

Guide to Using Data in School Improvement Efforts

**A Compilation of Knowledge From Data Retreats
and Data Use at Learning Point Associates**

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Learning Point Associates worked closely with Dr. Sargent in developing manuals for Data Retreats, a forum she used with school improvement teams throughout Wisconsin. Learning Point Associates continues to scale up Data Retreats and considers Dr. Sargent and CESA 7 a valuable resource of information on using data in school improvement efforts.

About This Guide

Are you looking for ways to integrate data into the school improvement process? Would you like to explore ways to use data to guide decision making about instruction, curriculum, and programming? You are in good company.

As the gap between low- and high-achieving students continues to grow and the implementation of high-stakes, performance-based accountability systems becomes the norm, the need for data—instead of intuition, tradition, and convenience—to guide administrative and educational decisions has become increasingly important. Unfortunately, many educators have little or no experience in using data systematically to inform decisions. More than likely, they have developed annual goals, but these goals have not been driven by the careful study of the school’s and district’s evidence of student learning.

This guide is designed for educators who are beginning to learn how to use data in their school improvement planning process. Because most educators are not trained in data-driven decision making and planning, it is necessary to begin with a foundation on which to build processes for data use. The guide offers some foundational information on types of data, strategies for analyzing and understanding data, and methods for determining how these efforts can influence goals and planning.

In addition, the Appendix provides additional resources for using data in school improvement. For each type and level of data, these resources assist education leaders in collecting the data to help make decisions for instructional and programmatic areas.

Although the combination of these materials is by no means a comprehensive guide to data-driven decision making, it introduces the four types of data that educators can use to define their problems and needs, select improvement strategies and goals, initiate change, and monitor progress. These four types of data are achievement data, demographic data, program data, and perception data. Because this guidebook discusses broader types of data (rather than specific data sources), schools or districts are able to draw connections to their own data. The goal is that after using this guide, educators will understand the importance of using a variety of data sources in the school improvement process and will begin to apply the recommendations outlined in the guide and obtain successful results.

Introduction

As educators take the journey to bring their students to standards that exemplify world-class achievement, they often find themselves embarking on new territory. The journey can be somewhat confusing and frustrating, or it can be clear and rewarding. This adventure is best undertaken *collaboratively* and *reflectively*.

Collaboration asks members of a school community to join in ongoing problem-solving ventures—pooling their knowledge, talents, and ideas. In school systems, district and building leaders join teachers, support staff, and parents in teams to explore improvement issues. Easier said than done, successful collaboration requires leadership skills in creating numerous and diverse partnerships, sustaining a vision, focusing on group problem-solving, using conflict resolution, and compromising.

Reflection, a companion to collaboration, asks the school community to think about the information in front of them and to adjust their actions accordingly. On the school improvement journey, reflection is necessary not only for staying on the improvement path but also for discovering the best path. Successful reflection depends on thought-provoking information and time for individual and team study.

Put together, *reflective collaboration* is a powerful process that occurs among staff and other members of the school community. When reflecting about improving student achievement, the necessary information can be found in your system's data. The data in your schools provide important clues about your work and your students' performance. But how do you embark on this reflective collaboration process?

First, the process requires time—time during the day and the week to involve teachers, always a challenge. Schools that are committed to using data to guide their work allocate time for teachers to meet, discuss, reflect upon data, and make informed instructional decisions. Schools identify the need for this time, then find it through a combination of creative scheduling (e.g., having all first-grade teachers share student data while students attend “specials” such as art and music), and priority setting (e.g., using weekly faculty meetings to analyze student data).

Second, continual exposure to data helps to build a district and school culture that values the use of reliable, complete information to guide decisions and solve problems. For many people, the idea of working with data is unfamiliar and perhaps uncomfortable. The fact is, whether you realize it or not, you use data every day to help make decisions. You listen to weather updates, look over stock market reports, and read healthy-living tips in magazines. Just as data help you make personal decisions, data will help your team make decisions about school improvement.

Before jumping to the data types and analyzing them for your continuous school improvement process, there needs to be a discussion on improving student learning. The following section introduces the school improvement cycle and lists characteristics of data-driven decision.

Improving Student Learning

The underlying assumption for school improvement efforts is that student learning can and should improve on a continuous basis. Students come to schools to learn—to find exciting challenges and new understandings. If schools are to provide learning environments that are meaningful and engaging, educators must continually reflect on the quality of school systems and focus their efforts to make them better.

District and school leaders are guided by a clear vision focused on student learning and a well-defined mission statement aimed at high-quality learning environments and optimum student achievement. Insightful leaders empower collaborative teams, engage their staff in purposeful analysis of their systems, and guide them in making data-based decisions.

The following section describes how and why data can and should be incorporated into this continuous improvement process.

