

Using Data as a School Improvement Tool



Congress passed the No Child Left Behind (NCLB) Act as a reauthorization of the Elementary and Secondary Education Act. Signed into law by President Bush in January 2002, the NCLB Act has brought many significant changes to schools nationwide. This Quick Key Action Guide was developed to help educators build capacity to implement the NCLB Act, giving specific attention to how data can be used to improve schools and help all students achieve academic proficiency.

Analyzing and using data are fundamental steps to successful and sustained school improvement.

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“What separates successful schools from those that will not be successful in their reform efforts is the use of one, often neglected, essential element—data.”

—Victoria Bernhardt (2004, back cover)

What Are Data?

Before data can be used to improve decision making, it is important to understand exactly what data are. One common mistake of potential school users of data is making the assumption that only numbers such as test scores or attendance figures can yield useful information. However, data can be defined as any information that when taken together and analyzed can be used to produce knowledge.

Why Use Data?

The risks are great if important school decisions are made based on hunches, intuition, or guesses. Resources can be wasted, energy drained, and meaningful improvement delayed. Real school improvement begins when school leaders use data to address real issues, create realistic goals, and track their progress to support continuous improvement. Data patterns can reveal system weaknesses and provide direction to combat those weaknesses. As the impact of strategies and practices is measured, collaborative and reflective data study allows for a deeper understanding of learning. Ongoing data study and team collaboration efforts perpetuate the school improvement cycle.

To meet the lofty goals of the No Child Left Behind (NCLB) Act, educators must take a comprehensive approach to school improvement—addressing *all* core subjects in *all* grades and examining the role of *all* teachers in supporting the increased achievement of *all* students. No more tinkering around the edges. Using data to make informed decisions and develop strategies for comprehensive school improvement is fundamental to successfully meeting these goals. Too often school improvement efforts take aim at assumed problems, not those that have been identified through a deliberate, data-driven needs assessment.

Consider the following example:

Officials at a school with a high percentage of transient students strongly believed that low student achievement was the direct result of student mobility. They “knew” that achievement would rise dramatically if the students would only remain in their school longer. However, after analyzing school assessment results disaggregated by the number of years students attended, the officials were surprised to find that achievement scores decreased in proportion to the number of years the students attended the school; the more years a student was enrolled, the lower his or her scores were likely to be. Had the school officials focused their improvement efforts on the assumed problem, they would have wasted time and energy better invested elsewhere.

This *Quick Key Action Guide* provides information about the data collection and dissemination requirements of NCLB and then describes a process that school leaders can use to drive decision making that will lead to the development, implementation, and evaluation of school improvement efforts.

Data Collection and Dissemination Requirements of NCLB

NCLB requires the dissemination of annual report cards for states, districts, and schools. These report cards provide a great deal of useful information that schools can use to help them make decisions about school improvement efforts. Each state education agency is required to publish an annual state report card that summarizes information about the performance of its districts and schools. These report cards must include annual statewide assessment and demographic data. In a clear and understandable format, each state must provide the following:

- Information about student achievement on statewide assessments at each performance level in the aggregate and disaggregated by the following categories: race, ethnicity, gender, disability status, migrant status, English proficiency, and status as economically disadvantaged.
- A comparison of the annual achievement targets for the state with the actual performance of students by identified subgroup.
- Percentage of students in each student subgroup that were not tested.
- Two-year trend data on statewide assessments for each subject and grade tested.
- Graduation rates for secondary school students and progress on any other academic indicators the state has identified to assess elementary schools.
- Information about whether districts in the state made adequate yearly progress and the number and name of schools identified for improvement.
- Percentage of classroom teachers statewide with emergency or provisional credentials.
- Percentage of classes statewide not taught by a “highly qualified teacher” both in the aggregate and disaggregated by high-poverty and low-poverty status.

In addition to the data on the state report card, district report cards must include information about how its students performed on state assessments as compared to the state as a whole. District report cards also must include the number and percentage of schools within the district identified as in need of improvement and the number of years these schools have been identified as such. School report cards also must identify whether the school has been identified for improvement and compare achievement of the students at the school with the achievement of students throughout the district and with the state as a whole.

The NCLB Act requires states, districts, and schools to look at statewide assessment data in new ways by disaggregating their data by student subgroups. Traditionally, schools and districts have tracked the average performance of students in a class or in a school. Reporting the average, of course, disguises both high and low scores behind a single number. At the same time, research has revealed a persistent achievement gap between the performance of different groups of students, most notably between that of white students and those of ethnic minorities and between middle-class students and those who are poor. By requiring that both the average performance (the “all students” category) and the performance of members of identified subgroups be reported, the NCLB Act ensures that these gaps will be noted and addressed.

