

## Using Data and Strategies to Ignite and Invite Student Motivation and High Achievement

Today you will . . .

1. Describe the changes related to students and the educational context.
2. Be familiar with ways for using data to produce improved student learning and performance.
3. Know how to collect, analyze, interpret, and use data.
4. Determine the strengths and needs of your school's school improvement process.
5. Be familiar with successful practices and learning strategies.
6. Know additional ways to intervene when students have special learning needs.

### Agenda

- Exploring **changes** to our learners and educational context
- All about data and you
- Thinking about student motivation
- Important practices for high achievement
- Demonstration and application of powerful teaching/learning strategies
- Next steps

### Homework

1. Apply at least one strategy to help at least one student become more successful and responsible.
2. Tell one colleague or other educator about your success or seek help with challenging problems.

## Seven Things That Have Changed About Students Today

1. They have short attention spans and hate to be bored.
2. They are visually preferred.
3. They want immediate gratification and lots of it.
4. They choose to be interactive and hands-on.
5. They love challenge and are curious.
6. They want to practice, use strategies, and win.
7. They are very demographically diverse.

**A Collaborative Process to Improve Student Achievement  
and Teacher Effectiveness and Satisfaction**

Stage	Actions
<p align="center"><b>1</b> <b>Preparing Your Team</b></p>	<ol style="list-style-type: none"> <li>1. Determine the team members (e.g., grade, course, program-alike, cross-disciplinary).</li> <li>2. Communicate expectations about roles, responsibilities, processes, and contributions.</li> <li>3. Prepare the group to work in the team by communicating guidelines and norms.</li> <li>4. Prepare the setting for the meetings by computers, projectors, flipcharts, etc.</li> </ol>
<p align="center"><b>2</b> <b>Collecting Data</b></p>	<ol style="list-style-type: none"> <li>1. Review the school's/districts vision of teaching and learning/the "future-perfect school."</li> <li>2. Examine learning goals, standards, and objectives.</li> <li>3. Define essential questions about student learning needs.</li> <li>4. Determine evidence (indicators) required to answer the questions.</li> <li>5. Determine measures needed to collect the evidence/data required to answer the questions.</li> <li>6. Conduct an inventory of available measures and review the efficacy of the measures.</li> <li>7. Gather the data.</li> <li>8. Create data tables and represent the data graphically (e.g., pie charts, bar graphs, line graphs, scatter plots).</li> </ol>
<p align="center"><b>3</b> <b>Analyzing and Interpreting Data</b></p>	<ol style="list-style-type: none"> <li>1. Review data tables and graphic representations.</li> <li>2. Identify observations, patterns, and trends.</li> <li>3. Document findings for others to view.</li> <li>4. Hypothesize contributing factors.</li> <li>5. Identify connections to the school and classroom.</li> <li>6. Interpret the results.</li> <li>7. Identify strengths and the greatest areas of need.</li> <li>8. Create a school, grade level, or subject profile of student achievement.</li> </ol>
<p align="center"><b>4</b> <b>Creating Improvement Goals and Plans</b></p>	<ol style="list-style-type: none"> <li>1. Define/affirm mission, vision, and beliefs.</li> <li>2. Define the results for student learning.</li> <li>3. Determine school improvement goals.</li> <li>4. Become knowledgeable about research-based, best practices and correlate them to current practices.</li> <li>5. Create an implementation plan including objectives, timeline, expectations, and monitoring and adjustment strategies.</li> <li>6. Allocate and acquire resources.</li> </ol>
<p align="center"><b>5</b> <b>Preparing to Implement a Plan</b></p>	<ol style="list-style-type: none"> <li>1. Participate in needed/desired professional development.</li> <li>2. Create units, lessons, resources, assessments, and student and teacher support systems to use during implementation.</li> </ol>
<p align="center"><b>6</b> <b>Implementing Plans, Monitoring Progress, and Making Adjustments</b></p>	<ol style="list-style-type: none"> <li>1. Take decisive actions to increase student achievement.</li> <li>2. Monitor implementation by discussing progress regularly using collaborative protocols.</li> <li>3. Make necessary changes.</li> <li>4. Determine what individuals and the team are learning.</li> </ol>
<p align="center"><b>7</b> <b>Evaluating and Celebrating Progress</b></p>	<ol style="list-style-type: none"> <li>1. Determine what the team is learning.</li> <li>2. Recognize and "radically" celebrate progress.</li> <li>3. Continue to make adjustments and problem solve.</li> <li>4. Repeat the cycle by selecting new areas of needed/desired improvement.</li> </ol>

