor Secondary Education at the University of South Florida. This brief is prepared for use by principals and school staff in Oregon GEAR UP schools.

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