The School Improvement Cycle

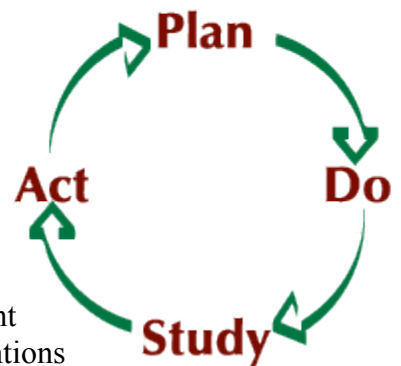
Effective school improvement processes are cyclical and continuous, with no clear beginning or end. The plan-do-study-act cycle for school improvement is shown in Figure 1. An early version of this cycle originally was developed by Dr. Walter Shewhart (1939), and it provided a foundation for much of the work by corporate management expert W. Edwards Deming (see Rinehart, 1993). This cycle contains four major activities:

- Plan: Develop a plan for improvement.
- Do: Implement the plan.
- Study: Evaluate the impact according to specific criteria.
- Act: Adjust strategies to better meet criteria.

In spite of your good intentions, not every intervention will be successful for every child. At times, your efforts may not lead to the results you anticipated. But with rigorous measurement of your work, informed decision making, and a willingness to change, the improvement process can be a forgiving one. That is, when you evaluate how interventions (such as using new teaching techniques) affect student learning, you learn what interventions are working and for whom they are working. With this information, you can adjust your practices, renew your plans, and try again. You can work to *continuously* improve.

Data are the key to continuous improvement. When you “plan,” you must use data to provide insight and focus for your goals. Data patterns reveal strengths and weaknesses in the system and provide excellent direction. When you “do,” you collect data that will tell you the impact of your strategies. Through collaborative reflection, you “study” the feedback offered by your data and begin to understand when to stay the course and when to make changes. Then you “act” to refine your strategies. Eventually, the whole cycle begins again.

Figure 1:
The School Improvement Cycle



As shown in Table 1 below, focusing on data throughout the school improvement cycle—rather than on intuition, tradition, or convenience—marks a great change in what administrators and teachers have used in the past to drive their decision making regarding student learning.

Table 1. Comparison of Traditional and Data-Driven Decision Making

Decision Making Based on Intuition, Tradition, or Convenience	Data-Driven Decision Making
<ul style="list-style-type: none"> Scattered staff development programs 	<ul style="list-style-type: none"> Focused staff development programs as an improvement strategy to address documented problems/needs
<ul style="list-style-type: none"> Budgetary decisions based on prior practice, priority programs 	<ul style="list-style-type: none"> Budget allocations to programs based on data-informed needs
<ul style="list-style-type: none"> Staff assignments based on interest and availability 	<ul style="list-style-type: none"> Staff assignments based on skills needed as indicated by the data
<ul style="list-style-type: none"> Reports to the community about school events 	<ul style="list-style-type: none"> Organized factual reports to the community about the learning progress of students
<ul style="list-style-type: none"> Goal setting by board members, administrators, or teachers based on votes, favorite initiatives, or fads 	<ul style="list-style-type: none"> Goal-setting based on data about problems and possible explanations
<ul style="list-style-type: none"> Staff meetings that focus on operations and the dissemination of information 	<ul style="list-style-type: none"> Staff meetings that focus on strategies and issues raised by the local school’s data
<ul style="list-style-type: none"> Parent communication via twice-a-year conferences at elementary “open houses” and newsletters 	<ul style="list-style-type: none"> Regular parent communication regarding the progress of their children
<ul style="list-style-type: none"> Grading systems based on each teacher’s criteria of completed work and participation 	<ul style="list-style-type: none"> Grading systems based on common student-performance criteria that report progress on the standards as well as work skills
<ul style="list-style-type: none"> Periodic administrative team meetings focused solely on operations 	<ul style="list-style-type: none"> Administrative team meetings that focus on measured progress toward data-based improvement goals

Although there are numerous face-to-face and online solutions for schools and districts to learn the process of data-driven decision making, valuable information can be learned before the hands-on data work is started. This guide will help you understand the value and use of data to inform decisions.

Subsequently, more in-depth and ongoing work is necessary to build on this foundational presentation. Learning Point Associates has a solution called Data Retreats. This two-day workshop uses actual data to further discuss data analysis through the four lenses of data, and presenters assist school leaders in the creation of research-based strategies, data-based goals, and an evaluation plan to measure results. (More information on Data Retreats appears in the Appendix.)

Throughout these chapters, other solutions will be mentioned as areas to get or understand data. If you don't find your solution within this publication, please feel free to visit the Learning Point Associates *Data Use* Web site at www.ncrel.org/datause/. This Web site provides additional products and solutions for data use in schools and districts.

