

*Guide for
Standard Bearer Schools™*

FOCUSING ON CAUSES TO
IMPROVE STUDENT ACHIEVEMENT

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ABOUT CTAC:

The Community Training and Assistance Center is a national not-for-profit organization with a demonstrated record of success in urban communities. It focuses on developing leadership, planning and managerial expertise within community-based organizations, school systems, collaborative partnerships, state and municipal governments, and health and human service agencies. Since 1979, the Center has provided assistance to hundreds of community-based organizations, coalitions and public institutions in the United States and several other countries.

The Center's staff is comprised of nationally recognized executives, educators, policy makers and organizers who have extensive experience working with city, county and state agencies, educational institutions, federal legislative bodies, not-for-profit organizations, philanthropic institutions and the private sector.

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Credits

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Guide to Standard Bearer Schools authors: Peggine L. Brown
Barbara J. Helms, Ph.D.
William J. Slotnik
Maribeth D. Smith
Lynn Stinnette Barbour

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Guide for Standard Bearer Schools™

The Value of School Improvement Planning

School improvement planning, duly constituted school site councils, and shared decision making have evolved from accepted leadership practices into mandates, not only from districts but also from state and federal agencies. As mandates increase, school plans may become formulaic and compliance-driven in actual practice, or as some have observed, a set of hoops to jump through in order to receive funds, rather than the driving force for school improvement. Also and unfortunately, planning mandates have not always resulted in improved student achievement.

The educational accountability movement has brought to light the scope and character of underachievement in the nation's schools. While most schools and districts have always aimed at adequate yearly progress, the need to be sharper, more skilled, and more inclusive in improvement processes has never been greater. School improvement planning is not old news.

The Community Training and Assistance Center (CTAC), a national not-for-profit organization dedicated to developing leadership, planning, and managerial expertise within school systems and other organizations, believes strongly that quality school improvement planning and implementation is critical to increasing student achievement, and overall school excellence. Successful school plans—ones that get results—are the responsibility of the district as well as each school, but planning requires greater leadership skill and priority than is currently the norm in most schools. Over almost two decades and in response to the need for coordinated district and school improvement planning, CTAC has developed and supported the Standard Bearer Schools improvement model, which builds understanding of how and why planning matters and adds value through the strategic use of achievement data, stakeholder perceptions, and critical thought.

The Value of the Standard Bearer Schools Tools and Process

Standard Bearer Schools participants value “working smarter,” making the time that is already spent on school planning count for better decisions and ultimately higher achievement for all students. Secondly, Standard Bearer Schools promote stakeholder involvement, which increases the number of shareholders involved in school improvement and builds bridges within the school community. The fundamental goals that ground the practices of Standard Bearer Schools are comprised of the following:

Improving academic achievement for all students. Eliminating the achievement gap and fulfilling the potential of young people are key goals of school improvement planning. Until these goals

are fully realized, schools will be in an ongoing improvement mode. A continuously improving school increases the capacity, not only of students, but of teachers, administrators, and parents, to improve achievement. The creator of the Total Quality Management movement in industry contends that continuous improvement of every process, element, and function of an organization not only impacts the quality of results, but the character and quality of the organization.¹ An organization can always improve. “Equity and excellence for all” can be a slogan or it can be a way of life in school. Standard Bearer Schools participants learn to impact student learning through ongoing scrutiny of a range of data about the school and its students.

Bringing formal critical thinking that addresses causation to school improvement. Schools are busy places where everyday routines consume most of the available time. Improvement planning allows the school community to take time out and look in a formal way at the effectiveness of the school and the achievement of its students. Standard Bearer Schools participants use an array of student data and other evidence together with creative and critical thinking strategies in order to identify issues and priorities for improvement. These tools promote careful analysis of achievement data and perceptual data as a means of identifying root causes of underachievement in the school. Some of the problems and issues facing school leaders and planners are not amenable to easy or quick fixes. For the same reasons that teachers formalize the teaching of critical or rational thought processes to students, school planning teams require formal inquiry processes in order to address some of the thorniest issues of learning. Piecemeal improvement, which characterizes many compliance-based planning processes and is often so unsatisfactory, becomes an anathema to schools that engage in the Standard Bearer Schools process.

Involving students, parents, and the community in improving learning. It is a legal mandate to select student and parent representation to the school council in most states, as well as in schools receiving federal funds. Those in Standard Bearer Schools welcome the voices of students, parents, and other community members whose thoughts and opinions provide powerful explanatory data about learning in the school. Students and parents, in particular, see the school from different perspectives and through different lenses. Creating additional and consistent avenues for extended stakeholder input, such as conducting an annual organizational assessment, is a critical feature of Standard Bearer Schools. Greater participation in school improvement decisions leads to greater accountability for and shared commitment to the community’s youth.

Maintaining accountability for educational excellence at the school level. When schools go through the motions of school planning in order to comply with regulations, the community may find

that they have inadvertently turned responsibility for their young people over to district, state, and federal agencies. School communities want to be accountable for the achievement of their students and for adequate yearly progress toward eliminating the achievement gap and improving achievement for all students. School-planning is the key to making critical decisions at the school level. The quality of district decisions also improves as its schools make evidence-based improvement decisions. District administrators are able to (1) identify and address recurring issues and impediments across schools; (2) recognize those issues that may be caused by elements of the organization itself; and (3) plan and administer resource allocation in a manner that best addresses the needs of students. Standard Bearer Schools and districts find the process empowering and respectful of their knowledge and capacity to improve.

The core of planning in the Standard Bearer Schools model is grounded in a ten-step process that guides school planning teams through a review of a range of data available in schools with an emphasis on root cause analysis. Working systematically with evidence brings science to the art of teaching. Treating causes rather than symptoms is a professional behavior we expect of our doctors. So, too, do Standard Bearer Schools participants become accountable for taking actions based on evidence.

Purpose and Use of the *Guide for Standard Bearer Schools*

Under the No Child Left Behind Act (NCLB), many states and districts have improved their student assessment and accountability systems and are providing better progress reports to educators and parents. Some districts have added professional development for data-driven decisions in schools and classrooms. However, as noted by a California superintendent, “Data are useless without a planned response.” The Standard Bearer Schools tools and processes help participants take the next steps to a planned response through the use of multiple sources and types of data, including organizational assessments, and the application of formal critical thought to root cause analysis and decision making.

This guide, which explains the tools and processes, is intended for use in participant schools as a companion document to professional development sessions and by planning teams as a roadmap leading to annual improvement plans. The effectiveness of the Standard Bearer Schools tools and processes are based on several assumptions that CTAC holds about data-driven decision making in the schools:

*Data are useless
without a planned response.*

The district is a partner with each of its schools in the planning process. Among the roles of the district is one of providing schools with a clear vision of student expectations and with achievement data that are received in a timely manner and in a format accessible to all stakeholders. Many districts have moved forward in the arena of data collection and display and are providing schools with an annual data package or web access to data. Given the improving technologies and the drive in most states to provide individual student identifiers, achievement and other student information systems may become friendlier to users in the future. In the meantime, CTAC works with the district department to develop accessible displays of data.

Good decisions are based on multiple measures of achievement and a variety of types of data. Besides the state assessment data, which is summative in nature, schools should have formative assessment data—data that are collected at several points during the year to measure student progress and perhaps provide a diagnostic for mid-course corrections. Also, different types of data—qualitative as well as quantitative—increase the potential for high quality analyses and better understanding. Standard Bearer Schools use the *Organizational Assessment Survey*® (OAS) to collect and analyze the perceptions of students, parents, teachers, and administrators about a range of elements related to effective schools.

School planning teams should address the root causes of underachievement, not merely the symptoms, and in order to identify root causes, teams will need to formalize their thinking processes. To facilitate rational thinking and problem solving, Standard Bearer Schools participants draw from a toolbox of widely used methods for root cause analysis. These include strategies drawn from several sources that are used by business and industry to look for root causes of variation or deviation in outputs. A few examples of strategies that Standard Bearer Schools participants have found helpful are included in the next section.

There are three sections to this guide: (1) a description of the data analysis tools developed by CTAC for use in the planning process; (2) an explanation of the Ten-Step Process practiced by Standard Bearer Schools; and (3) a brief compendium of support materials, such as roles and responsibilities, parent involvement, professional development, and a glossary, included to assist the range of persons who may need to refer to this guide, including school and district administrators, teachers, students, parents, and community members.

SECTION I

A Description of Data Analysis Tools for Standard Bearer Schools

The planning process used by Standard Bearer Schools relies on several tools that participants learn to use effectively and come to appreciate: the Comprehensive Data Analysis (CDA); the *Organizational Assessment Survey*; the School Profile; and Root Cause Analysis.

Comprehensive Data Analysis (CDA)

The results of end-of-year, state-administered assessments usually become available late in the spring or during the summer. Thus, for most school principals and teachers who end one school year and start a new one during these months, the time to begin the serious review of the previous year's results with the faculty and community is late August or early September. Data reports on state and district websites frequently are not displayed in an accessible manner and require a principal or someone else in the school to reshape them at a very busy time. In savvy districts, there will be a user-friendly student achievement package, purchased or developed by the district, ready for each school prior to the opening of school.

Addressing school planning through the Ten-Step Process is based on the assumption that school planning teams are provided with this full package of achievement data early in the school year. If this is not the

case—the district does not provide data reports to the schools—then the principal or a designated person in the school should have high quality training and the software required to produce reports or profiles. The Community Training and Assistance Center provides technical support to districts that are working on improving data services to schools.

The Comprehensive Data Analysis (CDA) package recommended by CTAC includes, in graphic representation: the spring state assessment, in the aggregate by grade level and disaggregated by socioeconomic status, ethnicity, English language proficiency, and disabilities—the categories in which the district and school are mandated to make adequate yearly progress—but also any other areas that schools and districts know to be litmus tests of effectiveness. It is desirable (for greater statistical credibility) to have standardized achievement test data (e.g., ITBS, CAT, SAT10) as well as standards-based performance assessment data (i.e., state-mandated assessments) for each student. These data should also be compared within the district and state context so that a school can see, for example, how their tenth graders performed compared to other tenth graders in the district and state. It is also helpful to see the new data compared to at least the two prior years' data, so that achievement trends can be identified and monitored.

A good CDA package from the district will also include all benchmark or formative assessments from the previous year and any other *consistently administered* achievement data that should be considered, such as the SAT, ACT, and Advanced Placement summaries that usually also become available in this window. Multiple measures increase the accuracy and reliability of data analyses, but classroom assessments that are not consistently administered (same date, amount of time, and testing conditions) should be used cautiously in the analysis.

Where individual student and teacher identifiers are available in the data system, the CDA package can and should include comparisons of

individual student growth over time and may include teacher performance. Measurements of individual student growth render a clearer picture of the school's role in achievement by diminishing the effects of student mobility.

Examples of several CDA graphs and charts are provided in Section 2 where the planning process is explained. There are many other options and uses for these charts, some of which are demonstrated in another CTAC publication, *Informed Decision-Making: An Introduction to Student Achievement and Teacher Data Comparisons* (May 2000).²

Organizational Assessment Survey (OAS)

Educators, parents, and children know that the conditions at their schools affect how much learning takes place. Educational research also shows that school and classroom conditions are powerful players in achievement, and they are the conditions over which the school has the most control and capacity to change—as opposed to home conditions, for example. Organizational assessment is a means for identifying and addressing conditions at each school in the district. Starting with a targeted survey of teachers, administrators, students, and parents, a picture of the conditions of the school in nine areas known to impact school quality and student achievement is developed.

The OAS, as developed by the Community Training and Assistance Center, allows Standard Bearer Schools participants and school district administrators to identify a school's core conditions, as seen through the eyes of its constituents, and then to use the input to contribute to analyses of the causes of underperformance. The nine areas assessed by the OAS include:

- climate
- school planning
- teacher quality and evaluation
- curriculum and instruction
- assessment and accountability
- principal effectiveness and support

- parent involvement
- student involvement
- district office support

Survey results can be analyzed by school planning teams and faculties to address perceptions about the effectiveness of the school. As planning teams are seeking to identify root cause, the OAS data provide clues of places to look. An annual collection of these data, usually in the spring, also provides the school with a means of increasing the amount and impact of stakeholder involvement, and a way to document improvements in the perceptions of stakeholders about the effectiveness of the school as planners address areas of concern.

A strength of the OAS is that it is school-based—both the administration of the survey and the survey respondents. With a school-based effort, participation increases and schools feel more confidence in the quality of the information collected. An important spring or end-of-school-year activity in Standard Bearer Schools is that of distributing and collecting the survey forms at the school level. Surveys are often not returned unless respondents understand the purpose and receive feedback about the results. Teachers and administrators as well as other school staff are usually convinced of the survey's usefulness after the first administration and return of results, but it is important to find the best mode within the school to distribute and collect the forms, which are confidential, but nevertheless, need to be returned in a timely manner to the designee who sends them to a scanning agency. Usually, a faculty meeting where about thirty minutes can be given to completing the form is the preferred choice.

Students are best reached in classes, where willing teachers provide time and directions on completing the survey. Parent and/or caretaker distribution should be based on the strategies that are the most successful to reach a diversity of parents in the school community. For many schools, it is a random mail-out with a principal letter explaining the purpose and importance

of the survey to school improvement and giving instructions for returning the survey. While schools should aim for 100 percent response from staff, the large numbers of students and parents mean that a lower percentage return may constitute a reliable sample. However, aiming for 100 percent of the parents to complete a survey is a way of having 100 percent participation. The district evaluation and research department can help a school set targets for these groups based on the size of the school and parent population. CTAC recommends no less than a 30 percent response from parents and/or caretakers and students grade six or higher.

In the Ten-Step Process, explained in the next section, data from the organizational assessment are used as the major qualitative tool for probing behind the student achievement data for possible explanations and ultimately root causes. Organizational assessment data grounds school improvement efforts in the realities of each school. With this foundation, schools have the knowledge and constituency to improve the conditions of the school that impact student learning.

The School Profile

When the CDA, the OAS results, and the school and district demographic data are compiled into a school package, they are usually referred to as the School Profile in Standard Bearer Schools. Schools and districts are involved in deciding what other data may be included in this package that will be used by school planning teams. Clearly, the objective is to provide the planning team with an adequate and full picture without compromising student confidentiality.

Root Cause Analysis

How do planners get from data collection and examination to root cause? In the context of school improvement, causation is a term not used in the way a physicist might use it. Cause here refers to the same meaning that each of us use in our daily lives to solve ordinary problems—the

toilets are backed up, the air conditioner is not cooling, the car won't start—why? It matters that the plumber can determine whether there is a tea towel in the household plumbing or a tree root in the exterior plumbing. Trial and error may eventually find causes of problems like these, but student performance is more abstract, with many more variables to probe, and of course, trial and error is rarely a desirable strategy to use on students.