<b>1</b>	<b>Preparing Your Team</b>
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- Meeting in professional teams (job, content, grade-alike, and interdisciplinary) . . .**
1. reinforces attention to a school improvement focus.
  2. provides opportunities to focus on improvement targets and core problems.
  3. provides opportunities to determine the impact of professional development.
  4. stimulates collegial conversation and a desire for continuous improvement
  5. provides more plausible interventions.
  6. deepens understanding about what is really going on at the school.
  7. expands leadership capacity in the school to include teacher leaders.
  8. provides all school staff with a broader view of the learning environment.
  9. provides opportunities for focused, reflective, and collaborative professional learning.
  10. helps determine real student and teacher needs in the classroom.

**PROFESSIONAL TEAM NORMS AND COMMITMENTS**

WHEN ESTABLISHING NORMS, CONSIDER:	PROPOSED NORMS AND COMMITMENTS:
<b>TIME</b> •When do we meet? •Will we set a beginning and ending time? •Will we start and end on time?	<b>WE WILL START THE MEETING WITH ALL MEMBERS PRESENT AT _____</b> <b>WE WILL REMAIN IN THE MEETING</b> until it ends at _____.
<b>LISTENING</b> •How will we encourage listening? •How will we discourage interrupting?	<b>WE WILL INVITE AND WELCOME</b> the contributions of every member and listen to each other.
<b>CONFIDENTIALITY</b> •Will the meetings be open? •Will what we say in the meeting be held in confidence? •What can be said after the meeting?	<b>WE WILL KEEP CONFIDENTIAL</b> our discussions, comments, and deliberations with the exceptions of required meeting minutes.
<b>DECISION MAKING</b> •How will we make decisions? •Are we an advisory or a decision-making body? •Will we reach decisions by consensus? •How will we deal with conflicts?	<b>WE WILL WORK TOGETHER</b> as a community that values consensus rather than majority rule. <b>WE WILL BE RESPONSIBLE</b> for examining all points of view before a consensus is accepted. <b>WE WILL BE GUIDED BY</b> the school mission, vision, parameters, policies, and procedures.
<b>PARTICIPATION</b> •How will we encourage everyone's participation? •Will we have an attendance policy?	<b>WE WILL BE INVOLVED</b> to our individual level of comfort with a goal of balanced participation.
<b>EXPECTATIONS</b> •What do we expect from members? •Are there requirements for participation?	<b>WE WILL BE FULLY "PRESENT"</b> at the meeting by becoming familiar with materials before we arrive and by being attentive to behaviors which affect physical and mental engagement. <b>WE WILL CREATE AN AGENDA</b> in collaboration with our supervisor and submit minutes from the meetings. <b>WE WILL ENGAGE IN GROUP ACTIVITIES</b> that will focus on increasing student achievement.
<b>ATMOSPHERE/CLIMATE</b>	<b>WE WILL OPERATE</b> in a collegial and friendly atmosphere. <b>WE WILL BE RESPONSIBLE</b> for airing disagreements during the meeting rather than carrying those disagreements outside the meeting.