Data Use Essentials

So now that it is understood that you are building knowledge around different aspects of school improvement processes, you can get started learning about using data. Guidance will be provided in the following eight areas:

1. Develop a Leadership Team
2. Collect various types of data
3. Analyze data patterns
4. Generate hypotheses
5. Develop goal-setting guidelines
6. Design specific strategies
7. Define evaluation criteria
8. Make the commitment

1. Develop a Leadership Team

In order for data to be successfully incorporated into the school improvement cycle, school and district representatives should form a team. A team (rather than an individual or small group) is ideally suited for this work for the following reasons:

- The steps to incorporate data into the school improvement cycle take a lot of work and require the commitment of many individuals.
- Data come from a variety of sources. It is important to have representatives with different perspectives to ensure that various sources of vital data are not overlooked.
- Discussions are richer and more diverse with numerous points of view and insights.
- Dissemination of information is much easier when there are multiple people who can remember and share experiences.
- The effort needed to sustain continuous school improvement during the current and subsequent school years is much easier when tasks are divided among a team of people.

For these reasons, district and school leaders should work to develop a Leadership Team that includes members from the school and from the wider community (parents, business leaders, and others with an interest in the school). The size of the team may vary with the size of the district.

The district Leadership Team should include a variety of representation (see Table 2). This team should be kept to a manageable size. When a team becomes too large, its meetings are less likely to achieve progress during the school year. Teams of 15 or fewer people are most effective.

Table 2. Participants on the District Leadership Team

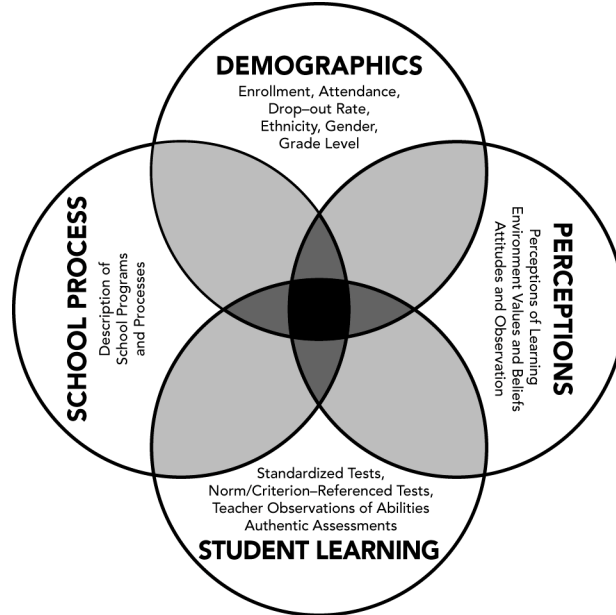
District Leadership Team	
District superintendent	Grades 3–5 teacher representative(s)
All building principals	Middle school teacher representative(s)— core subjects
Special education district representative	High school teacher representative(s)— core subjects
Curriculum district representative	Noncore subject teacher representative(s)
Assessment district representative	Parent representative(s): preferably hard-to-reach parents and parents who are not employees of the school district
Special programs representative (Title I, At Risk, Gifted and Talented)	School board member
Guidance counselor representative and/or other pupil services staff	Community representative
Grades PK–2 teacher representative(s)	Business representative

2. Collect Different Types of Data

Collecting the data should be a planned, purposeful process. Valuable data will guide the school improvement team in developing improvement goals for the benefit of all students. The four types of data to collect and use as indicators of school or district success and progress are as follows: achievement data, demographic data, program data, and perception data. Learning Point Associates Data Retreats uses these four specific types as a framework for the school improvement team to move forward with data.

Although these four types of data are very specific, other models of data use may have broader categories to ensure that all types of data are included. For example, Dr. Victoria Bernhardt (2004) uses the graphic illustrated in Figure 2 to describe the types of data and each of their intersections. This model provides additional support for educators who are beginning to examine the types of data to collect and analyze.

Figure 2. Types of Data



MULTIPLE MEASURES OF DATA


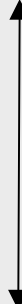
Reprinted from page 21 of *Data Analysis for Continuous School Improvement* (2nd ed.), by Victoria L. Bernhardt, with permission of the publisher. © 2004 Eye on Education.

Prior to the school year, the administrative team should review and select from available sources of data. To do this successfully, the team needs to develop a plan that will set forth processes to collect important data throughout the school year. This data collection plan should form a blueprint for gathering key descriptive information. The following four sections provide information and guiding questions that are crucial for teams to use when designing their own blueprint for collecting the four types of data.

Achievement Data

Student achievement data are the most important type of data to focus on. Educators should understand that achievement data comes in forms other than standardized test data. A comprehensive assessment plan can make use of data from each of three tiers: annual, large-scale assessment data; periodic assessment data; and ongoing classroom assessment data. These tiers vary according to their purposes, rate, and type of feedback they provide, and their targeted audience. This information is summarized in the Table 3.