What strategies are useful in probing for root cause(s)? Other organizations facing performance issues and the need to solve performance problems with rational and creative processes often turn to the continuous improvement or Total Quality Management (TQM) tools. Several TQM tools that are useful to school planners include: the 5 Why's, Cause and Effect or Fishbone Diagram, and Flow Charts. In situations where there is emotional content to discuss, Edward DeBono's "Six Thinking Hats" may be the best initial strategy. There is a large body of methods that organizations use in their improvement processes, which can be found online.³

Standard Bearer Schools participants learn to select from a range of proven strategies in order to probe for root cause. The ones included here as examples are some that CTAC technical assistance providers and school planning teams have found helpful in working through the issue of causation. These methods are demonstrated in the narrative of the Ten-Step Process but are briefly explained here as well.

Example: Five Why's

The Five Why's typically refers to the practice of asking, five times, why failure has occurred in order to get to the root cause/causes of the problem. No special technique is required except for open discourse and the willingness to research if necessary. There can be more than one cause to a problem as well. An example of the Five Why's can be found in Figure 1 and in Step Four of the Ten-Step Process.

Fig.1 Problem or Effect: The Washington Monument was disintegrating.

Why is the Washington Monument disintegrating?
Use of harsh chemicals.
Why are the chemicals used?
To clean pigeon droppings.
Why so many pigeons?
They eat spiders, and there are a lot of spiders at the monument.
Why so many spiders?
They eat gnats, and there are lots of gnats at the monument.
Why so many gnats?
They are attracted to the light at dusk.
Solution
Turn on the lights at a later time.
Had the problem-solving team stopped at the first "why," they might have sought milder chemicals with which to clean the monument, but the root cause of the problem would have persisted.

Example: Cause-Effect or Fishbone Diagram

The cause and effect or fishbone diagram analysis was developed by Kaoru Ishikawa, the father of quality management processes in the Kawasaki shipyards. The cause and effect diagram is used to explore all the potential or real causes (or inputs) that result in a single effect (or output). Causes are arranged according to their level of importance or detail, resulting in a depiction of relationships and hierarchy of events.

Causes listed in a cause-effect diagram are frequently arranged into four major categories. While these categories can be anything suggested

by the data, in schools, the following list shows some typical categories:

- Teacher and other staff (qualifications, experience, professional and collegial development);
- Curriculum, teaching practices or methods, teaching materials (appropriateness, consistent use of, alignment, adequacy);
- School schedule (length of day, length of periods, after-school times, student activities);
- Student characteristics (age, gender, reading level, ethnicity, English language proficiency).

The categories provided here are meant to be helpful, but should not be used to limit the diagram, or used if they are not suggested by the examination of data. The categories the planning team uses should emerge from the data and/or be revised if the analysis stalls.

The cause and effect diagram is also known as the fishbone diagram because it is drawn to resemble the skeleton of a fish, with the main causal categories drawn as “bones” attached to the spine of the fish. The effect or output or problem that is being examined should be written at the end of the arrow. An example of a fishbone is included in Step Four of the Ten-Step Process.

To build a cause and effect diagram:

- Be sure everyone agrees on the effect or problem statement before beginning. Be succinct, placing the effect at the end of the arrow or the head of the fish.
- For each node, think what could be its causes. Add them to the diagram.
- Pursue each line of causality back to its root cause.
- Consider which root causes are most likely to merit further investigation.

Example: Flowchart

Flowcharts are maps or graphical representations of a process. Steps in the process are shown with symbolic shapes, and the flow of the process is indicated with arrows connecting the symbols. In quality improvement work, flowcharts are particularly useful for displaying how a process currently functions and/or could ideally function. Flowcharts can help planning teams see the logic of the steps of a process; uncover problems, miscommunications, or gaps; define the boundaries of a process; and develop a common base of knowledge about a process. Flowcharting a process often brings to light redundancies, delays, dead ends, and indirect paths that would otherwise remain unnoticed or ignored. Accuracy is important when charting processes.

Although there are many symbols (e.g., oval, rectangle, diamond, delay, cloud) that can be used in flowcharts to represent different kinds of steps, accurate flowcharts can be created using very few. The trouble spots in a process usually begin to appear as a team constructs a detailed flowchart.

To construct a flowchart:

- Define the process boundaries with starting and ending points.
- Complete the big picture before filling in the details.
- Clearly define each step in the process. Be accurate and honest.
- Identify time lags and steps that do not add value.
- Circulate the flowchart to other people involved in the process to get their comments.

Schools may find that it is helpful to flowchart such processes as the opening of school, the student registration and/or course selection process in secondary schools, and/or the building

of the annual master schedule. Also, the school planning process can be shown in a flow chart.

The Comprehensive Data Analysis and the Organizational Assessment Survey, which make up

the School Profile, and the Root Cause Analysis are the critical tools designed by CTAC for use in the Ten-Step School Planning Process.

III

SECTION

An Explanation of the Ten-Step Process

When school data are available, the team is selected, and the meeting schedule is established, it is time to begin the ten-step process for school planning. Why ten steps? The process can be divided into fewer steps, but as good teachers know, when mastering a new process, it is often better to break it into several smaller steps. Ten steps also are the most manageable within the span of the academic year and within the small blocks of planning time available in most schools. The steps, which are explained in greater detail in this section of the guide, are summarized with descriptors in Figure 2. The descriptors attending each step identify typical actions that take place during that step. They are not intended for use as a checklist but rather as a heuristic or prompt to assist the planning team in being thorough. The column on the right is provided to develop a timeline for the year. Two dates define the beginning and end of the planning timeline: the date when annual assessment data are available in usable formats and the date when the school plan is due to be completed, which is usually established by the district.

School planning is a cyclical process rather than a linear one, as the following list of steps may suggest. It is also the case that the process is *recursive* so that the planning team may return to an earlier step for clarification, focus, or redirection. It is the recursive nature of school planning that allows schools to “get it right,” to make mid-course corrections as needed. Still another aspect of school planning is that the school team is implementing one plan while creating

Fig. 2 Standard Bearer Schools Ten-Step Process and Descriptors

Step One: Set and assess standards.	Date
<ul style="list-style-type: none"> • Unpack (break into components) the standards and grade level expectations to understand what is expected of students; look at examples of student work that meets the standards. • Review the alignment of standards with the assessments in use. • Assess the degree and quality of standards implementation at all grade levels/classes. • Revise, as needed, the alignment among standards, materials, teaching practices, and assessments. 	
Step Two: Examine and analyze data.	
<ul style="list-style-type: none"> • Disaggregate the annual achievement data by income, ethnicity, program, gender, grade level, language proficiency, teacher and other demographic or program categories that may help explain achievement outcomes. • Look for patterns in the data at the school, grade, and student level. Look at the clusters or subtopics in the assessment for greater specificity. • Look at other assessments of the same students for parallel findings. • Look at other data, including but not limited to perceptual data, behavioral data, school program and process data. • Use tests of statistical significance to determine if differences matter.* 	
Step Three: Identify critical issues.	
<ul style="list-style-type: none"> • Determine through data analysis and then select those areas where significant groups of students are achieving below standard and/or that show student achievement is flat or has declined over time. • Record issues that emerge from observable patterns in the data. • Look for similar trends in multiple years of data. • Compare with state and district averages and demographically similar schools. • Identify areas of growth and/or strength in student achievement patterns. • Look for relationships among or between critical issues and events (e.g., math scores are down; a new text-book was implemented during the previous year). 	
Step Four: Probe for causation.	
<ul style="list-style-type: none"> • Continue to ask questions about observable patterns in the data and about the character of the data. • Develop hypotheses about the possible reasons for the observed patterns and trends. • Use perceptual, program, and teacher data to test hypotheses and to probe for possible causes. • Collect additional data and input if needed (e.g., conducting interviews or focus groups with students, parents, and/or teachers on a topic). 	
Step Five: Determine priorities for improvement.	
<ul style="list-style-type: none"> • Determine what the school can change (programs, processes, professional knowledge and skills); what it may influence (behavior, parent involvement, communication); and where it may need to intervene (pre-school, tutorials, parent visits, etc.). • Select a manageable number of priorities as the focus of school improvement. 	

* Caution should be exercised, however, when making decisions based on small numbers of students.

Fig. 2 Standard Bearer Schools Ten-Step Process and Descriptors (continued)

Step Six: Develop strategies.	Date
<ul style="list-style-type: none"> • Search for potential strategies to address the priority improvement areas. • Use educational research findings or best practices as a decision-making tool when selecting and developing strategies. • Plan strategies to address the priority improvement areas. • Determine when professional development is the strategy itself and when it is a support for the implementation of another strategy. • Consider conducting small action research projects to test out strategies before deciding on full implementation. • Consider how you will know that a strategy is producing the desired result. 	
Step Seven: Review the current school plan.	
<ul style="list-style-type: none"> • Involve all stakeholders. • Communicate with stakeholders about the planning process and opportunities for input. • Evaluate the progress on previous improvement plan activities. • Consider how the new priorities fit into the current plan. • Ascertain that the budget will support the improvement priorities. 	
Step Eight: Revise the school plan.	
<ul style="list-style-type: none"> • Draft a proposal for the revision of the school plan that includes the rationale for any change and the impact on resources (staff and funds). • Include a description of the rationale for implementing a new strategy, the expected results, and the planned evaluation of the effectiveness of the strategy. 	
Step Nine: Share decisions and revise as needed.	
<ul style="list-style-type: none"> • Share the key elements and actions of the draft plan and solicit input from the stakeholders. • Ascertain from the process any implementation needs of staff members. • Agree on implementation activities, dates, and timelines for completion. 	
Step Ten: Implement the new school plan.	
<ul style="list-style-type: none"> • Begin the new school term with a review of the plan priorities and strategies. • Designate plan monitors to help the school stay on task, provide updates, and celebrate milestones. • Review the new achievement data from the spring assessment and begin the process again. 	

a new one. Thus, planning and implementing become overlapping cycles that touch at several points. Accordingly, by Step Seven of the Ten-Step Process, the current year's plan is a prominent

player in the new planning cycle for next year's plan. The current year's plan should, however, be in evidence throughout the early stages of the process and be monitored for progress.

Prerequisites for Leaders of School Improvement Teams

The skill and knowledge of the team leader(s) are important throughout the planning cycle, but the leader who gives preliminary thought to how best to present the array of school data to team members as well as school and community members and how to organize meetings so that they are purposeful and respectful of team member time and expertise will save time overall and elicit a more considered response from the planning team. Some data and meeting essentials are included here.

First of all, the team leader should know the character of the school's data, as well as its uses, strengths, and limitations, and then consider the best method of presentation to the planning team. Examining and analyzing data for school improvement does not require expertise in statistics, but the planning team will benefit from some general principles about the data that they are reviewing. For a first look at data, graphical representations are especially beneficial, as patterns and comparisons are more visible and easier to follow than tables of numbers and percentages.

Before deciding to use any type of data, the team leader should determine the reliability of the data for planning. For example, are data based on consistently administered assessments or on regular observations? Databases that are small or incomplete may be misleading or may lead to identification of students whose privacy should be protected. Are the data accurate? Data with errors that must be retracted lead to a distrust of the source, so it is important to check numbers and accuracy prior to distributing data to team members. Is there an over-reliance on a single data source? The use of multiple measures, more than any other factor, strengthens reliability and accuracy of root cause analysis.

It is the recursive nature of school planning that allows schools to "get it right," to make mid-course corrections.

Other data analysis essentials for planning teams are listed below; the team leader may want to add other information or clues to understanding the school's databases.

- *Examine several types of data, most of which can be categorized as quantitative or qualitative. Quantitative data* include state assessment results, formative or benchmark assessments, diagnostic data, and interim and end-of-unit tests for each grade level and subject area assessed. *Qualitative data* are those collected systematically through interviews, surveys, and class observations to determine the effectiveness of the school processes. The OAS, the assessment tool used in the Standard Bearer Schools process to examine stakeholder perceptions about the conditions of the school, provides qualitative data.
- *Use other available data in order to get a sound grasp of the school's strengths and weaknesses or to look for potential causes of underperformance.* Sources may include: *behavioral data* (e.g., attendance, disruption, suspension, and expulsion data); *observational data* from systematically-collected classroom observations of students; *participation rates* in extracurricular activities or advanced placement classes, for example; and data that show patterns and characteristics of class failure or retention, mobility, and drop-outs.
- *Review program data if students in special programs have markers in the data system and it is possible to disaggregate by program.* Programs include: comprehensive schoolwide reform design; a particular reading, writing, or mathematics initiative; a computer-based program; and supplemental after-school programs. Each program or initiative that a school adopts absorbs resources—human and fiscal—and

should be assessed for its effectiveness on a regular basis.

- *Examine a variety of achievement data, based on multiple measures of student performance, both summative and formative.* Summative achievement data, usually from the spring state assessment, are always the starting point for the new planning year, but they should be augmented, where possible, by formative assessment data, such as benchmark assessments. Data from teacher and administrator observations or artifact data in the form of student work products also yield important academic achievement information—but only if they are collected in a consistent and rigorous manner.
- *Disaggregate student achievement data by the following demographic factors: income, race/ethnicity, gender and English language proficiency.* Other factors that may provide useful information include the length of time the student has attended the school and the teachers who have taught the student. When examining organizational data, disaggregating the data by respondent or role (e.g., teacher, administrator, student, and parent), race/ethnicity, length of tenure in the school, and years in the profession can provide important perspectives on school effectiveness. Looking at assessment data only in the aggregate can be misleading.

Secondly, the team leader will want to frontload the improvement planning meetings for success. There are many resources in bookstores and online for those who are leading task-oriented groups.⁴ Frequently, principals choose to lead the school site council meetings, but technically, any willing and able member of the team may do so. Most leaders find it worthwhile to think ahead so that meeting time is well used. The following suggestions are

Developing a willingness to review, rethink, and self-correct is sign of strength in a planning team.

intended to promote effective meetings.

- *Form a work group that is identified by name (e.g., leadership team, school council, planning committee) and particularly, that is representative of all stakeholders: administrators, teachers, students, parents, and community members.* Everyone in the school community should know and recognize planning team members. Planning team members should be cognizant of their responsibility to report to their membership group.
- *Establish regular meetings and work sessions on the school calendar for the full year; discuss the calendar at the first meeting so that any major conflicts can be ironed out.* Meetings should coordinate with the ten-step timeline to complete the steps of the planning process.
- *Set a meeting time that accommodates the greatest number of team members.* After-school meetings are good for teacher and student members but often difficult for parent and community members. Some schools find that team members are willing to alternate between afternoon and evening meetings so that no group is overly inconvenienced. Subcommittees or topic teams can do some of the legwork between meetings. For example, a specially-designated team might do the research on strategies, once the priorities are established. Often persons who cannot participate in leadership group meetings can find time to do some of the needed tasks as adjunct members of the planning team.
- *Arrange the meeting space ahead of time with chairs, flip charts, etc. so that people are not leaving the meeting for additional chairs or supplies.* Arrangements should take into consideration creature comforts, such as nearby lighted parking lots, restrooms, water and/or other drinks, and food for longer meetings.