*Source: Keys to successful meetings by Stephanie Hirsh, Ann Delehant, and Sherry Sparks. Oxford, Ohio: National Staff Development Council, 1994.*

**Six Roles for Data**

1. Improving decision making
2. Describing processes, practices, progress
3. Examining belief systems
4. Mobilizing for action
5. Monitoring implementation of changes
6. Accountability

Johnson, Ruth S (1996). *Setting our sights: Measuring equity in school change*. Los Angeles, CA: Achievement Council.

<b>Student Achievement/Discipline Data</b>	<b>Demographic Data</b>
<p>This type of data can include such items as the following:</p> <ul style="list-style-type: none"> <li>•report card grades</li> <li>•performance assessments and portfolios</li> <li>•Ds and Fs list</li> <li>•school/district standardized norm-referenced tests</li> <li>•state tests</li> <li>•observations of student performance</li> <li>•student work artifacts</li> <li>•criterion-referenced tests</li> <li>•course enrollments (e.g., advanced placement courses, honors classes, core curriculum etc.)</li> <li>•graduation, retention, and dropout rates</li> <li>•post-high school choices (e.g., college attendance, military, work)</li> <li>•discipline referral data</li> <li>•attendance rates</li> </ul>	<p>Demographic data can include such items as the following:</p> <ul style="list-style-type: none"> <li>•enrollment</li> <li>•grade level</li> <li>•attendance and tardiness patterns</li> <li>•ethnicity</li> <li>•gender</li> <li>•home background</li> <li>•language proficiency</li> <li>•mobility rate</li> <li>•disability type or health needs</li> <li>•socio-economic status</li> </ul> <p>Information about the parents and community can include:</p> <ul style="list-style-type: none"> <li>•parent and community involvement</li> <li>•percentage of residents with school-age children</li> <li>•economic conditions</li> <li>•level of education</li> <li>•ethnicity</li> <li>•organizations availability and capacity to support education</li> </ul> <p>A useful school demographic profile will also include accurate and thorough information about the staff. This also includes, but is not limited to the following:</p> <ul style="list-style-type: none"> <li>•number of employees in all employee categories</li> <li>•years of experience</li> <li>•preparation and advanced degrees</li> <li>•age</li> <li>•mobility</li> <li>•gender</li> <li>•ethnicity</li> <li>•language proficiency</li> </ul>

Organizational Data	Stakeholder Data
<ul style="list-style-type: none"> <li>•curriculum maps</li> <li>•staffing information (all employee groups)</li> <li>•budget information</li> <li>•professional development initiatives</li> <li>•classroom practices inventories</li> <li>•interventions and services inventory</li> <li>•facilities inventory</li> <li>•mission, vision, beliefs, and values</li> <li>•strategic goals and plans</li> <li>•resources inventory</li> </ul>	<ul style="list-style-type: none"> <li>•Perceptions inventories related to parents, community, students, and teachers can include:</li> <li>•value of the educational program</li> <li>•expectations and satisfaction related to . . . achievement, school facilities, accessibility to resources, safe and effective environment</li> <li>•student morale inventory</li> <li>•teacher morale inventory</li> <li>•leadership credibility inventory</li> <li>•satisfaction related to professional development</li> </ul>