Table 3. Comprehensive Assessment Plan

	Assessment purpose	Rate of feedback	Type of feedback	Primary target of feedback
Tier III	Annual large-scale	Infrequent	General, broad	General accountability audience: policymakers, community, administrators
Tier II	Periodic grade level and subject area			Administrators, teachers
Tier I	Ongoing classroom			Frequent

Tier III – Annual, Large-Scale Assessment Data. Tier III data, such as annual state assessments, is designed primarily for accountability purposes—to report to external members of the school community a broad view of the district’s achievement levels. Its primary school-community audience is board members, administrators, and program leaders. Tier III data also can be useful to curriculum teams, which use the information to evaluate the effectiveness of the curriculum, and other school community members (teachers, students, and parents).

State assessments have limited use because they are designed to sample broad domains of student knowledge. They are administered once a year and can be used as broad indicators of the school’s effectiveness.

Team members may become frustrated when they analyze their Tier III assessment data—they can take it just so far. Although these assessments can provide valuable information about the district’s general success, they are not helpful when evaluating student progress, and they do not provide useful data during the school year.

Tier II - Periodic Assessment Data. Throughout the school year, periodic assessments efficiently provide immediate results of student performance on key standards-based skills in a content area and grade level. Periodic assessments can be used by teachers and administrators to establish the entrance-level performances of students when the school year begins. By continuing to use these assessments throughout the year, teachers and administrators can assist in tracking students’ progress and their strengths and weaknesses in particular content areas. These types of assessments can be used to create grouping of students based on their changing skill needs; they also can identify which students need enrichment or special assistance at any point in the middle of the year.

These assessments, if designed well, actually become embedded within instruction. Well-designed assessments tell teachers what does and does not work for more effective instruction.

Periodic assessment data should be collected and used during the school year so that it eventually can be incorporated into the school improvement cycle. This assessment information will change the reflective collaboration that team members engage in at Leadership Team meetings. Teams will discuss progress, consequences, and actions—focusing much more on what kind of action was taken for students with specific needs. Team members and all staff will be assuming more responsibility for students who soar academically and for students who struggle.

Tier I - Ongoing Classroom Assessment Data. At Tier I lies the heart of assessment: the classroom. Building a culture of assessment means assessing and using data as a natural part of every teacher’s professional repertoire. Assessing performance on the standards means assessing the depth of each student’s conceptual understanding as well as knowledge and skills. An entire continuum of assessment options can meet a variety of purposes. But even if teachers are implementing a variety of assessment methods, these assessment options are meaningless unless their results are used to make decisions for improving student achievement.

Educators must challenge themselves to lay out the data from daily assessments in a way that shows clearly who is excelling and needing enrichment, who is performing on target, and who needs help. Then, the challenge is to find a way to provide that help. Gradebooks must be used more meaningfully—not merely for assigning grades but for charting useful information in making decisions. Every lesson and unit plan should be based on assessment data.

When meaningful data are kept and used in gradebooks, charted and displayed with students, or organized in portfolios or electronic decision-support systems, teachers—and often students—are “in the know.” Based on these data, decisions can be founded solidly on how students are performing.

Guiding Questions for Collecting Achievement Data

- What evidence can we collect about our students’ learning?
- What evidence do we have that shows the knowledge, skills, and understandings our students have achieved?
- Which data indicate the degree to which our students show the conceptual understandings and generalizations in our standards?
- What evidence shows which students are meeting or exceeding our achievement expectations and which are not?
- What do we know about how each individual student learns?

Demographic Data

Demographic data are the second type of data to collect and evaluate. In an era of accountability and increasing school choice, schools must carefully track their communities and come to know them well. When determining which demographic data to collect, the goal is to thoroughly know the school population in order to clarify problems and needs. Data may be collected on each student's gender, ethnicity, or economic status; this data is relatively static. Behavioral data, such as student attendance or school suspensions, is dynamic.

Data should be collected that show the following:

- Demographic information on the students that enroll in schools and their parents
- Mobility patterns in and out of grades and schools
- Student transportation needs
- Rate of enrollments in special programs, such as English as a second language (ESL), special education, or after-school programs
- Neighborhood characteristics
- Parent involvement
- Behavior and social problems of students

It is best to collect student data longitudinally over a five-year period so that trends can be viewed and predictions made. Data from previous years should be organized in a manner that will facilitate comparisons from year to year.

Guiding Questions for Collecting Demographic Data

- Who are our students?
- What trends do we see in our student population?
- What factors outside the school may help us understand our students?

Program Data

Program data are the third type of data to collect. Rich sources of information about the quality of programs in the school are often hidden and not collected. These data are not always readily quantifiable but are important and often telling in how they can support a hypothesis. Time should be taken with the Leadership Team to sort out the questions they have about their programs. In particular, data should be collected when there are questions about student success or student achievement. For example, data about the time demands of the instrumental music program may be important to collect if there is a question about band students' academic

achievements. Programs can include a wide variety of offerings, from specially funded programs to academic curricular sequences to extracurricular programs.