- *Prepare an agenda for each meeting that identifies the desired goal and provides backup material.* Meetings should not go beyond two hours unless special plans have been made (as with a retreat, etc.) and should start and end on time. Think about establishing other group norms, which are particularly helpful in staying on task and allowing everyone to participate.
- *Maintain an open process:* publish meeting times, agendas, brief summaries of accomplishments in meetings; and invite other teachers and parents to join in, whenever possible.

Using the Ten-Step Planning Process in Planning Meetings

The following discussion of the ten steps listed in Figure 2, provides an explanation of why each step is important and how to take the step—a brief example of what the step might look like in practice with the use of some of the data analysis tools. Additionally, tips for success and a summary are included with each step. Some steps will be familiar to school planners; others may require more explanation, processing, and time or possibly even a different perspective on school planning. Persons new to the Standard Bearer Schools process frequently underestimate the complexity of Steps Two through Six. For this reason, small slices of composite school data are included in Steps Two through Six, with narratives of how a planning team analyzed these data. The examples show how other planning teams have progressed through the steps—but their processes are neither the only way, nor necessarily the best way for every school.

Because the process is recursive, it is always possible to revisit a step at any time. Developing a willingness to review, rethink, and self-correct is a sign of strength in a planning team. All steps require that the team leader(s) prepare materials and plan group processing strategies prior to the group session. Inadequate preparation may mean lost time, but more importantly, it may prevent some members of the team from participating fully.

Step One: Review state and local standards.

- Unpack (break into components) standards and grade level expectations to understand what is expected of students; look at examples of student work that meets the standards.
- Review the alignment of standards with the assessments in use.
- Assess the degree and quality of standards implementation at all grade levels/classes.
- Revise, as needed, the alignment among standards, materials, teaching practices, and assessments.

Why is this step important?

While the details of unpacking, aligning, implementing, and revising state and local student learning standards are certainly the purview of grade-level and subject area teacher teams within the school, the planning team will benefit from an overall view of the standards as they grapple with the achievement picture that is emerging from the data. Secondly, a standard can be deceptively simple looking but involve a large, complex set of knowledge and skills on the part of the student, so the planning team may want to consider what is actually being expected of students. What does a high quality outcome look like at different grade levels? How is the standard assessed? What do different performance levels mean? What are the differences between a below-standard performance and one that meets or exceeds the standards? What do learning gaps mean for students in subsequent years?

Finally, understanding the gist of the subject standards leads to a greater appreciation and recognition of the importance of the work that students do in school and inspire a greater commitment to helping all students reach the standards through the planning process.

How do we take Step One—reviewing state and local standards?

While the team leader may want to make complete copies of the standards available, a team meeting is not the place to plod through all of the standards. Instead, it is best to select one or two important standards in reading and mathematics to show how they are organized and assessed and to provide some key terms and acronyms (e.g., standards, expectations, performance levels) for non-educator team members. Next, participants can engage in an information exchange about the importance and meaning of the standard, what it might look like at different grade levels and how it is assessed locally, as well as on the state test. The goal is to provide a basis for the ongoing work of the team. Other opportunities to elaborate on the standards will likely come up throughout the process.

Figure 3 shows a benchmark for grades 6–8 for a common component of the reading comprehension curriculum across the country.

The operative teaching concepts found in the grade 6–8 benchmark are (1) main idea or essential message, (2) non-fiction texts, (3) relevant details and facts, and (4) patterns of organization. More notably, students are expected to continue to develop these complex skills and become more fluent as they move through the grade levels and are presented with increasingly more difficult texts to read.

Fig. 3 Reading Standard and Benchmark

Strand: Reading

Standard 2: The student constructs meaning from a wide range of texts.

Benchmark: Grades 6–8

The student determines the main idea or essential message in non-fiction texts and identifies relevant details and facts, and patterns of organization.

A planning team of diverse stakeholders can readily understand what is involved in this benchmark by trying it themselves. Using a typical non-fiction passage (a short newsmagazine opinion or feature piece, for example), the team leader can highlight each of the four concepts listed above and encourage the group to share their thoughts. All group members can discuss why non-fiction is different from fiction and why this particular skill is important for students as they progress through school and into the world. Next, the team can review examples of how the skill is assessed from the state manual for parents, if one is available.

Later, if the examination of the assessment data indicates that a revision or realignment is needed, the principal or team leader will want to delegate that work to the grade or subject level teams, but including the full team in this type of analysis allows everyone to see the ongoing quality control that is involved in standards-based teaching and learning.

What are some tips for success?

- Step One is a good choice for the earliest meeting of the year—along with getting organized. It makes an interesting dialogue and lays the groundwork for reviewing the achievement data, which may not be available in an accessible format at the first meeting of the school planning year. Also, starting the team meetings with an engaging discussion among participants increases the likelihood that members will bond and attend regularly.
- Selecting a lead teacher or two to present examples of standards to the group is a good strategy. A teacher(s) will also be able to elaborate on the teaching material and strategies as well as any complexities, and keep the presentation brief and engaging. A problem-solving standard, with either algebraic or geometric concepts, usually makes an engaging mathematics example to share with the team.
- This session with the first step may be a time to demonstrate that teaching to a standard is

not teaching to the test, a common misperception, and that effective standards-based teaching is an evolving process.

Step One familiarizes the school planning team with the concept of learning standards, which are the basis of assessment in most states and districts. While standards are second nature to the educators on the team, other members will appreciate knowing what a standard entails and how it guides curriculum, instruction and assessment. It also helps all participants to remember how important it is for all students to be able to achieve the standards.

*Galileo Galilei said that
“all truths are easy to
understand once they are
discovered, but the point is
to discover them.”*

Step Two: Examine and analyze school data and programs.

- Disaggregate the annual achievement data by income, ethnicity, program, gender, grade level, language proficiency, teacher and other demographic or program categories that may help explain achievement outcomes.
- Look for patterns in the data at the school, grade, and student level. Look at the clusters or subtopics in the assessment data for greater specificity.
- Look at other assessments of the same students for parallel findings.
- Look at other data, including but not limited to perceptual data, behavioral data, and school program and process data.
- Use tests of statistical significance to determine if differences matter.*

Why is this step important?

Galileo Galilei said that “all truths are easy to understand once they are discovered, but the point is to discover them.” Examining and analyzing newly acquired school data and evaluating

programs or initiatives are the beginning points of the discovery phase of school planning. Schools and districts may be drowning in data, but collections of data left unanalyzed are relatively useless. It is the examination of the data in

order to plan or adjust instruction or make a mid-course correction that is the key to developing plans that get results. When school plans fail to result in meaningful changes in teaching and learning, it may be that strategies and activities are not based on a thorough examination of the data or that the plan is narrowly focused on one type of data, such as the summative (end-of-year) achievement data only.

Beginning the data analysis step assumes that the school planning team has been provided with a full package of achievement data early in the new academic year, such as the CDA tool described in Section 1. Data reports provided on state and district websites are not necessarily user-friendly for the purposes of school planning. The graphs in Figures 4, 5, and 9 represent several of the CDA formats created by CTAC to provide planners with information in a more accessible format. The advantage of these formats is that they stimulate analytical thinking through the organization and presentation of the data.

Another resource for helpful ways to display data, mentioned earlier, is *Informed decision-making: An introduction to student achievement and teacher data comparisons*.⁵

Time is limited for all school personnel, but engaging in careful and thoughtful examination of school, student, and program data will lead to the type of discoveries that can make schools better. Getting and staying data smart plays a significant role in closing the achievement gap. Becoming an inquiry-driven planning team will pay off in both the short- and long-term.

* Caution should be exercised, however, when making decisions based on small numbers of students.

How do we take Step Two—examining and analyzing data and programs?

Getting started on examining and analyzing data is not so difficult—just begin, with the achievement data in hand, brainstorming and listing all of the observable anomalies or puzzling aspects of the data and then list questions or comments about what one is seeing. Why are sixth-grade reading comprehension scores lower than last year’s scores? How does average performance of the school’s students compare to district and state averages? How does average performance of the students in one grade compare to student averages in other grades in the school? Are there commonalities among the students who are performing below standard?

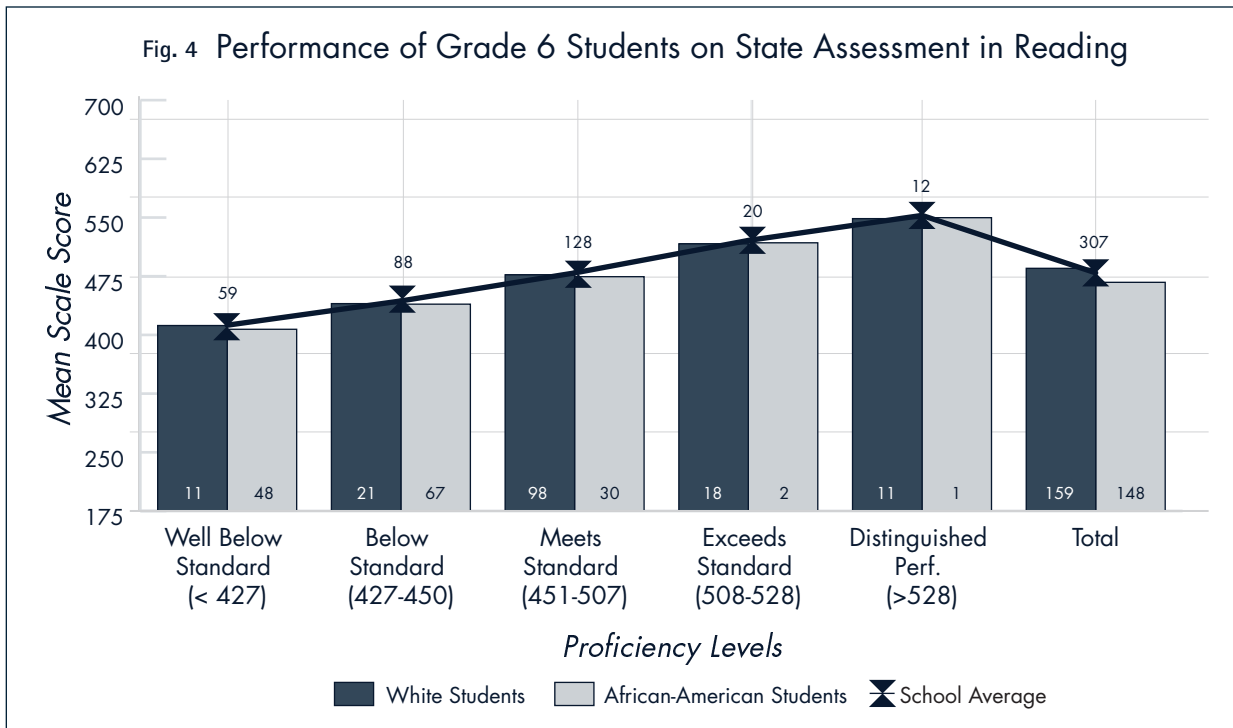
The brainstormed items should next be ranked for a more in-depth look and discussion. One way

Getting and staying data smart plays a significant role in closing the achievement gap.

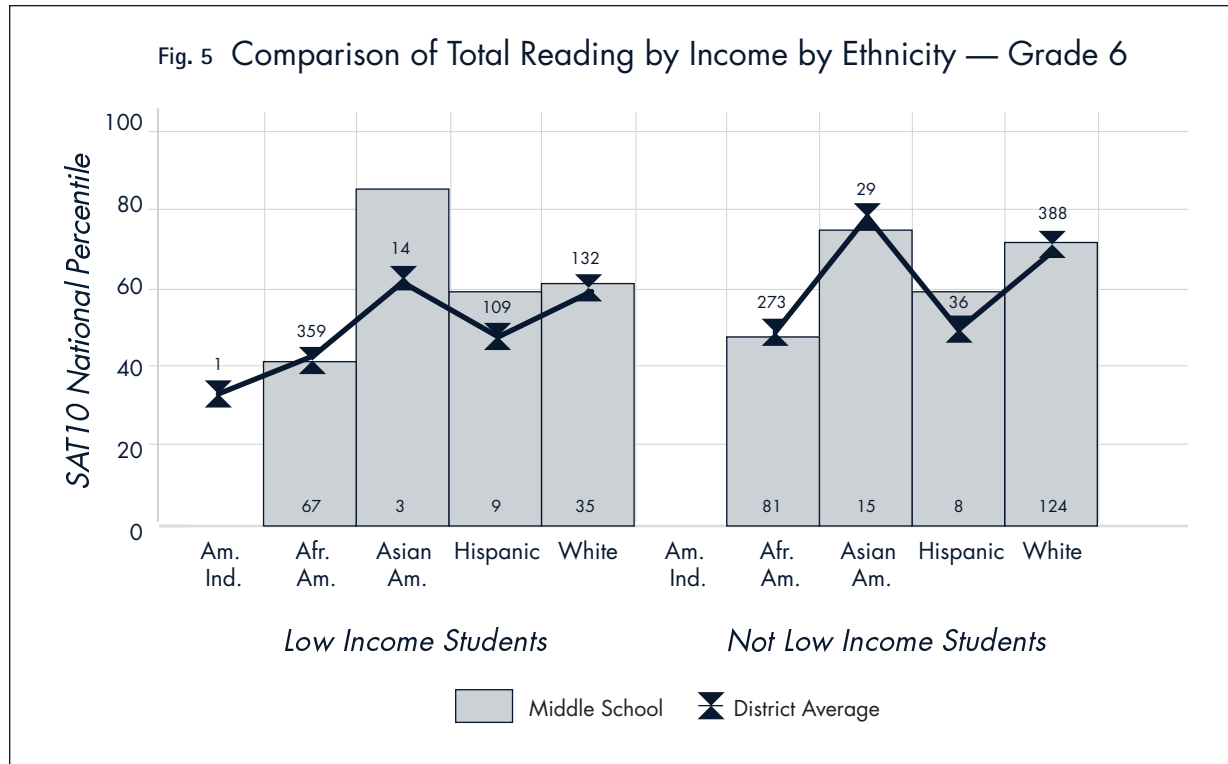
to rank is by the number of students impacted. Though all observed anomalies are important to pursue eventually, those that impact the greater number of students will be of immediate interest

and the most likely to have been school-influenced.