Graphic Representations of Data	Color-coding or Highlighting								
<ol style="list-style-type: none"> <li>1. <b>Pie charts</b> are best used to display parts or portions of the whole. Try not to use more than six segments. They do not show changes over time.</li> <li>2. <b>Bar graphs</b> are used to compare things between different groups or to track changes over time. However, when trying to measure change over time, bar graphs are best when the changes are larger.</li> <li>3. <b>Line graphs</b> are used to track changes over short and long periods of time. When smaller changes exist, line graphs are better to use than bar graphs. Line graphs can also be used to compare changes over the same period of time for more than one group. They enable the viewer to make projections related to trends and patterns.</li> <li>4. <b>Scatter plots</b> are used to show how much one variable is affected by another variable and usually consist of a large body of data. The closer the data points come to making a straight line, the higher the correlation between the two variables or the stronger the relationship. The x-axis is used to measure one event (or variable) and the y-axis is used to measure the other. If both variables increase at the same time, they have a positive relationship. If one variable decreases while the other increases, they have a negative relationship. Sometimes the variables don't follow any pattern and have no relationship.</li> </ol> <p>Darnell, B. (2002). Guide for instructional leaders: Leading instructional environment assessment. Alexandria, VA: Association for Supervision and Curriculum Development.</p>	<p>Color-coding or highlighting is used to identify areas where you are interpreting patterns, insight, trends, and other observations.</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 10%;">Pink</td> <td>Advanced/Above Expectations</td> </tr> <tr> <td>Green</td> <td>Proficient/Meets Expectations/ At Grade Level</td> </tr> <tr> <td>Yellow</td> <td>Below Proficient/Does Not Quite Meet Expectations Needs additional intervention</td> </tr> <tr> <td>Red</td> <td>Below Expectations/Minimal Proficiency Needs substantial intervention</td> </tr> </table> <p style="text-align: center;"><b>Types of Data Analysis</b></p> <ol style="list-style-type: none"> <li><b>1. Snapshot Analysis</b> This form of analysis focuses on the examination of the spread or distribution of the data. For example, schools may want to examine the percent of students who meet, exceed, or did not meet target standards in a curricular domain.</li> <li><b>2. Longitudinal Analysis</b> Longitudinal analysis focuses on student achievement results over time. Schools can examine student reading performance for the last three years. They can look for trends or patterns of different groups of students for the same grade level over time or may want to examine a cohort group's progress.</li> <li><b>3. Multiple Variable Analysis</b> This type of data analysis permits schools to examine differences among groups or variables. For example, schools can determine how students with learning disabilities performed in science compared to two years ago.</li> <li><b>4. Interaction Analysis</b> This form of analysis is used to examine the relationship between two variables. Schools can discover if student achievement in reading increases for students who read a specified number of books or if math exam results and grade point average are related positively.</li> </ol>	Pink	Advanced/Above Expectations	Green	Proficient/Meets Expectations/ At Grade Level	Yellow	Below Proficient/Does Not Quite Meet Expectations Needs additional intervention	Red	Below Expectations/Minimal Proficiency Needs substantial intervention
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### Analyzing Data

#### Critical Questions

1. What is the whole picture?
2. What is the school doing to enable students to make progress?
3. Why is performance the way it is?

#### Focus Questions

1. What are the areas of greatest student academic need you will focus on at the school, in your grade or department?
2. What programs/processes/practices will be utilized (and what will be eliminated) in order to implement and maintain the focus?

#### Igniting and Inviting Conversations

1. Define the purpose of the meeting and communicate the time limit (40-60 minutes or less is ideal for a first session).
2. Focus on a target of student achievement and begin by asking participants to brainstorm evidence of students' strengths. Use a go-around to list the participants' responses.
3. Use the fishbone strategy (see below) to silently brainstorm factors creating low achievement. Use a go-around to list the participants' responses.
4. Identify the most influential factors in each category (curriculum, teacher, organization, learner, parent).
5. Recognize thoughtful analysis and schedule a second meeting.

### Mining Deeper: Analysis and Interpretation of Data

#### Student Achievement Data Analysis--Looking at the Data

1. What observations can we make about this data?
2. What does the "all students" data tell us?
3. What do we see when we compare scores within a subgroup?
4. What do we see when we compare scores among subgroups?
5. What do we see when we compare results among the assessments?
6. What trends do we see in this data?

#### Outcome Data Analysis--Determining What the Data Really Means

1. What data draws our attention?
2. What is unique or unexpected about the data?
3. What preliminary conclusions or generalizations can we draw about this data?
4. What questions are raised by this data?
5. What additional outcome data would we like to have?
6. What other kinds of data would we like to have?