Plans should be made prior to the school year to collect program evaluation data. The collection of these data can be seen as “action research,” which involves collecting data that will inform future decision making about programs and curricula. To prepare for an analysis of educational programs, collect data that profile the enrollment in your school’s programs and courses. In addition to collecting information about student enrollments and performances, personnel should collect data about the implementation of standards-based curricula.

Guiding Question for Collecting Program Data

- How successful are our programs in bringing about the academic excellence articulated in our standards?

Perception Data

Perception data from the school community are the fourth type of data to collect and evaluate. These data can be enlightening because they help educators pay attention to the opinions and ideas of the school community. Educators need to recognize the many different members of the school community, and realize that how they value the school’s services impacts students profoundly.

To evaluate satisfaction, the Leadership Team should begin with a list of members that make up a school community:

- Students
- Parents
- Teachers and staff
- Community citizens
- Community businesses
- Administrators
- School board
- Regional colleges and universities

Guiding Questions for Collecting Perception Data

- How do the members of our school community feel about our school and district?
- How satisfied are school community members about our educational programs?
- What do the members of our school community perceive to be the strengths and needs in our school?
- What do the members of our school community think about the skills of our graduates?

Data collection should be orchestrated to provide an honest portrayal of the district and school climate. These data, often seen as intangible by members of the school community, can be collected in creative ways. Surveys, polls, even analyses of local newspaper editorials and letters can suggest a school climate. If school community data are not readily available, the team should plan to collect perception data in their areas of need.

3. Analyze Data Patterns

Achievement, demographic, program, and perception data are best analyzed through each of their own lenses. Then, when brought all together by comparing everything to the achievement data, clear patterns can appear. These patterns help in developing improvement plans and strategies.

Because the primary emphasis in school improvement is on student learning, analysis of achievement data is the first and foundational lens for all other data analyses. As team members sort through the other three lenses—demographic, program, and perception data—they continue their study using the achievement lens.

The goal here is to uncover patterns and relationships among the data. Although analyses can be conducted with statistical programs and electronic data tools, another process cannot be overemphasized: digging through the data, finding patterns, diagramming observations, and collaborating about what is seen. It is a powerful process. Working in a team, individuals can discover new ideas and views by collaborating with their teammates—discoveries they would never have made on their own.

After you have analyzed your team’s achievement, demographic, program, and perception data, it is time to pull all of the observations together—to move from looking at details to stepping back and looking at it all from a distance. This step is the transition from analysis to interpretation.

To do this, your team must summarize observed strengths, and summarize and rank observed problems across all data. To summarize all problems and strengths, use the following guiding question:

Guiding Question for Analyzing Data Patterns:

- Based on all the data we have studied and the patterns we have observed, what is the sum of problems that have emerged from the data?

4. Generate Hypotheses

Formulating questions in response to the data (e.g., Why are our eighth-grade students meeting the standards in math but not in language arts?) and considering responses to these questions, often by consulting additional data, may lead to possible explanations for observed data patterns. These explanations are called *hypotheses*. The goal of this process is to get closer to the root causes of your children’s performance problems. This goal enables you to take specific actions to help your children perform at the levels of excellence set forth. The posing of hypotheses can be encouraged and recorded during the data-analysis phase but should also receive special attention after the data patterns are sorted.

During this phase, the team should use the following guiding questions and first steps:

Guiding Questions for Generating Hypotheses:

- Why are our children performing the way they are?
- What in our systems and practices is causing our children to have these problems?

First Steps:

- ***Set team ground rules.*** Since team members will have their own ideas about why things are the way they are, ground rules should be determined and enforced.
- ***Record hypotheses and then accept or reject those hypotheses.*** For each problem statement, have a team member write ideas on a chart. As these hypotheses are generated and listed, label them as “accepted” or “rejected” and indicate the reasons for doing so. Table 4 lists both accepted and rejected hypotheses for a sample problem statement.