The Process: Data ⇨ School Improvement

The following process for data-driven decision making helps educators focus on essential pieces of information, identify priority areas, select realistic goals, and move to action. This is a continuous cycle of school improvement that will allow school leaders to define the problem and the goals, to develop hypotheses, to select and implement strategies, and to evaluate the attainment of those goals. This evaluation information will then feed back into the beginning of the next cycle. Engaging in this data-driven decision-making process will build the capacity of educators to analyze data and to use those data to inform their instruction. Furthermore, this data-driven decision-making process will help school leaders target resources and professional development programs in order to support the goals that are identified during the process. By building capacity and carefully targeting interventions, school leaders can follow eight steps to drive a process of continual school improvement.

The process described in this booklet contains the following steps:

1. Develop a leadership team.
2. Collect and organize several types of data.
3. Analyze data patterns.
4. Generate hypotheses.
5. Develop goal-setting guidelines.
6. Design specific strategies for the action plan.
7. Plan the evaluation.
8. Implement the plan.

Develop a Leadership Team

This leadership team may be formed at the state, district, or school level, but most of the discussion in this booklet will be focused on processes that are conducted at the school or district level. The process begins with promoting a data culture in the school or district and forming a broad-based team of educators that will examine the data.

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 a 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 school or district. 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 12 or fewer people are most effective.

Collect and Organize Several Types of Data. During this stage of the process, the team identifies the relevant data, gathers them together, and organizes them for analysis. Identifying specific data and collecting them 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 achievement data, demographic data, program data, and perception data.

Achievement Data

Student achievement data are the most important type of data to analyze. Educators should understand that achievement data come in forms other than standardized test data. It is best to collect student achievement data longitudinally during at least a three- to five-year period so that trends can be viewed and predictions made. The team can learn a great deal from examining and comparing trends over multiple years of data. This look at trends can help school leaders identify performance patterns that might be the result of inadequate instructional materials, problems at a specific grade level, or other areas for school improvement.

A comprehensive assessment plan can incorporate data from at least three categories: annual, large-scale assessment data; periodic assessment data; and ongoing classroom assessment data. Teams should consider the following guiding questions related to achievement data:

- What evidence can we collect on a regular basis 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?

Annual, large-scale assessment data are designed primarily for accountability purposes—to report to external members of the school community a broad view of the district's achievement levels. Much of this information can be gathered from state, district, and school report cards that are required under NCLB. These 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. Although these assessments can provide valuable information about the district's general success, they are not helpful when evaluating individual or classroom-level student progress, and they do not provide useful data on an ongoing basis throughout the school year.

Periodic assessment data provide timely assessments of student performance on key standards-based skills in a content area and grade level throughout the school year. Periodic assessments can be used by teachers and administrators to establish the entrance-level performance of students when the school year begins. By continuing to use these assessments throughout the year, teachers and administrators can track student progress and strengths and weaknesses in particular content areas. These types of assessments can be used to differentiate instruction for groupings of students based on their changing skill needs and to identify which students need enrichment or special assistance during the school year. These assessments, if designed well, may become embedded within instruction to help teachers adapt their instruction to meet the needs of the students in their classroom.

Ongoing classroom assessment data provide teachers with a wealth of information about the academic progress of the students in their classrooms. These assessments, which may be formal or informal, are designed to help the teacher assess each student's conceptual understanding, knowledge, and skills. Educators must challenge themselves to lay out the data from daily assessments in a way that show clearly who is excelling and who needs enrichment, who is performing on target and who needs help. Then the challenge is to find a way to provide that help.

Districts and states can assist educators with data analyses by developing real-time data systems. States and districts are increasingly realizing that providing teachers with immediate access to data can help them manage their classrooms more effectively. The ability to easily access attendance records, disciplinary reports, assessment results, and student work examples can provide teachers with the information they need to make timely and thoughtful decisions for individual students. These systems also can provide teachers with access to tools that allow them to identify trends, disaggregate achievement results, diagnose individual student needs, and compare multiple data points such as classroom assignments, test results, and project completion by content-area standards. With these tools, teachers also can conduct item analyses of periodic assessments in order to verify the degree to which students have mastered specific skills and to determine appropriate remediation strategies. In addition, these data systems will provide a record of student performance that can be maintained throughout a student's academic career and is accessible to all of that student's teachers. These records may also include data on the learning strengths and preferences of the student that can help future teachers refine and target their instruction.