A planning team at a middle school located in a district in a mid-sized city in the northeastern United States looked at the school’s 2006 state assessment results (see Figure 4) which indicate that 43 percent of the school’s sixth graders met or exceeded standards in reading and 22 percent of the school’s African-American grade six students met or exceeded the standard in reading. Disaggregating student achievement data by ethnicity, in this case, creates an immediate concern for the team. But, does information from the disaggregated state assessment data provide enough insight into this achievement gap so that



* Note: The x-axis in Figure 4 shows the five proficiency levels of the state assessment as well as the results for the total group broken down by White Students and African-American Students. The butterfly symbol represents the results for the school overall. The numbers at the bottom of each bar and above the butterfly symbol are the numbers of students in the group. The y-axis is the mean scale score of the group on the assessment. For example, the first bar pair indicates that 11 White students had a mean scale score of 405 while the 48 African-American students had a mean scale score of 402. The mean scale score for the combined 59 White and African-American students was 403. These students scored “well below standard” on the state assessment.



* Note: Figure 5 disaggregates the school's performance on a norm-referenced test (SAT10) by students' race/ethnicity and by their income (or participation in a free/reduced lunch program). Similar to Figure 4, the numbers at the bottom of each bar and the numbers above the butterfly indicate the number of students in the group. For example, the first bar represents low income African-American students. Their mean national percentile on the SAT10 is at the 40th percentile. There are 67 students in this group in this school. The mean national percentile for all low income African-American students in the district (359 students) is at the 38th percentile as indicated by the butterfly near the top of the bar.

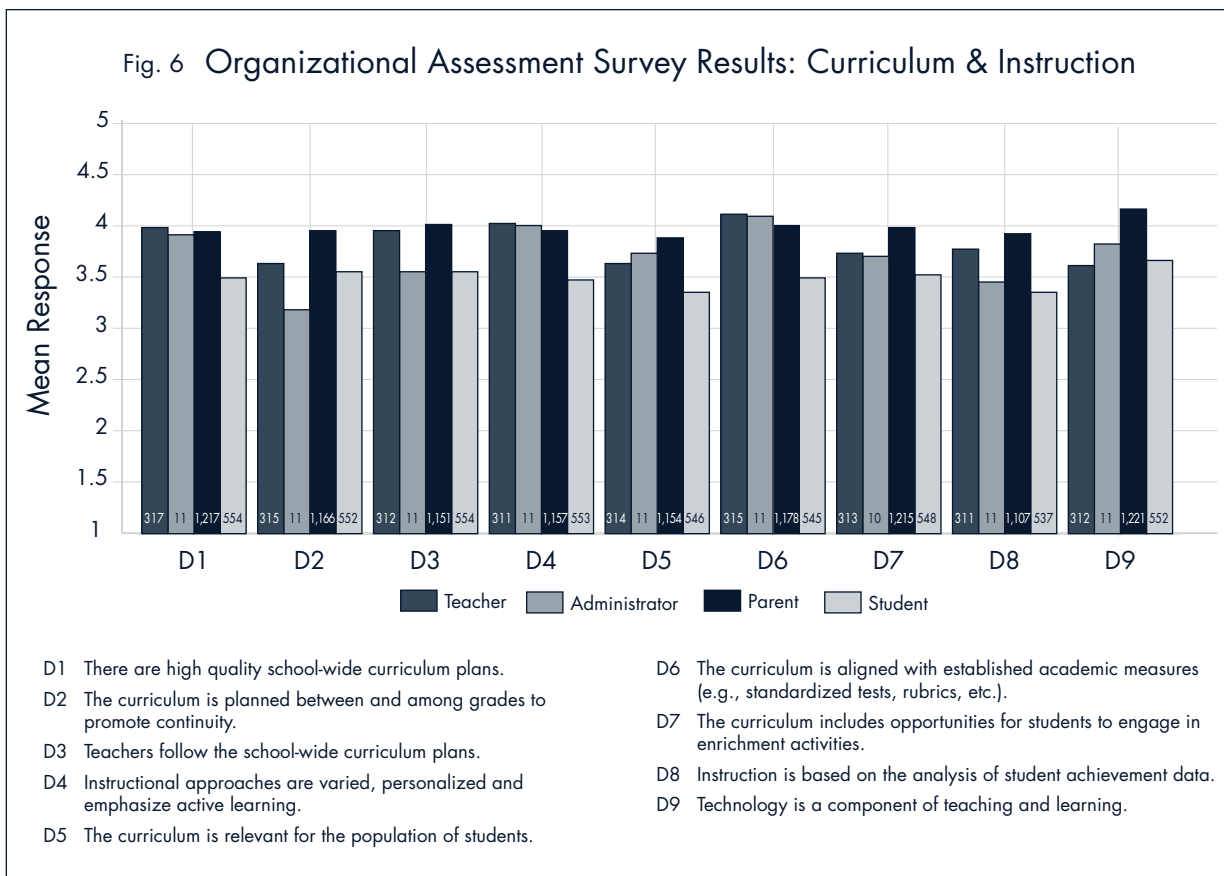
the school improvement planning team can move forward to set an objective, develop strategies, and finalize an action plan? No! So what else does this school planning team consider before setting priorities?

The middle school team decided to look at a second measure of the same students based on a different type of test—a standardized assessment. This comparison gives the planning team further reason to continue to probe. To begin with, the standardized test (see Figure 5) administered by the district shows that, as an average, African-American students in the low income group are performing at the 40th percentile and those in the not low-income group are performing below the 50th percentile. Low income White students are performing just below the 60th percentile and not low-income White students are performing close to the 70th percentile. These two ethnic and income groups are the ones with adequate numbers at this grade level on which to base

conclusions. Other ethnic groups at the grade level are too small in numbers to generalize about performances.

In order to be guided by evidence in setting planning priorities, the middle school team wanted to delve more deeply into the details of the data. A cluster (a group of related assessment items) analysis of the state reading assessment data indicated to them that comprehension of non-fiction texts is the weakest area for this group as well as for all sixth-grade readers who are performing below standard. Drilling down into the reading data in this manner revealed multiple layers to the achievement gap.

A further step for the team is to validate their observations with a review of formative assessments, or benchmark tests, in reading to validate observations. Teacher observation data from reading conferences and other classroom activities may add further to the team's understanding of the problem; however, two cautions are in order here:



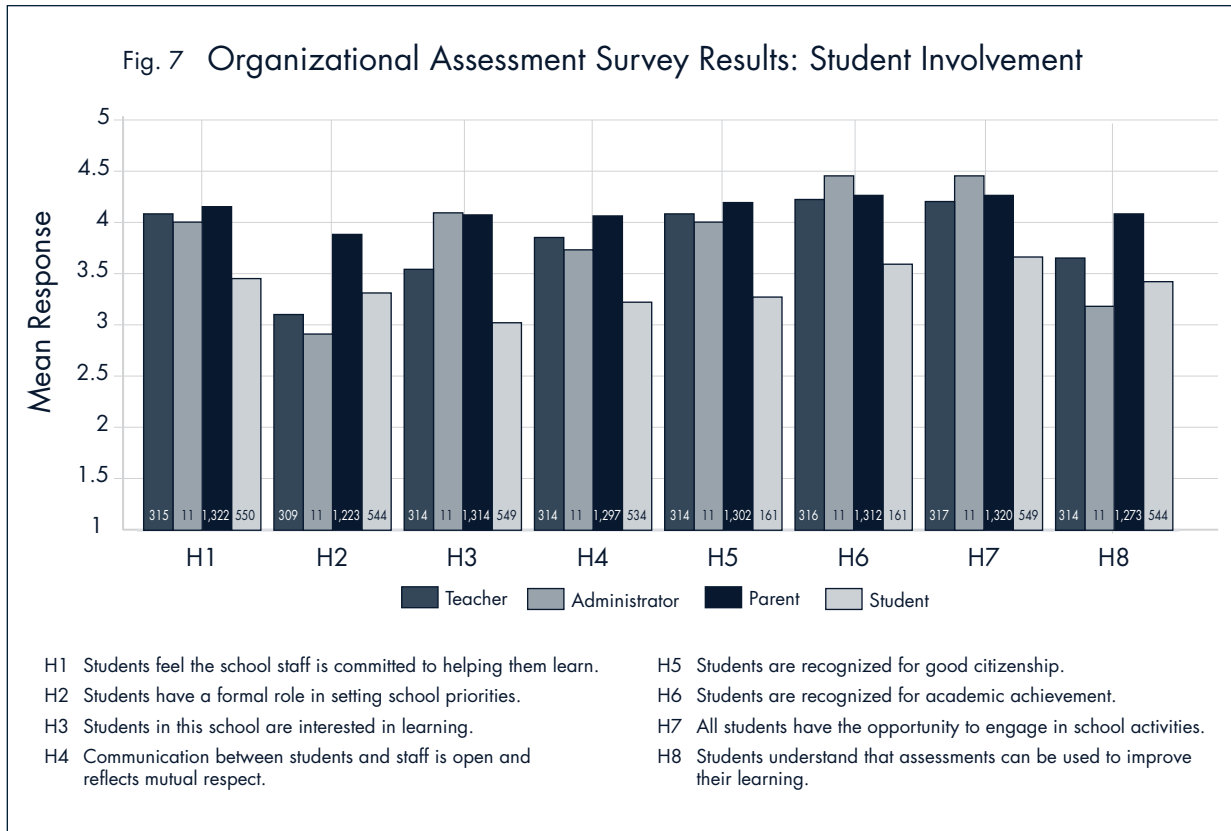
* Note: Figures 6 and 7 are each based on a particular category of the OAS; Figure 6 shows the nine items in the Curriculum & Instruction category. The data are disaggregated by four constituent groups: teachers, administrators, parents and students. The mean response is based on the 5-point Likert scale ranging from 5=Strongly Agree to 1=Strongly Disagree and presented on a scale from 1 to 5. The numbers at the bottom of each bar are the number of responses for that group on that item.

(1) formative assessments or observational assessments that are not consistently administered (i.e., it is up to the teacher when, what, and whether to assess) may be misleading; and (2) classroom data used by the planning team should not reveal a student’s identity by name or implication.

The data examination and analysis tasks are not yet complete. As the school improvement planning team tackles the weak reading comprehension of some sixth graders and the achievement gap between African-American and White students, an important source of clues will be found in the assessment of school effectiveness. As explained in Section 1, CTAC’s OAS, developed for Standard Bearer Schools, helps school districts to identify a school’s core conditions, as seen through the eyes of its constituents. The

OAS assesses nine areas: climate, school planning, teacher quality and evaluation, curriculum and instruction, assessment and accountability, principal effectiveness and support, parent involvement, student involvement and district office support.

Figures 6, 7, and 8 provide examples of OAS results that the middle school planning team believes may be related to the reading achievement issue. The bar charts in Figures 6 and 7 show the mean or average response of each group on a five-point Likert scale—where Strongly Agree=5 and Strongly Disagree=1. The data are also available in tables that are broken out by the actual percentage of responses for each group, providing more detailed information, as shown in Figure 8.



An examination by the planning team of the OAS data reveals a mixed response from students to a statement that instructional practices are varied, personalized, and emphasize active learning (see OAS Item D4 in Figure 6). Students and teachers both give a mixed response to the statement that the curriculum is relevant for the population of students (see OAS Item D5 in Figure 6). There is even less agreement that communication between students and staff reflects mutual respect (see OAS Item H4 in Figure 7) or that students are interested in learning (see OAS Item H3 in Figure 7).

The team wonders if some of these conditions may be related to the reading achievement issue and, consequently, identifies several of the organizational items to pursue. To probe more deeply, they look at the actual numbers and percentages of results. For example, the Item A6 in the Climate section indicates that while teachers perceive the school’s atmosphere to be friendly, over 61 percent of its students disagree (see

OAS Item A6, shown in Figure 8 in the tabular format).

Figure 8 presents the OAS data in a different format. Each item is disaggregated by the four constituent groups. A box containing the number and percent of respondents indicating Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree are contained in the grids. Horizontally the reader can determine how the teachers responded and vertically the reader can determine what percent of the overall group chose each response category. For example, to the question “This school is safe and secure.” 45.0 percent of the teachers agree and 37.7 percent of the students agree. Of all of the respondents, 46.5 percent agree that the school is safe and secure.

Since the data seem to say that the reading comprehension issue is more acute for African-American students, what about other groups? Until the team members look at the data from all perspectives, they may not know if the reading issue is one of ethnicity, poverty, language proficiency,

Fig. 8 Organizational Assessment Survey Results: Crosstabulations of Climate

A1. This school is safe and secure.							
		Strongly Disagree	Disagree	Mixed Opinion	Agree	Strongly Agree	Total
Teacher	Count	3	17	70	145	87	322
	% within Position	1.0%	5.3%	21.7%	45.0%	27.0%	100.0%
Administrator	Count	0	2	1	2	6	11
	% within Position	0.0%	18.2%	9.1%	18.2%	54.5%	100.0%
Parent	Count	5	29	244	724	432	1434
	% within Position	0.4%	2.0%	17.0%	50.5%	30.1%	100.0%
Student	Count	26	40	222	207	54	549
	% within Position	4.8%	7.3%	40.4%	37.7%	9.8%	100.0%
Total	Count	34	88	537	1078	579	2316
	% within Position	1.5%	3.8%	23.2%	46.5%	25.0%	100.0%

A6. There is a school-wide atmosphere of friendliness and trust.							
		Strongly Disagree	Disagree	Mixed Opinion	Agree	Strongly Agree	Total
Teacher	Count	8	24	88	124	80	324
	% within Position	2.5%	7.4%	27.2%	38.2%	24.7%	100.0%
Administrator	Count	0	1	1	4	4	10
	% within Position	0.0%	10.0%	10.0%	40.0%	40.0%	100.0%
Parent	Count	7	31	227	685	470	1420
	% within Position	0.5%	2.2%	16.0%	48.2%	33.1%	100.0%
Student	Count	86	247	100	74	43	550
	% within Position	15.6%	44.9%	18.2%	13.5%	7.8%	100.0%
Total	Count	101	303	416	887	597	2304
	% within Position	4.4%	13.1%	18.1%	38.5%	25.9%	100.0%

teaching effectiveness, is behavior-related or gender-related, or whether it is isolated at one grade level. A significant part of the data story in any school is *not only what is but what is not*. For example, what if the sixth grade reading comprehension issue is districtwide? What if it is not? Who are the students in the sixth grade performing at or above the state standard? Do the school experiences of the

African-American students in the sixth grade who performed at or above standard provide any clues? Looking at and comparing all group data are a critical part of the ongoing examination of the middle school's data.

A significant part of the data story in any school is not only what is but what is not.

Will the team agree by Step Three that reading comprehension of under-performing sixth graders is a critical issue, one even more critical for African-American students? Is it the only

one? What other issues will emerge as the group continues to work through its list of observations from the achievement and organizational data? For example, 47.9 percent of all sixth grade students in this school are performing below standard in reading (see Figure 4). Are there ways to tabulate the types of comprehension issues students are experiencing? Why are so few students, regardless of income and ethnicity, in the top performance category? What other areas in the data stand out as needing further exploration? These are the kinds of questions the planning team needs to explore.