Table 4. Sample Hypothesis Setting

SAMPLE HYPOTHESIS SETTING	
<p>Problem: <i>Achievement levels in math drop grade by grade until they are at very low levels in Grades 6, 7, and 8. They pick up only slightly from Grades 9 to 12.</i></p>	
Hypothesis	Evidence to the Contrary?
<ul style="list-style-type: none"> There are more special education students each year in regular classes, and they pull our scores down. 	<p>REJECT. We checked special ed enrollments. They do increase from Grades K–3, but stabilize until Grade 6, and then decline to Grade 12.</p>
<ul style="list-style-type: none"> Our standards are just too high. The tests are just too difficult, year by year. 	<p>REJECT. We looked at test results nationally and in neighboring districts. Although mathematics performance is low nationally and statewide, our performance is particularly low compared to our neighbors and to the national sample. We have also studied the items and concur that the items are fair for the grade levels assessed.</p>
<ul style="list-style-type: none"> Our math teachers in the intermediate and middle levels have not had the proper training to teach the current math standards. 	<p>ACCEPT AS A POSSIBILITY. We looked at the licenses, and the teachers do have appropriate credentials. However, we looked at the sequence and record of professional development activities, and our district has provided no math professional development in 10 years.</p>
<ul style="list-style-type: none"> Our textbooks not only are out-of-date but also were not adopted in a logical grade-by-grade sequence. 	<p>ACCEPT AS A POSSIBILITY. We charted our math textbook adoptions. They range from 1991 to 1995 from five different publishers. We are long overdue for new materials adoption.</p>

5. Develop Goal-Setting Guidelines

Now that data patterns have been analyzed, problem areas prioritized, and hypotheses generated, your team is ready to develop goals for improvement. Your team should work both on long-range goals (five years from now) and on short-range goals (those that are to be achieved within one school year).

The first step is to focus on the most urgent problem and its hypothesis. Considering that problem, your team should use the following guiding question and first steps:

Guiding Question for Developing Goal-Setting Guidelines:

- What outcome of improvement will we set for our students regarding this problem?

First Steps:

- Discuss the *outcome* you want for your students *five years* from now.
- Project *one year* toward that goal. What outcome will you set for yourselves to attain within a year?
- Think about the capacities in your staff and your students and the barriers that must be overcome.
- Discuss the level of commitment (e.g., time, finances, and so on) necessary to reach this outcome. During this discussion, avoid talking about specific strategies and instead focus on the goal.
- Discuss what your data will look like a year from now when you've achieved this goal.

Second Step:

The second step is to develop a one-year goal statement about your most urgent problem. Your team should remain focused on this goal until consensus is reached about the exact wording of the goal. Table 5 provides guidelines for developing goals, and Table 6 provides sample improvement goal statements.

Table 5. Guidelines for Developing Goals

Guidelines for Developing Goals
Well-written goals have the following characteristics:
<ul style="list-style-type: none">• Clear. Goals should be focused and clearly stated.• Data based. The goals should be directly based on the observed patterns seen through the data and their connection to the evaluation criteria.• Few. Goals should be few in number; they should be substantive and focus on the primary purpose of improving student achievement.• Measurable. Goals should be measurable. They should articulate the desired outcome, not the specific strategies.• Sustainable. Goals should be systemic and sustainable. The goals should lead to system changes and adjustments that can be sustained into the future.• Community driven. Goals should be developed with outcomes that will meet the needs of the district’s community.• Developed by consensus. All team members should agree on all of the district goals.• Attainable. The goal should be one that can be achieved. Avoid unrealistic goals and aim for tangible, realistic goals that cause stretching but are attainable.

Drafting successful goals can be a challenge if the team members have many different ideas on how to improve the school or district. Make sure the goals are “SMART” goals. This acronym contains many of the key guidelines in a manner that may be easier to remember.

- S**pecific
- M**easurable
- A**chievable
- R**esearch based
- T**ime Sensitive

After the team has developed a goal statement for the school or district’s most urgent problem, move on to the next problem statement. Keep drafting each goal statement until the team has articulated a focused set of goals (e.g., three to five goals).

Table 6. Sample Improvement Goals

Sample Improvement Goals
<ul style="list-style-type: none">• To improve the mathematics performance of students in Grades 6, 7, and 8 so that at least 65 percent of the students in Grade 8 are at the proficient level and 70 percent of the students in Grades 6 and 7 surpass the TerraNova median scale scores.• To improve the mathematics performance of students in Grades K–8 so that by the end of eighth grade, 80 percent of students are proficient in basic algebra and geometry.• To improve student attendance so that 99 percent of our students attend school on 99 percent of school days.• To improve the science performance of students in high school, Grades 9 and 10, so that 80 percent of Grade 10 students perform at proficient or advanced levels, and there is an increase in student enrollment in elective science courses in Grades 11 and 12.

6. Design Specific Strategies

Goals are meaningless unless action backs up the commitment. This part of the improvement-planning process moves forward the hypotheses set forth by the team. Time must be allowed to do a careful, thorough job when designing these strategies.

When clear goals are developed and are listed as top priorities, team members should begin to think about research or information they may have regarding that issue. For example, if there is a goal regarding improvement in writing, team members should bring their own materials regarding that subject to the meeting to use as a reference in designing strategies. To define a strategy for a particular goal, use the following guiding question and first steps:

Guiding Question for Designing Strategies:

- What specific actions will we take to achieve this improvement goal?