San Diego City Schools: School Self Study Process

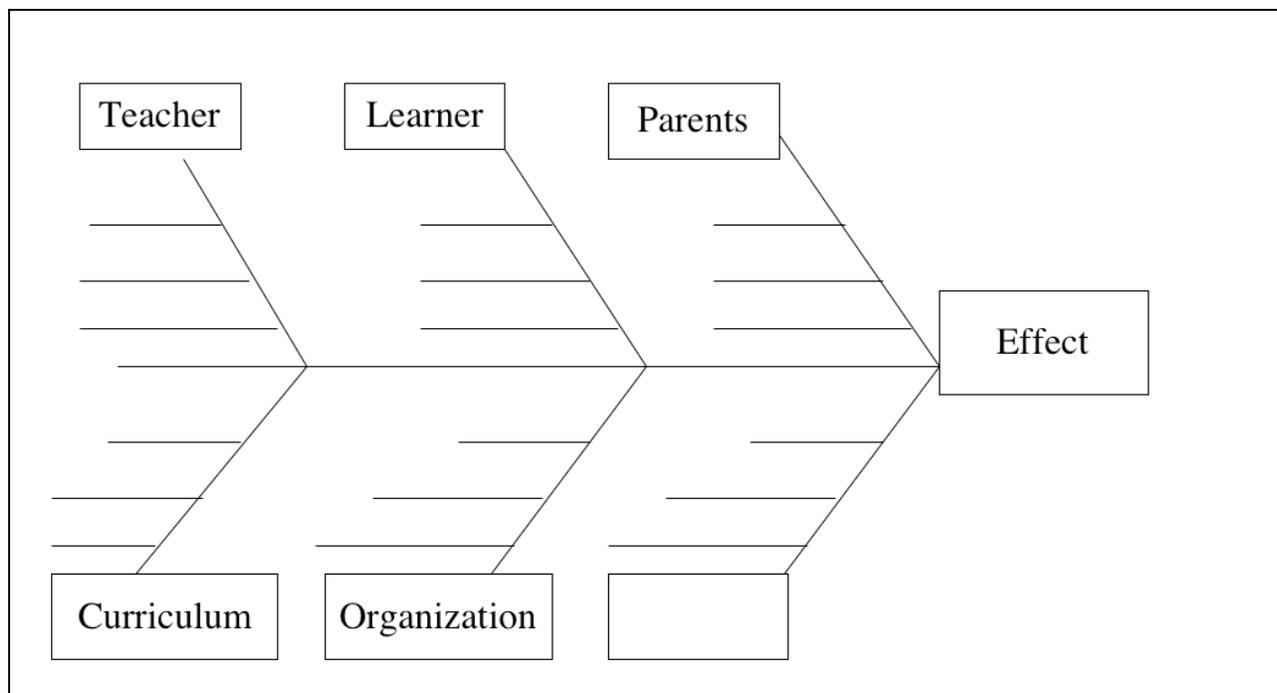
Observations	Hypotheses	Connections
What patterns, problems, or challenges do we observe?	What do we do that might contribute to these patterns?	What could we do in the classroom or school that might improve these data?

### Looking at Classroom Data

Use Assessment Results to Guide Instruction and Increase Achievement
<ol style="list-style-type: none"> <li>1. Tag your assessment items and tasks to make sure that you are assessing essential content and skills comprehensively.</li> <li>2. Item analyze the assessment results to determine the strengths and needs of students related to essential content and skills.</li> <li>3. Use the assessment data to make informed decisions about subsequent spiraling of content and skills as well as re-teaching standards that have not been mastered.</li> </ol>