Demographic Data

Demographic data are the second type of data to collect and evaluate. When determining which demographic data to collect, the goal is to thoroughly understand the school population in order to clarify problems and needs. Teams should consider the following guiding questions about 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?

Static data may be collected on each student's gender, ethnicity, or economic status. Dynamic behavioral data such as student attendance or school suspensions may also be collected. It is best to collect student data longitudinally over a three- to five-year period so that trends can be viewed and predictions made. Data should be collected that show the following:

- Demographic information on the students who are enrolled in the school or district.
- Mobility patterns in and out of grades and schools.
- Daily / weekly attendance rates.
- Student transportation needs.
- Rates of enrollment in special programs such as English as a second language, special education, or afterschool programs.
- Neighborhood characteristics.
- Parent involvement.
- Behavior and social problems of students.

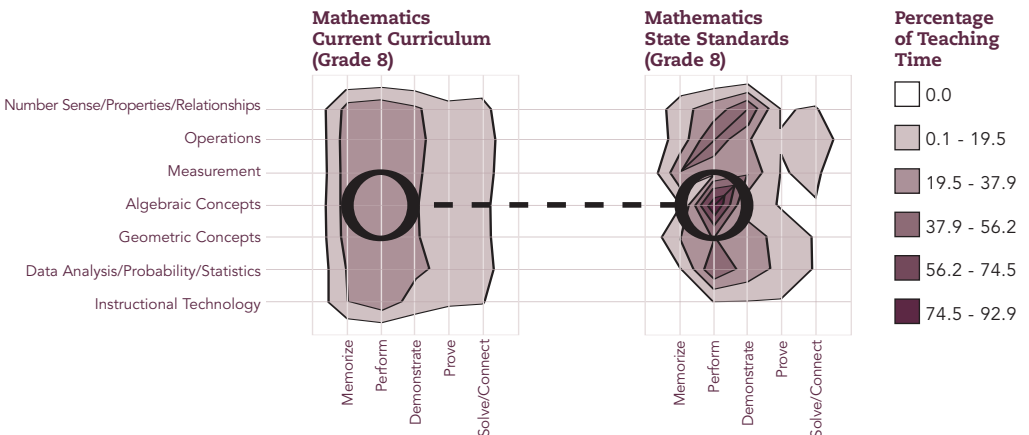
Program Data

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. Programs can include a wide variety of offerings, from specially funded programs to academic curricular sequences to extracurricular programs. These data are not always readily quantifiable but may be important information that can support a hypothesis. Time should be taken with leadership team members 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. Teams should consider the following guiding question about program data:

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

Program data that are examined by the team should include an analysis of the alignment between the curriculum of the school and the state standards. Data that reveal the differences or similarities between the written, the taught, and the tested curriculum can provide startling insights into student achievement. Misalignment between written curriculum and what is actually taught in classrooms or tested on state assessments can contribute significantly to faltering student achievement. In the example illustrated in Figure 1, educators know that their district’s eighth-grade mathematics curriculum prescribes that an identical amount of instructional time be devoted to seven component areas. However, using the *Surveys of Enacted Curriculum* data tool (see Key Resources From Learning Point Associates), this school staff finds that state standards require eighth-grade students to demonstrate a much stronger understanding of algebraic concepts than of measurement or instructional technology. The implications for instruction are clear, and teachers can adapt their instruction accordingly.

Figure 1. Surveys of Enacted Curriculum



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 different members of the school community and realize that how they value the school's services impacts students profoundly. Surveying educators, parents, students, and community members about their perceptions of the school's strengths and areas needing improvement can provide administrators with valuable insight into their schools. If school community data are not readily available, the team should plan to collect perception data in their areas of need. Teams should consider the following guiding questions about perception data:

- How do the members of our school community feel about our school and district?
- How satisfied are school community members with 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?

Analyze Data Patterns

After collecting and organizing the data, the team reviews the data and looks for important patterns. Clear patterns often emerge when achievement, demographic, program, and perception data are analyzed together. Teams should consider the following guiding question during this stage:

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

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 never would have made on their own.

After the team has analyzed the school or district 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, the team must summarize observed strengths and then summarize and rank observed problems across all data. These patterns help to identify specific programs or student groups most in need of improvement and what types of improvement plans and strategies may be most effective.