Disconnects as well as links across the data may be helpful to the team's analysis.

What are some tips for success?

- Disconnects as well as links across the data may be helpful to the team's analysis. For example, the organizational assessment data of the middle school discussed above show that most teachers rate the curriculum as being of high quality and believe that teachers teach the curriculum well (see Figure 6); yet a significant group of students are below standard in reading. How do these two observations add up?
- How groups respond differently on organizational assessment items can be seen in the crosstabulations of the organizational assessment data (see Figure 8). Resolving differences in perceptions opens up new ideas and perspectives for planners as well as dialogue among groups of stakeholders. Principals will want to use the results of these organizational assessments in other venues, such as faculty meetings, PTA meetings or broader community meetings, for dialogue or to explain how the school is improving perceptions. The more visible the results of the OAS, the easier it becomes to engage the school community in completing and returning the annual survey.

Data analysis or Step Two for a school planning team promotes thoroughness in examining all of the available data, recording the observations of the planning team that is conducting the

analysis, asking questions, and keeping an open mind before proceeding to the subsequent steps. The mode of Step Two is largely one of open pursuit, brainstorming, and dialogue. During this first phase of examining all of the available data and maintaining an open-mindedness and respect for different views, coupled with a willingness to probe beyond the obvious, will lead to a more thorough review and more reliable analyses.

Step Three: Identify critical issues in the data.

- Determine through data analysis and then select those areas where significant groups of students are achieving below standard and/or that show student achievement is flat or has declined over time.
- Write down issues that emerge from observable patterns in the data.
- Look for similar trends in multiple years of data.
- Compare with state and district averages and demographically similar schools.
- Identify areas of growth and/or strength in student achievement patterns.
- Look for relationships among or between critical issues (i.e., math scores are down; a new textbook was implemented during the previous year).

Why is this step important?

Once the team has delved into multiple sources of data about student achievement; classroom and school practices, and student behavior; and

developed a list of observations about which there are questions or concerns, the next step is to identify the critical issues that have emerged. To this point, examination of the data will have been conducted through observation, brainstorming, questioning, and dialogue. The list of observations may be long. Now it is time to write down what the team believes to be critical for further pursuit so that a more focused analysis can be conducted. It may involve narrowing down or clustering several observations into a single issue. It is this selection of identified issues that will be probed further for causation in Step Four and addressed for improvement by the school community. Moving from areas or questions identified in the data to issue statements or topics is the goal of this step. One can think of issue statements or topics as potential hypotheses that will need further investigation and probing.

How do we take Step Three—identifying critical issues in the data?

In Step Two, planning team members identified anomalies in the data about which they have questions or concerns and probed a variety of data for related observations. In Step Three, team members will formalize their observations and identify the critical issues in what they have found. In Step Two, one of the middle school team's observations about the achievement data led the group to look more closely at African-American students in grade six and then to see if the qualitative data as well as the behavioral data suggested any related issues or explanations. The team believed that several critical issues emerged from their line of analysis:

- African-American (low income and not low income) students underperform their peers in particular aspects of reading comprehension (e.g., determining the main idea, identifying details in non-fiction texts, and synthesizing character and theme).
- In general, reading results on the standards-based assessment show few students, regardless

of income or ethnicity, performing in the top two proficiency levels.

- There is disagreement among OAS respondents about whether instructional approaches are varied, personalized, and emphasize active learning (D4) and whether the curriculum is relevant for the population of students (D5).
- There is a lack of agreement between students and teachers that communication is open and reflects mutual respect (H4).
- While teachers perceive the school's atmosphere to be friendly, over 61 percent of its students disagree.

Sorting out from the list of observations what is critical to address further is a matter of asking questions. What will happen if this phenomenon continues? Can the school take steps to address the identified issue? What additional information is available to help the group sort out the significance of the observation? What is likely to happen if the issue is not addressed in the school plan?

Before identifying these issues as planning priorities (Step 5), the middle school team wanted additional information. First of all, had the trend or pattern of underperformance been identified in the prior years' data? Is this an isolated sixth grade issue or a cohort issue? Could the lack of growth be related to moving from elementary to middle school? Has this group of sixth-grade students slipped behind their peers as a cohort over a period of time longer than a year? A check for persistence of critical issues across grade levels, with cohort groups, or over time helps the team to understand whether the identified issues are truly critical or if they are single year anomalies that will bear watching and correcting. If an identified issue is race or gender-based, it will likely be detectable in the cohort prior to the sixth grade; if not, the cause of an achievement issue may be one specific to the grade level experience.

The middle school team looked at a scatter-chart (see Figure 9), which illustrates that many

students lost ground as they moved from fifth to sixth grade. Standard Bearer Schools participants use scattercharts to compare two years of performance by individual students, representing one year's growth. The x-axis represents the fifth grade normal curve equivalent and the y-axis represents the sixth grade normal curve equivalent on a standardized achievement test. Movement toward the upper right quadrant is indicative of growth. Each dot represents the fifth and sixth grade SAT 10 NCE scores of one or more students by ethnic group.

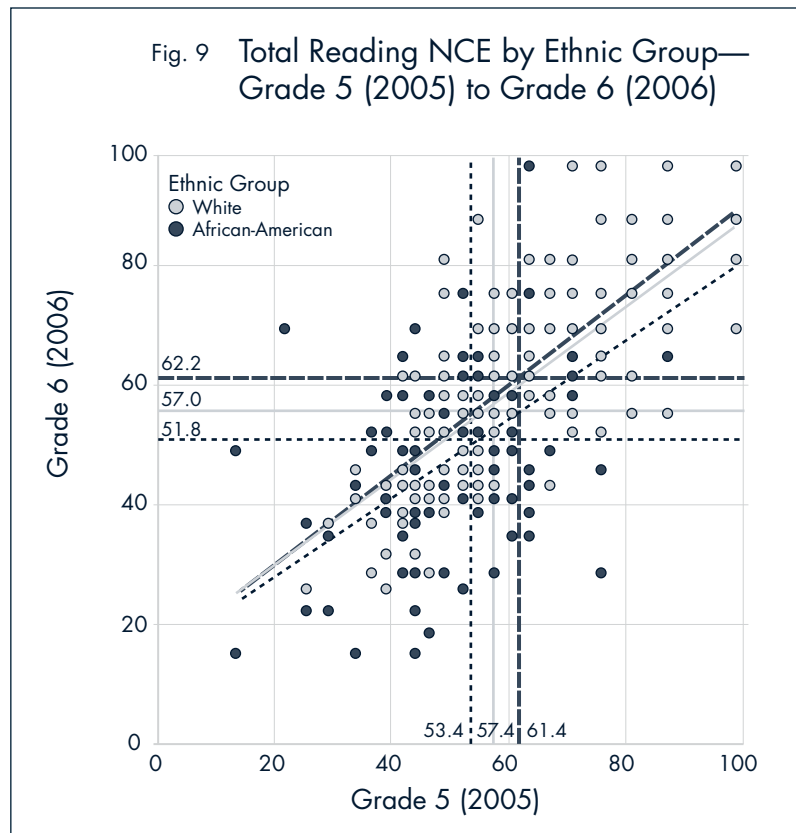
Overall, the cohort lost 0.4 NCE, with African-American students losing 1.6 NCE units and White students gaining 0.8 NCE. An analysis of student growth, such as the scatterchart shown in Figure 9, is particularly helpful because it shows the growth of individual students from one year to the next. Because each data point represents scores from two successive test administrations, the students have been in the cohort group for more than a year, which eliminates some of the data dissonance caused by student mobility. Some observations about the scatterchart:

- The achievement gap between White and African-American students is not as great on the standardized achievement test as the gap for the same cohort on the standards-based performance assessment (see Figure 4).
- The performance of African-American students declined from an average of 53.4 NCE units to 51.8 NCE units, while the performance of White students increased from 61.4 to 62.2 NCE units.

Based on these observations, the planning team may want to

know more about the role of mobility in the performance of the students; the possible reasons for weak average performance on the standards-based performance assessment (curriculum-specific knowledge) when the standardized achievement test (general knowledge) show African-American students to perform on the national average at above the 50th NCE (when mobility is removed as a factor).

Other considerations for the planning team as they identify critical issues are successes or strengths that are observable in the data. For example the bulk of the below-average performers in both groups are clustered above or near the 40th percentile, a scenario relatively amenable to reading interventions. Since students are performing less well on the standards-based performance assessment than the standardized achievement test, the planning team might want to know more about standards-based teaching



practices in both fifth-grade and sixth-grade classrooms.

Finally, the team will want to know how the school's performance compares to other schools in the district or to similar schools in the state. The

standardized test (see butterflies on Figure 5) shows the average percentile rank for all district sixth graders to be about the same. Could a performance drop off be related to the move from elementary to middle school? If an achievement issue is emerging across the district or state, the causation and resolution may lie with these agencies—a curriculum implementation weakness or an assessment misalignment may need to be addressed.

Most planning teams will have a half dozen or more critical issues on the table at this stage and should not let anything go until the priority-setting step—Step Five.

What are some tips for success?

- During this step, the planning team will be moving toward more judgments or generalizations, so it is important to keep the data in view as it will help team members to stay focused on the evidence.
- A good question for both Steps Three and Four is to ask what alternative explanations might account for the identified issues.
- Step Three may be the time to think about whether additional data are needed (e.g., classroom observations, interviews with students and teachers). Student and parent perceptions of school climate, culture, classroom atmosphere, instructional practices, and discipline can be explored through focus groups or interviews—e.g., by quoting the findings from the organizational assessment survey and asking about why students and/or parents believe that the school is not safe.

A good question for both Steps Three and Four is to ask what alternative explanations might account for the identified issues.

- If a pattern detected in the school's data is also found in other schools in the district, the team will possibly need to discuss their role in a change in the district without giving up responsibility

for improvements in their school. Inviting a district staff member to share their views and plans is well advised at this juncture.

In summary, the planning team discusses and agrees on critical issues by first agreeing to and writing down the group's observations about patterns and trends from the available data as well as any questions that have come up which will help them in probing for cause. Some questions may lead to additional data collection, possibly classroom observations or student interviews; others may lead the group to review some educational literature.

Step Four: Probe for causation.

- Continue to ask questions about observable patterns in the data and about the character of the data.
- Develop hypotheses about the possible reasons for the observed patterns and trends.
- Use perceptual, program, and teacher data to test hypotheses and to probe for possible causes.
- Collect additional data and input if needed (i.e., conducting interviews or focus groups with students, parents, and/or teachers on a topic).

Why is this step important?

Probing for root causes is the most important step in school improvement planning, but it is the step most often overlooked, even by seasoned, astute site administrators. Lack of time, unrealistic deadlines, an inadequately composed team, absence of adopted norms that encourage debate, and a

practice of looking exclusively at summative achievement data in the absence of other potentially explanatory data are among the most common reasons why school improvement teams may not give adequate

consideration to probable cause. When this step is glossed over, school teams may propose, fund, and implement programs that address symptoms as opposed to root causes of problems.

For example, suppose the middle school team had decided that African-American students underperform their peers because they disrespect school rules and are frequently absent and missing instruction of important content. Believing these to be the root causes of the achievement gap—a disrespect of rules and high absenteeism—a school team may propose an intervention that addresses student behaviors—a new attendance or discipline policy, for example, but it is unlikely that student performance in reading comprehension will improve because the intervention does not address the effect itself.

In examining the data, it is natural to wonder why and, then in order to explain achievement

Probing for root causes is the most important step in school improvement planning, but it is the step most often overlooked.

disparities, leap to external factors as causes and to remedies that seem logical. While it is true that factors external to the school, such as poverty, single-parent homes, and an absence of a sense

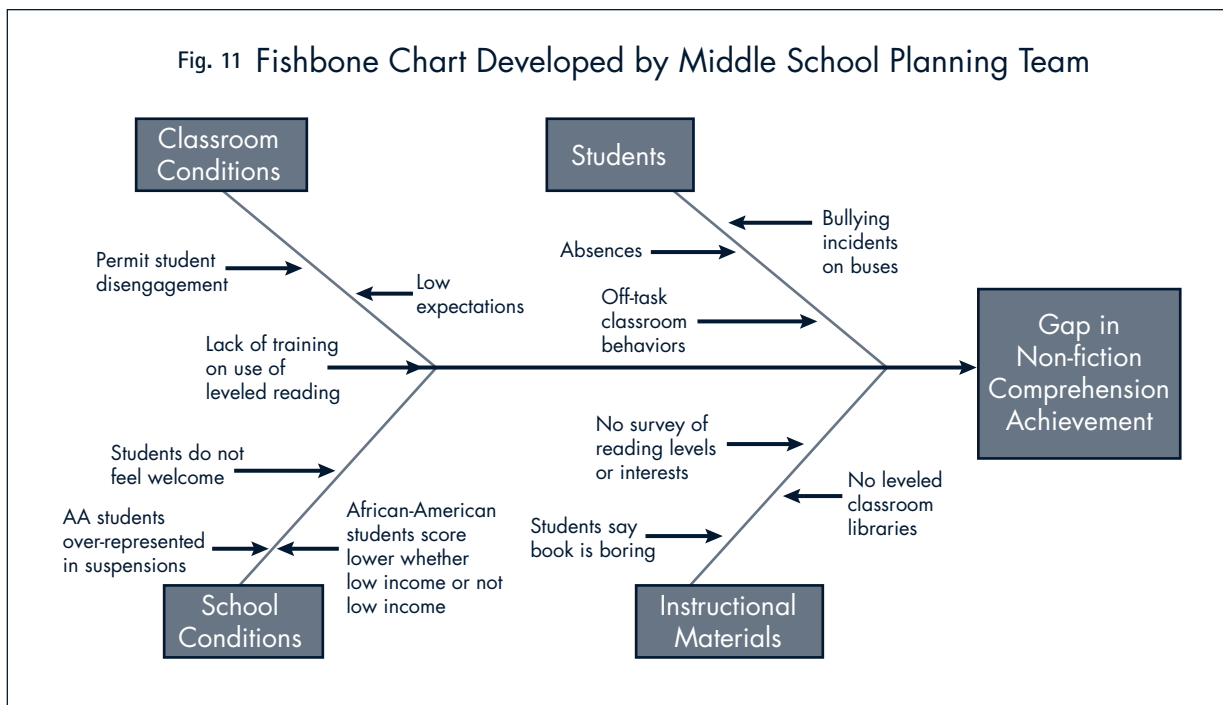
of efficacy may affect student achievement, there nonetheless exists substantial evidence of schools where, despite such factors, children excel and keep pace with their peers. A study that compared high-performing and low-performing “high needs” schools found that high-performing and low-performing high needs schools are *not* organized differently but rather the differences in school performance are to be found in the school environment, the nature of instruction, and the leadership.⁶

How do we take Step Four—probing for causation?