Learning Targets/Objectives	Type of Thinking/ Comprehension/Task	Student Results

### Fishbone Analysis: Contributing Factors



### Discovering What Is Really Going On in Reading

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. How do student outcomes differ by demographics, programs, and schools?</li> <li>2. How do the reading levels of our students compare with those of students across the state? District? Area?</li> <li>3. How many of our students read below grade level?</li> <li>4. What is the longitudinal progress of a specific cohort of students?</li> <li>5. What are the characteristics of students who achieve proficiency and of those who do not?</li> <li>6. Where are we making the most progress in closing the achievement gaps?</li> <li>7. How do absence and mobility affect assessment results?</li> <li>8. How do student grades correlate with state assessment results and other measures?</li> </ol> | <ol style="list-style-type: none"> <li>9. To what extent have specific programs, interventions, and services improved outcomes?</li> <li>10. Will improving students' reading skills positively affect their performance in classroom work?</li> <li>11. What are we doing to support accelerated growth in reading for students below grade level?</li> <li>12. What are we doing to support accelerated growth in reading for students who are performing in the average category?</li> <li>13. What are we doing to support growth in reading for students who are performing above average?</li> </ol> |
|---|--|

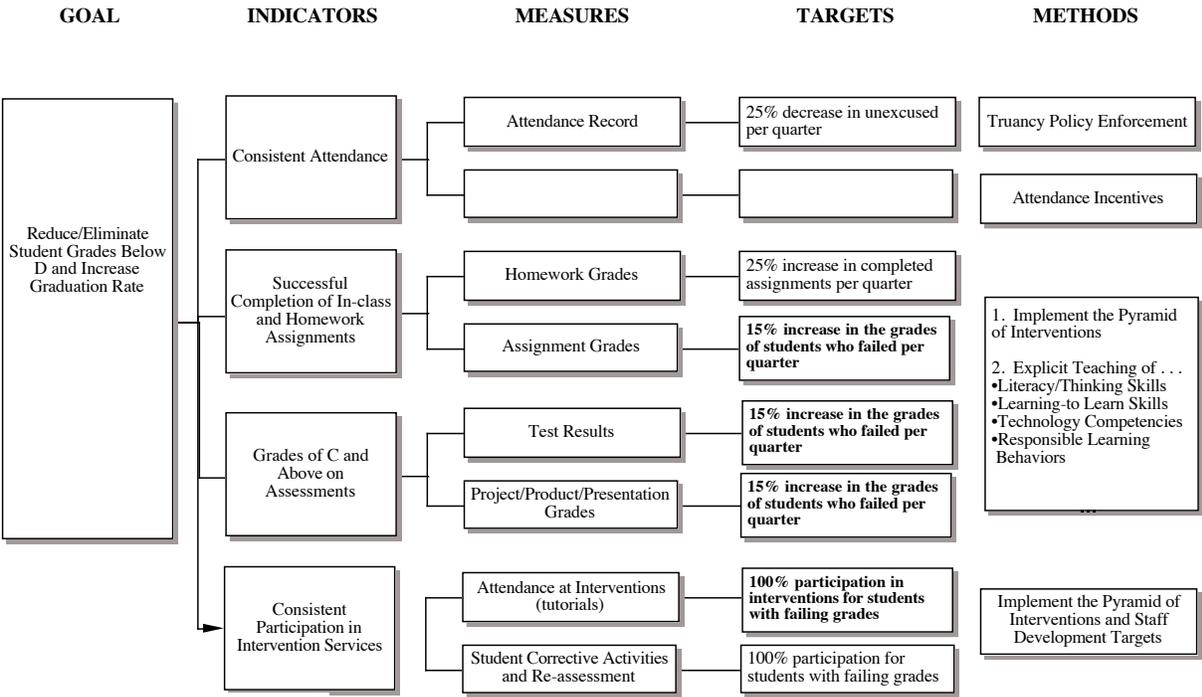
**4**    **Creating Improvement Goals and Plans**

**E**stablish **SMART** improvement goals.

S= Strategic and Specific  
M= Measurable  
A= Attainable  
R= Results-based  
T= Time-bound