First Steps:

- **Brainstorm.** Your team must focus on the actions you can take to turn student performance around to meet a particular goal. While brainstorming strategies, think *action*. What specific actions will you take to achieve your improvement goals? What specifically can you *do* in your schools to make a real, measurable difference for your students?
- **Use the hypotheses.** Specific strategies can come naturally from the hypotheses that were accepted as possibilities.
- **Design several strategies.** There is a much better chance of reaching a goal when multiple related strategies are implemented throughout the entire school year.

Following are some additional guiding questions to consider when defining specific strategies. Table 7 provides two examples of defined strategies. These example strategies are based on the accepted hypotheses listed in Table 4 (see page 15).

Guiding Questions for Defining Specific Strategies

Is this strategy:

- *Clear* and understandable to all readers and users?
- *Dependent* on other activities? (If so, be sure to describe the sequence of actions.)
- Based on *best practices*?
- *Observable* and measurable?
- An action that will make a positive difference?
- *One* specific action or activity?
- An activity that will definitely *lead to* accomplishing the goal?
- One that *all* team members endorse?
- *Assignable* to specific persons?
- *Doable* – one that can be implemented?

If your team is clear about the problem but uncertain about strategies, the most important action to propose is one of researching best practices. Your team can build in a systematic process to investigate what other successful schools have done to meet a similar problem. The caution here is to conduct the research as quickly as possible so that subsequent actions can be added to the plan.

Table 7. Examples of Defined Strategies

Examples of Defined Strategies

- Organize and hold a professional development workshop for intermediate- and middle-level mathematics teachers. This workshop will explain what knowledge, skills, and competencies these teachers need. This content will reflect state standards and be classroom based. Teachers will create and evaluate their own professional development goals to better their content expertise and instruction processes. Following the workshop, teachers will submit a form detailing how they used and how they will continue to use what they learned.
- A mathematics committee representing Grades 6, 7, and 8 will be charged with making textbook and materials adoption recommendations to the school board. The primary focus will be on middle grades, but issues regarding elementary and high school mathematics programs will be heard. In addition, action will be taken to maintain a rigorous, connected scope and sequence that is standards based.

It is important for the team to realize that strategies mean hard work. Strategies are commitments to carrying out real action. Therefore, the team should take time to discuss the level of commitment and hard work necessary to carry them out.

Some further considerations your team may want to include in your strategies are timelines (detailed dates and times the strategy is to be implemented), assigning duties (listing a person to be responsible), and documenting the plan (including teachers and duties on the improvement plan for each goal).

7. Define Evaluation Criteria

At the close of a school year and in preparation for another year's data analysis, the team should be prepared to evaluate the success of its improvement efforts. Clearly defining the criteria at the beginning of the process will be greatly appreciated as you approach the end of the school year in the spring.

One area of goal setting that often gets left behind is building in an evaluation plan from the start. It's one thing to set goals, but it's quite another to deliberately evaluate your success—using data as your guide—against the initial goal.

To develop an evaluation plan for specific strategies, team members should lay out the measures that will be used to examine how successful each strategy was. They should ask themselves the following guiding questions.

Guiding Questions for Defining Evaluation Strategies:

- How will we know if our strategies are successful?
- What evidence will we have to show the success of our action?

Data showing the success of the various strategies and the degree of implementation are equally important to study, along with data about achievement of the goal. It is important that the team stay focused on the desired measurable outcome and the evidence needed to show success.

Some evaluation criteria may consist of:

- Test scores
- Attendance counts
- Records of meetings held and actions accomplished
- Observations
- Survey tabulations
- Evaluation data about staff development activities

All measures that evaluate the success of the strategies will imply that the goal was met. It is important, however, to set out a specific measure of the goal. If team members have written their goals to be measurable, evaluation will be simple.

Straightforward collection of the assessment or other specified data is necessary to evaluate whether or not the goal was met. Look back at the improvement goal, find information about the data that will be collected, and determine what levels or criteria in the data will show fulfillment of the goal.

8. Make the Commitment

The final step is ensuring a commitment to the school improvement plan. Team members and responsible parties should sign a commitment statement for the improvement plan. This statement is their agreement to work toward fulfilling the strategies clearly outlined. Signing a piece of paper at a leadership meeting, however, may easily be forgotten once the school year begins. To help solidify their commitment, teams can simply add their own commitment statement to each improvement plan.

At one of the leadership meetings, teams should allocate time and devote it to their plan of rollout to the rest of the staff.