Generate Hypotheses

Based on the patterns that the team identified in the data, the team generates hypotheses to explain the underlying causes of areas needing improvement. Teams should consider the following guiding questions during this stage:

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

The team should formulate questions in response to the data (e.g., why are our eighth-grade students meeting the standards in mathematics but not in language arts?) and then consider a number of different responses to these questions. These explanations are called *hypotheses*. The goal of this process is to get closer to the root causes of the identified problem. The posing of hypotheses can be encouraged and recorded during the data-analysis phase, but also should receive special attention after the data patterns are sorted. The team should develop a number of hypotheses, record them on a chart, and then label each as “accepted” or “rejected” after team discussion. The identification of the root causes of the problem at this stage will help the team to identify appropriate interventions. It is important that the team substantiate the problem with the correct and most accurate data. Often for teams just beginning to engage in these efforts, it is helpful to have an objective review by a qualified professional—either internal or external.

Develop Goal-Setting Guidelines

After data patterns have been analyzed, problem areas prioritized, and hypotheses generated, the team is ready to develop goals for improvement. The team should work both on long-term goals and short-term goals. Teams should consider the following guiding question during this stage:

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

The first step is to focus on the most urgent problem and its hypothesis. The team should consider the outcome that should be expected for students after five years and then work backward to benchmark a series of one-year goals that will lead to the attainment of the five-year goal. As the team sets these benchmark goals, it should consider the capacity of the staff, barriers that might exist, and the level of commitment and resources that will be necessary to achieve this outcome. The focus during this discussion should be on the goals and not on the specific strategies that will be implemented.

Drafting successful goals can be a challenge if the team members have many different ideas on how to improve the school or district, but the hypotheses that were developed and the following characteristics of well-written goals should help to focus the group discussion:

- **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.** Goals should be ones that can be achieved. Avoid unrealistic goals and aim for tangible, realistic goals that cause stretching but are attainable.

After the team has developed a goal statement for the school or district’s most urgent problem, the team should move on to the next problem statement until a focused set of three to five goals has been articulated.

The following are examples of well-written goal statements:

- Improve the mathematics performance of students in Grades 6, 7, and 8 so that at least 65 percent of all 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.
- 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.
- Improve student attendance so that 99 percent of students attend school on 99 percent of school days.
- Improve the science performance of students in 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.

Design Specific Strategies for the Action Plan

Based on the goals that were developed, the team will select strategies to help the school or district reach the goals. Teams should consider the following guiding question during this stage:

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

Goals are meaningless unless action backs up the commitment. This part of the improvement-planning process moves forward the primary hypothesis set forth by the team. Time must be allowed to do a careful, thorough job when designing these strategies. During this stage, team members should build on the hypothesis that was developed and selected as the priority as they brainstorm a number of different actions that will help the school or district achieve its improvement goals.

When selecting specific strategies, the team should consider whether each strategy is as follows:

- 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 the team is clear about the problem but uncertain about strategies, the most important action to propose is to research best practices and scientifically based research. Scientifically based research is one kind of data that can drive instruction. We know that certain instructional techniques work best for specific student groups, and having a repository of “what works” for each grade level, subject area, and student group is a valuable tool. The team also may develop a systematic process to investigate best practices in order to determine what other successful schools have done in response to a similar problem. The caution here is to conduct the research as quickly as possible so that effective strategies can be added to the action plan.

It is important for the team to realize that strategies mean hard work. Strategies are commitments to carry out real action. Therefore, the team should take time to discuss the level of commitment and the necessary work. During this stage, the team also should consider timelines, assigning duties, and how to document progress.

Plan the Evaluation

Based on the goals and strategies that have been developed, the team will determine how to evaluate the effectiveness of the selected school improvement strategies. It is important to clearly define the evaluation criteria before implementation begins. Teams should consider the following guiding questions during this stage:

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

To develop an evaluation plan for specific strategies, team members should lay out the measures that will be used to determine how successful each strategy was. 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 demonstrate success.

Implement the Plan

The final step is ensuring a commitment to implement the school improvement plan. Team members and responsible parties should sign a commitment agreement to work toward fulfilling the selected strategies. Teams also must develop a plan to roll out the action plan to the rest of the staff. The rollout should be designed to do the following:

- **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 ideas. This process helps to build teacher ownership of the action plan.

- **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 kickoff. 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 for all staff in writing (a 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 to a continual school improvement process.

Under NCLB, schools, districts, and states are required to collect more data than they have in the past. This wealth of information provides school leaders with an opportunity to use these data to identify areas needing improvement and to drive a continuous cycle of school improvement in which school leaders define the problem and the goals, develop hypotheses, select and implement strategies, and evaluate the attainment of those goals. Engaging in data-driven decision-making processes will help school leaders target resources and select interventions that will improve the quality of education for all students in the school or district.