It is the role of the planning team to ensure that the practice of probing for causation—getting to the root cause of identified learning issues—is embraced by the school. In this step the school planning team will return to the

Fig. 10 Related Observation from Multiple Sources of Data

Data Source	Observation, Question, Comment
Standards-based Performance Assessment	
Standardized Achievement Test	
Benchmark Assessment	
Organizational Assessment	
Behavioral Data	
Classroom Observations	
Other	



critical issues identified in Step Three, supported by observations and findings from the data examined in both Steps Two and Three.

Summarizing observations, findings, and issues onto a grid or chart will help the planning team stay focused on data and the messages that the data reveal. The result will be a school improvement plan that begins and ends with student achievement because not only is the plan data-driven, it also addresses the root causes of underachievement, many of which can be complex. Figure 10 illustrates one way to capture observations from multiple data sources, using the critical issues and data observations of the middle school team. The middle school team compiled their observations about the reading achievement gap between African-American students and White students (other groups in the grade level were too small for analysis).

Using the data observations compiled in the format shown in Figure 10, the team next formed several hypotheses, statements that could potentially explain the achievement disparity identified from the data. To form a hypothesis to test the root causes of why African-American

youngsters underperform their peers in reading comprehension, the middle school team chose to look for relationships between and among their observations from various data sources as shown in Figure 11.

In putting it all together, the team formed the following hypothesis: African-American students may underperform their peers in reading because they are off-task. Why are they off-task? Could it be that the texts are too difficult? Could it be that the instructional practices are not engaging, relying on quiet seat work? Could it be that some teacher expectations are low?

Probing for cause is not an easy or quick process, but one that pays off with persistence. In attempting to put it all together to identify potential root causes of the achievement gap, the middle school team probed each of their hypotheses further using “The Five Why’s,” a strategy that refers to the practice of asking why at least five times to discover the root cause(s) of a problem, in this case, the achievement gap in reading comprehension. The use of the Five Why’s in a non-educational context is illustrated in Figure 1 in Section 1. Tools for Standard Bearer Schools.

In applying the Five Why's to the achievement gap issue and testing their hypothesis, the middle school team came up with the following analysis:

- *Problem or Effect:* There is an achievement gap between African-American students and other student groups in reading comprehension.
- *Why* is there an achievement gap?
Many students are observed to be off-task (e.g., their hoods are over their heads; they do not have their materials for class; they are sitting in the back of the classroom, not participating in class discussions, and not asking any questions).
- *Why* are students off-task?
The students say that the book is boring.
- *Why* is the book boring?
The textual materials do not appear appropriate to their age or background experiences.
- *Why* might the texts not be appropriate? There is not a baseline reading assessment, such as the Qualitative Reading Inventory (QRI), to establish reading habits, interests, and independent and instructional reading levels.
- *Why* was a baseline reading assessment not administered?
- *Solution:* School staff did not know they needed to do that.

The number of “why’s” should continue until everyone is satisfied with the reason. In the middle school example above, the next “why?” would have possibly led to a lack of funds for professional development or a lack of support for new or reassigned teachers in the sixth grade in teaching to reading levels and adolescent interests to accompany the new textbook adoption. Or a further examination may have revealed a lack of high-interest, non-fiction choices in the classroom’s independent reading library. If the team had stopped at the first or even the second why, they might have thrown up their hands, saying, “We can’t force students to be on task if they’re not interested in learning.” Or the team might have proposed tougher behavior expectations or

a program for teachers to distribute award tokens for on-task behavior. In either case, the root cause would have persisted and the achievement gap problem would not have been addressed.

By continuing on with this line of root cause analysis, the middle school team found out that there is a substantive body of research on adolescent readers that says that students who struggle with reading in the middle and high school grades need an engaging curriculum. They must be matched to high-interest texts at the independent and instructional levels to become successful readers; must receive small group and individual instruction along with whole group instruction; and must receive explicit instruction in vocabulary, comprehension, and writing.⁷ Not having or acting on this information affected reading instruction for all sixth grade students, but appears to have impacted African-American students disproportionately.

There may be more than one cause or a set of interrelated causes for an observed phenomenon. The middle school team used a fishbone diagram and categorized their observations into the following possible causes. A further description of the fishbone diagram is provided under “Tools for Standard Bearer Schools.”

Where there are multiple causes, they may be interdependent. For example, not administering the Qualitative Reading Inventory (QRI) to the sixth graders may be related to teacher knowledge and skills—understanding how to match students to texts at their independent reading levels and change instruction based on what is known about student interests—or to having access to a range of textual material needed to implement more interest-based reading assignments at the independent level. Reading comprehension may not improve if classroom expectations are low or if the school conditions are not welcoming.

Also, student absences and suspensions dilute learning opportunities. The planning team at the middle school was interested in the cause of the absences for sixth graders. Using the same five why’s strategy, they discovered that the transition

from elementary to middle school had not been well-planned and that students, particularly African-American students who were traveling on the buses greater distances, were staying home to avoid bullying and other incidents of misbehavior on the buses.

What are some tips for success? What are the pitfalls to avoid?

- When probing for causation, exploring the relationships between and among achievement, organizational, and observational data will usually be the most productive.
- When probing to understand the root causes of achievement or behavior problems, a focus on factors or reasons over which the school has either control or influence will be empowering for the team.
- If one root cause analysis strategy seems to stall with team members, another one will likely work. A more structured strategy like the fish-bone diagram may be easier to use initially and can be a better choice where multiple causes or inputs are contributing to the effect or output.
- The leader should help team members avoid the blame game, as in: “If those elementary teachers had only taught...” If the data indicate that an issue may be related to a practice in the earlier grades, representatives of those grade levels and/or district resource staff should be invited to participate in a discussion and contribute to the solution.

Step Four is a critical one in setting the planning team down the pathway to interventions and improvement strategies that will work. Getting to the root cause or causes of an issue means hypothesizing possible reasons and continuing to probe or push at them until they take on a recognizable form. It is also the time to give up on non-productive lines of reasoning and to follow the evidence until it yields an explanation.

Step Five: Determine priorities for improvement.

- Determine what the school can change (programs, processes, professional knowledge and skills); what it *may influence* (behavior, parent involvement, communication); and where it *may need to intervene* (pre-school, tutorials, parent visits, etc.).
- Select a manageable number of priorities as the focus of school improvement.

Why is this step important?

It has been said that “having too many priorities is like having no priorities.” When moving from probable root causes of student underperformance to determining school improvement priorities, school teams will discover that there are many variables to be considered. In order to select effectively a manageable number of priorities, planning teams will have to determine what choices will be most likely to address the root causes and be beneficial to student learning. These decisions require a structured process based on thoughtful discussions and supportive data. Major outcomes for Step Five include identifying and working with the issues that pose the greatest threat to student learning and concentrating on those areas where the school can actually have some control or impact. This step seeks to answer the question of which causes and/or issues should receive the most attention in the next year’s school plan to achieve the greatest gains for students, keeping in mind that not everything can be done in one year.

How do we take Step Five—determining priorities for improvement?

The team will need to agree that all of the identified causes or problems can be addressed within a year’s plan so that a manageable number of priorities are chosen for extensive work. As decisions are made, data or evidence should be

revisited as needed. Based on their root cause analyses, the team should compose a list of the identified causes for student nonperformance that the planning team agrees upon. A common arrangement is to list all topics for discussion, including continuing priorities from the current year's plan; however, consideration can be given to listing by related items, by grade level needs, or by subjects or categories such as reading, computation skills, climate, teaching and learning or parent involvement. If the district has a format for school planning with requirements for objectives in specific categories or areas, it may be helpful to begin to arrange priorities by those areas at this time.

Once the issues have been identified, rank them by what the school can change and what cannot be readily impacted at the school or classroom level, using a yes/no/maybe designation. Home factors are commonly cited as an area that cannot be impacted by the school; however, school-to-home strategies should not be arbitrarily discounted since creative partnerships may be cultivated for positive results in some areas. Each issue may have some validity but it is important to select those most detrimental to student learning. Ask such questions as: Are targeted groups (i.e., low income students in a Title I school) given a priority rating in district regulations? Are the selections reasonable and doable as related to the readiness and capabilities of staff and students?

The planning team should next narrow the list to the top 3, 4, 5, or any number of priorities that the team has agreed before hand is a manageable workload. Once the reduced list is compiled, the team will rank order according to the neediest areas, providing a rationale for each choice, such as "third grade scores in reading comprehension have decreased by 19 percentile points over a two-year period." Or "There is a substantial increase in the dropout rate in grade eleven." Ask such questions as "What are the anticipated outcomes for success for each priority?" "Will

Having too many priorities is like having no priorities.

the school budget support the decisions?"

The team should also identify a second tier of issues of interest for secondary attention or

monitoring. Although a limited number of causes should be targeted for major focus, it is important to recall that all areas were believed to be important to school improvement and should not be dropped from the extended agenda of the team.

Finally, all stakeholders should be made aware of the priorities chosen and the rationale for making the selection in keeping with the commitment to keep stakeholders informed.

What are some tips for success?

- Assess current plan activities against any newly emerging priorities. Continue to consider priorities which show or have the potential to show progress. Avoid keeping pet projects that have not been successful, as well as doing a complete overhaul without carefully analyzing the worth of each priority.
- Make decisions that benefit the entire school rather than support allegiance to a special program. The exception is targeting subgroups in order to close the achievement gap as required by law.
- Make immediate changes where it is clear that an issue which may become a health or safety crisis has been identified. The bus safety incident is a good example of a condition that should be addressed at once by the principal.

At the conclusion of Step Five, some of the hardest work of the school team has been completed and the priority improvement areas have been selected. However, as the team moves through the next steps, it will be important to keep in mind how these priorities were determined, what causes are being addressed, and what evidence supported the decision, so that the point is not lost in subsequent steps.

Step Six: Develop strategies.

- Search for potential strategies to address the priority improvement areas.
- Use educational research findings or best practices as a decision-making tool when selecting and developing strategies.
- Plan strategies to address the priority improvement areas.
- Determine when professional development is the strategy itself and when it is a support for the implementation of another strategy.
- Consider conducting small action research projects or pilots to test out strategies before deciding on full implementation.
- Consider how the team will know that a strategy is producing the desired result.

Why is this step important?

In school planning, one lesson rings true over and over again, and that lesson is, as noted earlier in this guide, data mean nothing without a planned response. Clearly, if student achievement is to improve and gaps to narrow or close, school improvement planning teams will have to select strategies carefully, making sure that the strategies are research-based, have a proven track record, and have been implemented successfully in schools with similar characteristics. Moreover, school improvement planning will not result in improved academic achievement unless strategies address the root causes of academic underperformance and are doable by the school staff. As the staff and team begin to research strategies to address the priorities, it will be wise to establish some criteria so that the siren call of publisher strategies and materials do not pull the team off track.

How do we take Step Six—developing strategies?

This stage of school improvement planning can be complicated because there may be a half dozen or more priorities, each with a set of problems and root causes. However, most planning teams

like this step because it is a positive action on behalf of students. Researching strategies is too time-consuming to take place in a team meeting, but organizing to do the research can. It may be helpful to break into small “design teams” where each team is assigned a priority area. Or it may be preferable to “jigsaw” tasks; for example, one person can search for potential strategies; another can vet strategies by contacting schools with similar needs; and another can create a chart that summarizes problems, root causes, proposed strategies, costs, and scheduling requirements. Jigsawing tasks is time-efficient, gets everyone actively involved, and fosters a culture of interdependence among team members, a characteristic of a professional community. Placing a teacher on each of the design teams ensures that a member of the faculty becomes conversant with each priority area. Researching strategies may be a task that staff members and/or parents who were unable to commit to the full calendar of planning meetings can join in.

Other important considerations are the number of strategies a school embraces in a given year and the potential impediments to implementation. Research and practice suggest that schools that have too many programs, some of which are not philosophically coherent, exhaust resources and get few results. A research and evaluation team studied schools undergoing reform⁸ and called such schools “Christmas tree schools.” These were schools with low academic performance and an abundance of programs. Not only were the schools continuing to fail while spending money indiscriminately, but teachers reported that new programs felt like a burden, and hence implementation was weak or spotty. No surprise that results were next to none.

The school’s readiness to implement the strategies is a final consideration. Strategies are new ways of doing things to attack or cure a new or persistent problem. Research and practice have shown that change may be difficult at times and should be approached through different perspectives or lenses:⁹ structural, human resources, political, and symbolic. What *structural changes* (e.g., scheduling a

double-block) will we have to make to implement the proposed strategy? Do we have the *teaching staff* and the *skill sets* required to implement the strategy, and what *professional development* will we need to plan into the budget? What are the *political implications* of selecting and implementing the strategy? Will something have to be cut out? How can the planning team navigate the political waters of programs competing for an often shrinking well of resources? And finally, will the strategy violate a *cultural norm* or remove a “sacred cow” and if so, how will the team mediate any tension that may follow.

Fostering faculty commitment to proposed changes is well worth the time, energy and expense. There are several ways to build teacher buy-in for a new strategy that the team has selected to address a root cause. One of those is to form study groups where teachers read journal articles and discuss the strategy and its appropriateness to their school; another approach is conducting a site visit to a school with similar demographics that has successfully implemented the strategy; still another is having an expert visit the school and present the strategy based on the school’s high priority needs. Finally, phasing the strategy in or piloting and gradually building a broader and broader group of advocates may be the best implementation approach.

Data-driven school improvement planning means that data drive decisions at the front end, during, and at the end of the school improvement planning process. In other words, it is important to develop a plan to assess the strategy (interim and end-of-year): Is it being implemented (e. g., the school is doing a better job of serving African American students)? If not, why not and what can be done to ensure faithful implementation? Is the strategy delivering interim or mid-term results (e.g., are African-American students more engaged, are they reading more, are they demonstrating comprehension of what they have read; have disruptions decreased)? And, did the achievement gap narrow on summative high stakes tests?

Data drives decisions at the front end, during, and at the end of the school improvement planning process.

The team may wish to task someone with assessing the strategy.

What are some tips for success?

- The process of selecting new strategies may lead to the need to discard other strategies or practices in order for the new strategy (strategies) to be successful.
- Changes in strategy have the greatest impact on teachers so additional opportunities for teachers to ask questions and dialogue will be helpful at this stage.
- Priorities should guide strategy decisions since it may be tempting to cover everything in one year by proposing too many strategies. Too much change can result in weak implementation and poor results.

In Step Six, the team sets up a process for researching strategies, including (1) the method (e.g., Jigsawing the tasks, inviting other staff members and parents to participate); (2) setting a reasonable number of new strategies to introduce in a year; and (3) viewing strategies through four lenses—structural, human resources, political, and symbolic/cultural. Though the tasks may be distributed, it will be important for the team to vet all of the information and make the final decisions.

Step Seven: Review the current school plan.