The rollout should be designed to:

- ***Inform teachers*** about the data so they are aware of their school’s challenges and celebrations.
- ***Cue teachers in on the patterns*** that exist in the data and share the list of observed problem areas in their ranked order.
- ***Summarize*** the various hypotheses that were posed.
- ***Share the full improvement plan.*** Sometimes it is a good idea to leave several blanks for strategies so that teachers in meeting sessions can add their own brainstorm ideas. This process helps to build teacher ownership of the plan of strategies.
- ***Assign roles.*** All those who were on the team may want to think about their role in the rollout. In some schools these members actually split up the task of sharing the data and the plans in a creative “back-to-school” challenge and kick-off. This plan works best if the team comprises just as many teachers as administrators.
- ***Communicate the plan.*** Prepare something that describes the improvement plan clearly to all staff in writing (a special bulletin, newsletter, or other communication means). Teachers can take it back to their classrooms and keep it next to their lesson plan books. Remind all staff that this is a whole-staff commitment for the entire year.

The Value of Using Data Often

The foundational information on incorporating data into school improvement planning has focused heavily on data that provide feedback on an annual basis. Analyzing this data can be an insightful process in identifying strengths and weaknesses of students. Data collected annually can contribute to judgments made about the acquired skills of students, the effectiveness of teachers, and the quality of the curriculum *after* learning or instruction has taken place.

If your goal is to improve the system, however, you need to gather data that tell about the variables in the system on a continual basis. When working with achievement data, you do not want to make important programmatic decisions without a full view of how the students are learning. Yearly standardized tests are not adequate for a comprehensive assessment system. When analyzing the success of learning in the system, you need to look at progress to see if your students are improving and showing growth. Therefore, the state assessment data must be complemented with other tiers of data to make sound instructional and programmatic decisions.

In addition to using tiers of data on a continual basis, the Leadership Team should work to build the data literacy of all teachers and staff. Developing literacy around the use of data to make decisions is valuable and has a major impact on a school's improvement effort. A long-range inservice training plan should be devised. This plan should consist of several components:

- Partnerships with area colleges and universities to devise hands-on learning experiences on using data.
- Forums and team meetings during the school year with guided assistance. Teachers can meet in teams to review periodic and classroom assessment data. There is no better way to learn than to delve in with relevant, current data about students in the classroom.
- A system in which teachers can serve as mentors to their peers. Mentors from a service agency or college or university can partner with teachers on the use of data.
- Periodic sessions throughout the year in which the Leadership Team comes together to go over ongoing data collected. Team membership should be on a rotating basis so all teachers have an opportunity to share.
- The use of data in supervision evaluation systems. Administrators can require or strongly suggest teacher involvement with data. Such requirements, however, should be supported with training, mentoring, and group work.

References

- Bernhardt, V. (2004). *Data analysis for continuous school improvement* (2nd ed.). Larchmont, NY: Eye on Education.
- Rinehart, G. (1993). *Quality education: Applying the philosophy of Dr. W. Edwards Deming to transform the educational system*. Milwaukee, WI: ASQC Quality Press.
- Shewhart, W. A. (1939). *Statistical method from the viewpoint of quality control*. Washington DC: U.S. Department of Agriculture.

Appendix: Additional Resources From Learning Point Associates

Data Primer

www.ncrel.org/datause/primer/

This instructional resource, available online, is designed to help educators become more comfortable with thinking about and using data for the purposes of instructional decision making. It is organized around four practical questions educators can ask when developing school improvement plans. The focus is on No Child Left Behind (NCLB) data, which provide a uniform set of guidelines for schools and districts to follow regarding what data should be used and what data matter. These data serve as a starting point for how to make the connections between NCLB data and additional types of data to reinforce the decision-making process.

Data Exploration: A Journey to Better Teaching and Learning

This 20-minute video depicts two schools using data effectively and describes how and why the staff members find data helpful. The accompanying booklet contains activities that encourage discussion and questions on the topic. Order through the Learning Point Associates Product Catalog (www2.learningpt.org/catalog/cart/item.asp?productID=93) or call 800-252-0283.

Data Retreats

A Data Retreat is a two-day training opportunity in which district and school teams work together to analyze their data, develop hypotheses, and ultimately leave with a meaningful school improvement plan. It provides training that is:

- Relevant, since educators work with their own data.
- Collaborative, since educators work in teams.
- Reflective, since educators have time to study and find insight.

An annual Data Retreat provides continual professional development to education leaders when used as part of the ongoing school improvement cycle. It offers a unique experience based on analyzed data and team dynamics. Additional information on Data Retreats is available online (www.ncrel.org/datause/howto/dataretreats.php) or by calling 800-252-0283.

Surveys of Enacted Curriculum

www.secsupport.org

The Surveys of Enacted Curriculum (SEC) are research-based tools that collect, report, and use data on what content is taught and how it is taught. The tools provide a comparison between what is taught in the classroom and the standards and assessments in mathematics, science, and English language arts. The data are represented in scales and maps that can be used to analyze instruction relative to curriculum, standards, and assessments.

Data Use Web Site

www.ncrel.org/datause/

This Web site presents various resources, tools, and action steps towards using data for school improvement. It is geared for educators and others involved in using data in a classroom, school, or district.