Reference

Bernhardt, V. L. (2004). *Data analysis for continuous school improvement* (2nd ed.). Larchmont, NY: Eye on Education.

Key Resources From Learning Point Associates

The Center for Comprehensive School Reform and Improvement

www.centerforsri.org

Funded by the Office of Elementary and Secondary Education of the U.S. Department of Education, The Center exists to assist schools and districts engaged in comprehensive school reform and improvement by providing reliable information about research-based strategies and assistance.

Characteristics of Successful Schools Website

www.ncrel.org/datause/css/

This online survey tool allows for the easy collection and analysis of perception data by gathering responses from educators, parents, students, and community members about their perceptions of a school's strengths and areas needing improvement.

Data Exploration: A Journey to Better Teaching and Learning Video and Booklet

www.ncrel.org/datause/tools/explore.php

This video and booklet package profiles two schools that already operate in a successful data-driven school improvement system. The video highlights sources, analysis strategies, and actions that each school has taken as a result of examining data. Also included is a supplemental activity booklet that extends the utility of the video through activities and practical data resources.

Data Primer Website

www.ncrel.org/datause/dataprimer/

Data Primer is an instructional website designed to help educators become more comfortable with thinking about and using data for the purposes of instructional decision making.

Data Retreat Workshop

learningpt.ncrel.org/page.php?pageID=128

A Data Retreat is a 2½-day workshop that begins with a half-day planning meeting to help leadership teams determine which data to collect and bring to the workshop. The remaining two days are dedicated to analyzing school and district data and establishing focused improvement goals based on evidence uncovered by the data. Following a successful Data Retreat, schools and districts are equipped with a meaningful school improvement plan.

Examining Student Work Workshop

learningpt.ncrel.org/page.php?pageID=119

This two-day workshop provides a protocol-driven approach to professional development that supports increased student learning through collaborative teacher teams. These teams use different models to critically examine student work in specific content areas and plan for changes in curriculum, instruction, and assessment.

Leadership and Improvement Planning Professional Development

www.learningpt.org/page.php?pageID=114

These sessions promote an approach to school improvement planning that result in high-quality, job-embedded professional development with a focus on student achievement.

Surveys of Enacted Curriculum Tools

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 allow education officials to compare what is taught to standards and assessments. The data are represented in scales and maps that can then be used to analyze instruction relative to curriculum, standards, and assessments.

Additional Resources

Indiana Accountability System for Academic Progress

www.doe.state.in.us/asap/welcome.html

This website allows widespread access to basic school information and allows users to make comparisons and view historical trends about education in the state.

Disaggregating Data in Schools: Leveraging the Information You Have

www.apqc.org/portal/apqc/site/store?paf_gear_id=1300011&pageselect=detail&docid=115316

Written by Paige Leavitt, Randy McDaniel, and Emma Skogstad, this book describes data disaggregation, types and sources of data and tests, how to break down data using technology support, how to understand test data, and how data can be used at each level.

Communicating NCLB: A Principal Desktop Guide

www.principals.org/s_nassp/store_interior.asp?TrackID=&SID=1&DID=20012&CID=3&VID=115&RTID=0&CIDQS=&Taxonomy=False&specialSearch=False

This resource from the National Association of Secondary School Principals provides templates for discussion, talking points, and supplemental resources.

PowerSchool

www.apple.com/education/powerschool

PowerSchool is a Web-based student information system that provides real-time information.

What Works Clearinghouse

www.whatworks.ed.gov

The What Works Clearinghouse website was established in 2002 by the U.S. Department of Education's Institute of Education Sciences to provide a central source of scientific evidence of what works in education.

Wisconsin's Information Network for Successful Schools

www.dpi.state.wi.us/sig/index.html

This electronic resource provides users with information about standards and assessment, data analysis, continuous school improvement, and best practices.

Learning Point Associates developed the *Quick Key* series to assist educators, policymakers, and other stakeholders in understanding and implementing the No Child Left Behind Act. The *Quick Keys* are available online (www.ncrel.org/policy/curve/resource.htm#resources).



Look for the previous *Quick Keys*:

Quick Key 10 Action Guide

“Implementing the No Child Left Behind Act:
Using Student Engagement to Improve Adolescent Literacy”



Quick Key 9 Action Guide

“Implementing the No Child Left Behind Act:
Strategies to Improve High Schools”



Quick Key 8 Action Guide

“Implementing the No Child Left Behind Act:
Teacher Quality Improves Student Achievement”



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