- Involve all stakeholders.
- Communicate with stakeholders about the planning process and opportunities for input.
- Evaluate the progress on previous improvement plan activities.
- Consider how the new priorities fit into the current plan.
- Ascertain that the budget will support the improvement priorities.

Why is this step important?

The existing school plan is the roadmap by which the school is operating in the current year. In order for new ideas to fill ongoing or newly discovered needs, it is essential that the current plan be reviewed to assess what progress has been made; what still may need attention; and what needs to be added in order to have a solid and relevant school plan, which when implemented, will lead to increased student achievement.

Developing a new plan does not mean abandoning everything in the existing plan. Rather a review allows the school team to take a look at the goals and results of the plan. The team will want to ask questions, and the answers must justify keeping or eliminating portions of the plan. After reading each major goal and objective to get a grasp of exactly what was intended in the existing plan, some possible questions for discussion include:

- What has been accomplished? Were we successful in reaching our goals? If not, what happened? Is it too soon to know?
- Do we have the same concerns now that we had last year?
- Are new data leading to new thinking about achievement issues?
- Do key areas need to be revised?

How do we take Step Seven—reviewing the current school plan?

A school planning team developed the current year's plan with input from staff and other stakeholders. The same or a similar team of representative constituents should participate in the review in order to get a variety of views. It is likely that the team is composed of some, if not all, of the previous year's contributors. New members should be brought up to date with the previous year's work.

The planning team should establish ground rules for the review and make clear that decisions will be based on supportive evidence. Time and circumstances may have resulted in different

perspectives that need to be heard. Any differing of views should be discussed and consensus reached according to ground rules laid out by the committee.

Ground rules should contain a rubric or formula for evaluating the existing plan. The overall goals and the accompanying objectives should be reviewed. Next, look at the data supporting the strategies and results. What has been accomplished? What is yet to be achieved? After careful review, a format similar to the ones shown in Figures 12 and 13 may be used to assess the *level of success* for each objective and accompanying strategies and whether they fit into the recently determined needs identified in prior steps of the ten-step model.

In reviewing the plan, the team should be cautious in making changes. There may be various reasons why an objective was not achieved. Perhaps it was because the materials arrived late for a given program. It may be that progress was made but the objective was unrealistic for the expected gains. An intervention program may not have reached the needs of a targeted subgroup or staffing may not have been implemented according to the intended instructional practices. Also, results of the final assessment of the program may not yet be available.

An example of an objective that was not met, but where significant progress would prompt a team to keep it on the radar screen, came up in the middle school. Eighth grade students improved an average of 12 percentile points in mathematics from 61 to 73. Even though the objective called for an increase to the 80th percentile, with this degree of improvement, the team decided that the new program should continue. The team may wish to discuss what led to these improvements and continue to employ similar strategies that lead to continued improvements in mathematics. In as much as it is a core area, it may also be related to new priority areas.

After finding the best strategies to improve achievement, including additions and deletions, it becomes necessary to check the budget to match

Fig.12 Assessment of Level of Success

	Beyond Expectation	Achieved as Expected	Substantial Progress	Limited Progress
Objective 1				
Objective 2				

Fig.13 Status of Objectives

	Maintain	Revise	Eliminate	Related Area
Objective 1				
Objective 2				

dollars with strategies and activities. This step is not introduced prior to this time to ensure that the search for the very best strategies to address causal factors occurs without the concern of funding.

Throughout the process decisions are made continuously as each aspect is reasoned out. Begin with the most important priorities and assign the dollar amounts. While it would be great if the budget could accommodate the desired strategies, in the event this is not possible additional decisions must be made. Questions may include the following:

- Can we be effective if we reduce the scope of the strategies?
- Is there a close substitute for the first choice of strategy for a given objective?
- What can be done without additional funds?
- What supplies or services can be carried over from the previous year?

- Is there anything in the current plan that will continue the new ideas?
- Are new funding sources likely to appear later in the year? Can the team be ready to take advantage of those?

Evaluate each strategy to ascertain if the budget can support it based on priority needs and available funds, using a format similar to the one shown in Figure 14, and make a decision to implement, revise or postpone.

What are some tips for success?

- This step is a place to involve stakeholders beyond the team to secure broader-based views about the current progress toward improved student achievement.
- Developing a culture in the school that supports an annual plan revision and renewal by taking into consideration evidence of

Fig.14 Status of Objectives

	Priority	Projected Cost	Other Options	Decision
Strategy 1				
Strategy 2				

accomplishment will help all stakeholders to remain open-minded and focused on student outcomes.

- It is not unusual for school staff to become attached to programs, even those that fail to show results. Setting criteria for success and conducting annual assessments each time programs are introduced can help make the process objective. It is important not to dismiss, without cause, a program out of hand if it has not been fully implemented or funded.
- The team may consider in-house or in-kind strategies that will assist in relieving the budgetary requirements if necessary.

In Step Seven, the team will find again that taking time to process the current plan together with the new priorities and using data to support decisions is critical to good judgment. Even if the school had a huge budget and could afford to address all priorities, it is not necessarily the best pathway to successful implementation, as noted earlier in the study about the Christmas tree schools.

Step Eight: Revise the school plan.

- Draft a proposal for the revision of the school plan that includes the rationale for any change and the impact on resources (staff and funds).
- Include a description of the rationale for implementing a new strategy, the expected results, and the planned evaluation of the effectiveness of the strategy.

Why is this step important?

At this point in the ten-step process, two plans are intersecting—the current year’s plan and the proposed plan for the upcoming year. In Step Seven, the current plan will have been reviewed to yield the following information: (1) the level of success to date of each objective; (2) the recommendation to maintain, revise, or eliminate an objective; and (3) an assessment of the feasibility of those items that will be continued. Some items considered for elimination will be ones that are complete (institutionalized), but others may be ones that are not supported by the data for continuation. Those listed for continuation in the new plan will need ongoing or second phase implementation strategies.

When a new program has been fully implemented and determined to be meritorious, it is institutionalized or ongoing, and it no longer needs to be in the improvement plan. Elements of the current plan that are incomplete or require additional phases of implementation will require consideration in tandem with the proposed new priorities as the plan is revised.

Some school plans show a list of ongoing items that never seem to have a completion point. Lack of timelines, evaluation techniques, and critical revision may lead to plans that are too long or to a feeling in the school that it is the same plan every year. On the other hand, dropping everything out of the current plan, without ensuring that objectives have been met and institutionalized, contributes to the feeling that every year is a completely new agenda or the “program du jour” syndrome.

*How do we take
Step Eight—revising
the school plan?*

Revising the school plan involves a formal comparison between the current plan activities that need to be continued because implementation is incomplete or they have been modified, and the newly proposed priorities. Visualization is helpful with abstract material. Items can be listed in columns or on flipcharts so that the planning team can look for overlaps, redundancies, and inconsistencies. It is important to analyze carefully anything that appears inconsistent or in conflict because it may have been based on incomplete information or faulty assumptions.

The team will also want to identify old and new priorities that can be integrated. For example, a priority of improving problem solving through computer technology may become integrated with the current year's implementation of a mathematics professional development plan. The team should be willing to give up on old strategies where there is no evidence of any benefit to students after an appropriate period of implementation has occurred. When the planning team has identified priority items from the current and new plan, they will want to reorganize the plan under broad categories and reprioritize activities so that the size is not overwhelming and so that each item can be budgeted for adequately.

During this step, timelines, proposed target dates for completion, evaluation strategies, roles and responsibilities can be added. A strong plan will have a distribution of roles and responsibilities rather than turning the accountability for implementation over to the principal alone. Timelines can be extended or amended but they should never be ignored.

Also at this step, the planning form that is required by the district will dictate the final format of the proposed new plan; however, the decisions and strategies reflected in the plan will

It is important to analyze carefully anything that appears inconsistent or in conflict because it may have been based on incomplete information or faulty assumptions.

be those of the school.

Though most school planning forms or protocols provided by districts do not ask for narrative rationales, it is important for the planning team at this point to tell the story of how the new plan emerged: what is the evidence? What are the assumptions? What are

the expected outcomes and how will they be measured or evaluated. This narrative can be an introduction to the new plan or an addendum at the end of the plan.

What are some tips for success?

- Some items may appear to be similar in nature but actually address a different group, grade, or subject. Take time to clarify.
- Creating specific objectives rather than general ones, such as improve reading comprehension, helps address the specific cause and is more amenable to evaluation.
- Remember that the priorities, objectives, and strategies of the current year's plan have a rationale and a constituency. Any modifications should be communicated well.
- As part of the plan, the team can set interim checkpoints and be prepared to make mid-course corrections if implementation is spotty.

In Step Eight, all of the work of the planning team comes together in a new plan for the upcoming school year. As difficult as planning work is, implementation is harder. It can be made even more difficult if the planning team has not been clear and specific in writing out the plan and connecting it to the analyses that led them to this particular plan for improvement. Though most school planning teams try to plan for continuity of membership and staff leadership, any of those things can change, so the plan should be understandable to a new principal and a new planning team.

Step Nine: Share decisions and revise again as needed.

- Share the key elements and actions of the draft plan and solicit input from the stakeholders.
- Ascertain from the process any implementation needs of staff members.
- Agree on implementation activities, dates, and timelines for completion.

Why is this step important?

Even though the planning team may have provided many opportunities throughout the year for input into the decision making, this last opportunity for staff, in particular, and others to provide feedback is critical. Some people become more aware at this point and will have helpful recommendations. Staff members, who will be the chief implementers of the plan, particularly need the opportunity to agree to the timeline. They will also want to evaluate implementation strategies in order to determine what will be needed to support new strategies or changes in processes or materials.

How do we take Step Nine—sharing decisions and revising again as needed?

The complete proposed plan should be made available during this period, but a summary of objectives and key changes for the new year will encourage staff, parents, and other stakeholders to review the plan. The principal will want to use all routine modes of communication—faculty meetings, grade level and subject area meetings, and parent group meetings to get the word out that the plan is available for review. Also consider an announcement—in plenty of time—in the school newsletter and staff bulletin that the plan is available in a designated location for review, again with a summary of objectives and key changes. In all cases, clarify the vehicle for making suggestions and the timeline for the last revision. Vehicles for gathering input about changes can be: team meetings, PTA meetings, faculty meetings, student

council meetings as well as individual discussions with team members.

What are some tips for success?

- The planning team should be genuine about this last step and take any input into consideration. It can only make the plan stronger.
- Charts, graphs, etc. that capture how the team used the evidence found in the data will foster informed discussion.
- The actual final revision is the time to put the planning team's decisions into the district format. The format may be brief but it is always possible to append narratives, descriptions, and any artifacts of the process (i.e., the fishbone diagram) to the plan—not to impress the district but to make the plan clear for those charged with implementing it the following year and as a bridge to the following year's planning process.

Step Nine provides a chance to “improve the school improvement plan” by asking staff and parents in a completely open way what will make the plan better or what will contribute to its success and then by listening to their suggestions.

Step Ten: Implement the new plan.

- Begin the new school term with a review of the plan priorities and strategies.
- Designate plan monitors to help the school stay on task, provide updates, and celebrate milestones.
- Review the new achievement data from the latest state assessment and begin the process again.

Why is this step important?

While the planning process is one of creative and critical thinking, the implementation process is one of regular tasks and routines, including ongoing monitoring, and if necessary, troubleshooting, adjusting or correcting. School improvement

depends on both planning and implementation. A landscape designer images and creates a design for a beautiful garden, but it is workers with shovels, wheelbarrows, nursery plants, and other materials and equipment who implement the design. School planning staff are often playing both roles—designer and worker. No matter how perfect a plan is, it will not implement itself.

How do we take Step Ten—implementing the new plan?

As the academic calendar is planned to include the ten-step process, so should the calendar reflect the tasks and completion dates for implementing the current plan. Preparation of the timeline or calendar for implementing the new plan should occur at the end of the year for the new term since many tasks in the new plan will need to be completed before school is out or during the summer, such as ordering materials, reorganizing classroom spaces, or arranging professional development.

The faculty can begin the year with a review of the plan, what has been accomplished in the summer and who will be monitoring various activities. There is a tendency for things to continue the way that they have been going—organizational inertia—even with a plan for change. Staff, students, and parents may need bridges from the old to the new. Principals should ensure that there are not administrative impediments to the proposed changes.

Implementation may go awry if the new initiatives are (1) not the right ones to match the need; (2) too numerous to manage; (3) impeded by the organizational structure; (4) embedded in an unsupportive culture; (5) staffed indiscriminately; (6) not communicated with a consistent language; (7) not monitored systematically; and (8) expected to create overnight change or be a panacea.¹⁰ Potential impediments are best prevented by planning rather than repairing, but mid-course corrections should always be an option if the implementation veers off target or proves to be ineffective.

It is, of course, also a good time to review the new achievement data for any obvious changes—both to celebrate and/or to make any last minute adjustments. The arrival of the new data signals the formal beginning of the new planning process.

What are some tips for success?

- The team leader should include the current school plan in site meetings as the new planning process begins. If for any reason, something in the current plan needs to be modified or adjusted, do it immediately so that valuable efforts are not misplaced as the year gets underway.
- Patience is a virtue in school planning. Changes can be difficult even when people have had input and have agreed to change. Often this is because the change has not been completely thought through and small complications can crop up. Tend to each complication and keep the plan on the road.

Step Ten is the end of the planning process and the beginning of implementation, but it is not the time for school planning teams to turn their back on the new plan. If difficulties crop up in the implementation, the team should be prepared to assist with re-orienting or re-directing the plan, as needed.

Anyone who has followed the Ten-Step Process described herein and/or used the tools will never again think of school planning as a *pro forma* activity that the school has to get through. Principals who have used the Standard Bearer Schools process and tools find that new priorities, new directions, and new commitments emerge. It is empowering for school communities to know that they can make a difference for students by knowing just the right areas of the school program to adjust. It is easy to imagine how satisfied the middle school planning team felt as the reading comprehension levels of middle schoolers increased and how willing they will be in the future to tackle the next impediment to student learning. Success breeds success in schools.

SECTION

Additional Information and Resources

Standard Bearer Schools Roles and Responsibilities

District staff members have essential roles and responsibilities to carry out in the school improvement planning process. These may be organized and delegated in various ways within a district, but the critical components include: (1) a clear message about teaching and learning expectations, preferably from the superintendent; (2) a curriculum and instruction system that is aligned to expectations, including teaching materials and assessments; (3) a data technology system that assists with collecting data and providing timely and accessible data reports to schools as well as a computer system that allow schools to manipulate their own data; (4) a special programs management system that works cooperatively with school planning teams to ensure accountability for students in need of extra support, such as English language learners and students with disabilities; and (5) a human resources department that makes data-based decisions in regard to the type of professional development that supports principals and teachers in school improvement.

Principals bear most of the direct responsibility for the school improvement process, working the steps into already busy schedules. Those involved in Standard Bearer Schools usually find that the planning schedule for the academic year assists them in conducting a quality planning process. Ultimately, as principals and teams become more practiced, time is saved and outcomes are improved, making

everyone feel that the process has been worthwhile. As the deadline nears and the plan comes together without burning the midnight oil, the principal especially will be glad of the time given throughout the year. Though principals often choose to lead their teams and should always be on them, over time, others on the team will be able to take on the monthly leadership tasks.

Teachers add value to the planning process in many ways. Several teachers will serve directly on the planning committee, others will participate in some of the research or piloting tasks of the committee, and all teachers will provide input to the process by completing the OAS. Teachers should plan to read agendas and minutes and keep up with what is happening during the committee meetings, offering input into the process as needed. School planning updates can be a regular part of monthly faculty meetings.

Parents have a unique perspective on the school, and like teachers, can share this in various ways. A few parents will serve on the planning team, some will be involved in other volunteer activities, but all parents can assess organizational conditions by completing the OAS. In the planning process, parent team members need not feel that they have to be overnight education experts, but rather they should be willing to share their perspectives and openly ask questions about data and school processes. Parents who use their own informal communication networks to talk about the school and how it is improving are providing an invaluable service. Research on parent involvement shows that the more involved parents are, the better their youngsters' school performances are. Finally, the children of parents who show that they care about the quality of the school, as well as other children in the school, will see a model of community involvement that they may emulate in later years.

Success with parent involvement is usually based on the persistence and diversity of communications, as well as broad and substantive definitions of what constitutes a parent-school partnership.

Students of all ages see ways that their schools can be better. From the sixth grade up, student representatives can participate on the planning team and complete the OAS. Younger students can participate in class meetings where they consider how to improve their classroom and schools, as well as what it is about their school that is

especially helpful to them. Focus groups of students can be convened when more information about school conditions or validation of data observations are needed in the planning process.

Others in the community or at the district may be invited or asked to participate on the planning team. It is especially helpful to have a person from a nearby or neighborhood business because they are impacted daily by the presence of the school and its students. Neighborhood agencies that provide services to the families of the children in the school, such as recreation, social, or police services, can be very helpful team members. If the district provides resource teachers, such as reading and mathematics, one may wish to be on the team to share expertise.

The Power of Parent Involvement

It may be surprising to find that the area of school planning that most concerns principals is that of parent involvement in school improvement—not necessarily because they do not welcome involvement, but because they feel that parents cannot or do not want to be involved. It may also be the case that parent involvement in other school activities is limited or inconsistent as well. A not uncommon response to the apparent lack of parent interest or involvement is to cease asking for it or to ask a smaller and smaller number of parents who are interested to give more and more time. Ceasing to ask gives parents tacit approval to not be involved in the school,

and it may suggest to some parents that their involvement is not desired.

In working with schools around the country, CTAC has observed that success with parent involvement is usually based on the persistence and diversity of communications as well as very broad and substantive definitions of what constitutes a parent-school partnership. Further, parent involvement is significantly bolstered by high quality classroom teacher communications. Most importantly, we at CTAC know, from experience in schools and educational research, that parent involvement and student achievement go hand in hand, so working to involve parents is well worth the effort. To begin to turn around low parent involvement, CTAC suggests the following:

First, consider how the school is defining or characterizing parent involvement. What is meant by parent? Sometimes extended family members are more available than a parent or may be the primary caregiver, but may not feel welcome or recognize that parent communications include designated caregivers. What is meant by involvement? It may mean:

- Reading with the child; checking homework each evening.
- Conferencing with teachers on the child's progress.
- Limiting TV viewing and video games on school nights.
- Ascertaining that the child is in school every day.
- Reading or listening to school communications; responding to communications.
- Voting in school board and school bond elections.

Parents and/or caregivers, under contract to no one, often provide the momentum for critical change and should be supported in taking their rightful role as equal partners in school improvement.

- Helping improve achievement in the school (tutoring, planning; completing surveys).
- Helping children understand why school is important.
- Sharing one's own expertise and knowledge with students.

Are some of these parent activities more important to the school than others? Is the school accepting of parents who monitor their own children but do not volunteer or join the PTA? If the school does not define involvement, parents may not know that they are not meeting the school's expectations of them. Is all parent involvement equal? Research suggests that the most effective parent involvement comes in the form of learning activities at home, such as figuring the grocery prices, reading a map, or setting aside space and time for homework and learning projects.

Secondly, determine what school staff view as the most critical parent involvement activities and events and communicate them early and repeatedly. Create a calendar of key event dates or windows and stick to it. Many parents need notice to arrange time off from jobs or difficult schedules. Ascertain that these critical activities are well planned and equal to the importance that the school has given them. Use the Internet for communications; access has become more pervasive and, like television in an earlier generation, low income is less and less an impediment to access.

Third, make parents (or parent designees) welcome at the school. Persons at the point of first contact, such as secretaries, security and custodial staff, will benefit from customer service training. Rules for responding to phone calls and returning messages should be established and followed by office staff. Carve out a waiting space that has adult size seats and a few amenities, such as coffee and water.

Fourth, create opportunities to meet parents on their own turf—in church, in large workplaces, in apartment complex community rooms, in homes, at tables set up in front of the grocery stores, for example. One administrator found parents at a busy laundromat in his attendance area.

Fifth, make parent involvement a priority for the entire school and let everyone know. A template for regular, positive (and jargonless) communications with parents should be discussed with teachers. Creating a partnership between the school and the home will negate the myth that the school is the expert and that parents should never question a teacher. Parents and/or caregivers, under contract to no one, often provide the momentum for critical change and should be supported in taking their rightful role as equal partners in school improvement.

Finally, battle the stereotyped thinking that surrounds parents and schools. For example, a lack of parent involvement does not mean that there is not an interest in their youngster's education. Most parents want a good education for their children and trust the school to provide one.

Why is parent involvement so critical? What does a district and school administration give up when they write off parents?

- Students whose parents are involved in their education at home, perform better in school; when parents are involved in the school, their children go farther in school and perform even better.
- Three kinds of parent involvement at home correlate with student achievement: organizing and monitoring a child's time, helping with homework, and talking about school.
- Reading achievement benefits the most from home learning activities with reading aloud

When schools build partnerships with families that honor their contributions, respond to their concerns, and share decision making, they are sustaining relationships that improve student achievement.

being the parent activity that most supports reading achievement.

- A home environment that encourages learning supersedes family income or education as factors in student success.
- The earlier parent involvement begins, the more powerful its effects.
- Besides improving achievement, parent involvement impacts behavior positively and creates parent confidence in the child's school.

Briefly, when parents support constructive out-of-school activities, talk to their children about school, expect them to do well, and plan with them for college their children are more successful in school. When schools involve parents in activity that is connected to improving learning, students gain. When schools build partnerships with families that honor their contributions, respond to their concerns, and share decision making, they are sustaining relationships that improve student achievement. When families and communities hold low performing schools accountable, school districts make positive changes in resources, policy, and practice.¹¹

Summary and Implications for Professional Development

The Standard Bearer Schools Guide has been written for an audience of educators and planning team members most of whom are assumed to be already somewhat comfortable with or interested in data analysis and experienced in school planning. It is based on the experiences of CTAC staff in the school improvement arena, as well as a knowledge of education research and public policy, both of which influence ongoing changes in the school planning arena.

In recent years, colleges, districts, and other agencies have provided many opportunities for data-based decision making and for learning various computer applications that assist managers to manipulate data for various purposes. Yet, it is possible to be data rich and information poor. Most Standard Bearer Schools participants find that the connections and processes that turn their school data into information upon which to base student improvement priorities are not only valuable in getting results, but also in extending their own knowledge and skills in this increasingly important arena of data-based decisions.

However, it is a wise district leader who routinely assesses the skills and knowledge of principals, assistant principals, teachers, and parents and provides professional growth opportunities for data-based school improvement, such as the following:

- Understanding the dynamics of organizations, particularly schools and districts, including culture and change.
- Examining and analyzing school data, which as the Ten-Step Process shows, requires a sound knowledge of the data in use in the school and district, including its limitations and the various ways in which data can be misleading or can be misused.
- Recognizing the key features of planning and implementation, especially how to

implement—the hardest, and most neglected, work of school management.

- Thinking both creatively and scientifically about what is going on in the school and understanding the purposes of formal thought in school improvement.
- Valuing the viewpoints and partnership of parents, students, and community members and building a repertoire of strategies for involving parents, particularly, in all phases of the school, including improvement planning.
- Knowing the school community well but also realizing that communities evolve and change over time, so that methods of communicating with and involving parents must also change.
- Running successful meetings, not just for school planning teams, but for all of the teams and task-oriented groups in the school.

This guide, developed for use in professional development settings in Standard Bearer Schools, is useful for all principals, district instructional leaders, parent and community leaders whose daily tasks are to make schools better. The Community Training and Assistance Center salutes all of those who participate in the relentless pursuit of the best education for all young people.

Glossary of Educational Terms

The following is a list of terms commonly used when discussing school improvement and their definitions.

Adequate Yearly Progress (AYP) – the annual achievement target set by each state and required by NCLB. Each year, the state will calculate a school or district’s AYP to determine if students are improving their performance based on these established annual targets.

Benchmarks – standards for judging performance and can be used to determine the quality of a student’s work. Some schools develop benchmarks to tell what students should know by a particular grade. Many districts develop benchmark tests which are used to determine students’ mastery between state-mandated test administrations.

Causation – in the context of school improvement planning and root cause analysis, causation refers to something that brings about an effect or result (e.g., car won’t start [result]; you’re out of petrol [cause].) The usage is different from the idea of causation used in scientific terms.

Demographic data – information regarding such population descriptors as socioeconomic status and race/ethnicity.

Descriptors – words or expressions used instead of numbers to describe or identify characteristics (e.g., below standard, at standard, exceeds standard are descriptors used by districts to describe levels of performance).

Disaggregate – to separate a whole into its parts. In education, this term means that test results are sorted into pre-identified groups of students, such as those who are economically disadvantaged or have limited English proficiency.

Formative assessments – evaluations which take place at points in time across a period of time, such as benchmark assessments that teachers use throughout the school year to determine their students’ progress in a subject area.

Goals – broad statements of intent, which define the general purpose of a course and may be intangible and abstract.

Hypothesis – an assumption or tentative assumption made in order to draw out and test its logical or empirical consequences.

Indicators – measures or statistics (e.g., daily attendance) used as evidence of success in accomplishing an abstract goal, such as student interest in learning.

Mean – the arithmetic average, the result obtained by dividing the sum of a set of quantities by the number of quantities in the set.

Median – the middle most score or the middle value of a set of values arranged in order of size (i.e., the point at which half of the scores are above and half are below).

Mode – the most frequently occurring score.

No Child Left Behind (NCLB) – the legislation that passed in 2001 to ensure that each child in America is able to meet the high learning standards of the state where he or she lives. A reauthorization of the Elementary and Secondary Education Act, the specific goals of the law, as spelled out in the Federal Register issued on March 6, 2002, are as follows: (1) All students will reach high standards, at a minimum attaining proficiency or better in reading and mathematics by 2013–2014; (2) By 2013–2014, all students will be proficient in reading by the end of the third grade; (3) All limited English proficient students will become proficient in English; (4) By 2005–2006, all students will be taught by highly qualified teachers; (5) All students will be educated in learning environments that are safe, drug free and conducive to learning; and (6) All students will graduate from high school.

Norm – in education the norm is generally based on the performance of a norm group. This could be the other students in the class or the school or the district but in the case of norm-referenced measures or tests (i.e., ITBS, SAT10) it refers to that group of students whose scores are used to create the designated standard.

Normal Curve Equivalents (NCE) – a set of scores that have equal interval units and that have a mean of 50, a standard deviation of 21.06 and a range of 0–99. Unlike percentile ranks which do not have equal intervals, NCEs can be used in mathematical operations.

Objectives – specific steps that lead to goal attainment; they identify skills, attitudes and knowledge that must be taught to satisfy the student’s needs and satisfy course goals.

Organizational Assessment Survey (OAS) – a survey of the organizational effectiveness of a school with respect to: climate, school planning, curriculum and instruction, teacher quality and evaluation, assessment and accountability, principal effectiveness and support, parent involvement, student involvement and district office support. The survey is administered to teachers, administrators, students and parents in a school to assess their perceptions of their school in each of these areas.

Percentile – a point on a scale of scores at or below which a given percent of cases fall (i.e., a student whose score is at the 68th percentile can be said to be doing as well as or better than 68 percent of the students to whom he is being compared.)

Percentile Rank – a number between 0 and 100 indicating the percent of students in a norm group falling at or below that score.

Proficiency Levels – categories of performance (usually four or five levels) ranging from below basic or below standards to advanced or exceeds standards, based on a state-mandated test of student performance.

Scattergram/Scatterchart – a graphic representation of two points for the same person—one on the x-axis and one on the y-axis. These graphics are often used to present a picture of the correlation between scores at two points in time on the same students. In addition, regression lines, often included in scattercharts, provide an average estimate of how change in one variable is associated with change in the other variable.

Stakeholder or constituent – a person or group of persons who have a reason to care about the quality of the school, often because they are directly impacted, which includes parents, students, community leaders, teachers, school staff, and administrators.

Standards – content standards cover what students are to learn in various subject areas, such as mathematics and science. Performance standards specify what levels of learning are expected.

Summative assessments – the ending assessment, which in education often refers to the annual spring assessments administered by the district and/or state.

Variables or factors – conditions, characteristics, or events that impact an outcome, such as the age or gender of a student (conditions or characteristics) or teacher qualifications (characteristic) or professional development (event).

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Endnotes

- 1 A discussion of Deming's principles as they relate to schools can be found in Ron Warwick (1995) *Beyond piecemeal improvements: how to transform your school using Deming's quality principles*, Bloomington, IN: National Educational Service.

Section I

- 2 Gratz, D. B., Helms, B. J., & Slotnik, W. J. (2002). *Informed decision-making: an introduction to student achievement and teacher data comparisons*. Boston: Community Training and Assistance Center.
- 3 Go to <http://www.isixsigma.com> and click on Tools and Templates on the menu.

Section II

- 4 Doyle, M. & Straus, D. (1979). *How to make meetings work*. New York: Jove. This book is a classic on the topic and has been updated, and there are other online resources for those who need a crash course to get started.
- 5 Gratz, D. B., Helms, B. J., & Slotnik, W. J. (2002).

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Section III

- 11 Henderson, A. and Mapp, K. *A new wave of evidence: the impact of school, family and community connections on student achievement*. Austin, TX: Southwest Education Development Laboratory.

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ctac | COMMUNITY TRAINING
AND ASSISTANCE CENTER

30 WINTER STREET • BOSTON, MA 02108
TEL: 617.423.1444 • E-MAIL: ctac@ctacusa.com
www.ctacusa.com