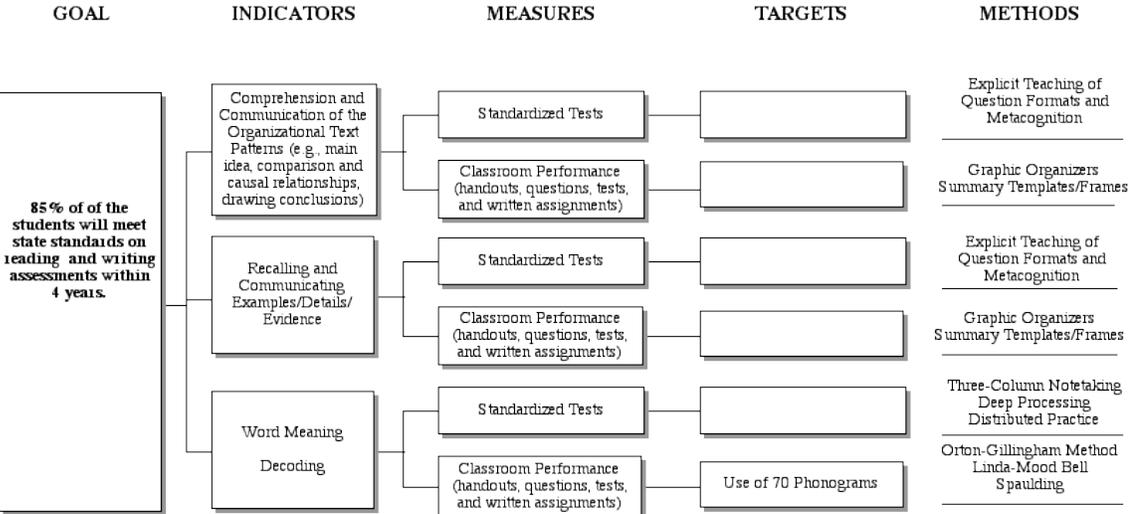
The Power of SMART Goals: Using Goals to Improve Student Learning (O'Neill & Conzemius, 2006)

**SMART Goal for Reducing/Eliminating Failing Grades**



Dr. Bobb Darnell [bobbdarnell@mac.com](mailto:bobbdarnell@mac.com) 6/08

**The Tree Diagram:  
Helping Teams Make Their Goals SMARTer  
Literacy SMART Goal**



**The Science of Teaching and Learning: Research Findings**

<p align="center"><b>Classroom Instruction Research</b></p> <table border="0"> <thead> <tr> <th></th> <th align="right"><b>Avg. Percentile Increase</b></th> </tr> </thead> <tbody> <tr><td>1. Identifying Similarities and Differences</td><td align="right">45</td></tr> <tr><td>2. Summarizing and note taking</td><td align="right">34</td></tr> <tr><td>3. Reinforcing effort and providing recognition</td><td align="right">29</td></tr> <tr><td>4. Homework and practice</td><td align="right">28</td></tr> <tr><td>5. Non-linguistic representations</td><td align="right">27</td></tr> <tr><td>6. Cooperative Learning</td><td align="right">27</td></tr> <tr><td>7. Setting objectives and feedback</td><td align="right">23</td></tr> <tr><td>8. Generating and testing hypotheses</td><td align="right">23</td></tr> <tr><td>9. Question, cues, and advanced organizers</td><td align="right">22</td></tr> </tbody> </table> <p>Marzano, Robert, Pickering, Debra, and Pollock, Jane. Classroom Instruction That Works: Research-based Strategies for Increasing Student Achievement. ASCD (2001)</p>		<b>Avg. Percentile Increase</b>	1. Identifying Similarities and Differences	45	2. Summarizing and note taking	34	3. Reinforcing effort and providing recognition	29	4. Homework and practice	28	5. Non-linguistic representations	27	6. Cooperative Learning	27	7. Setting objectives and feedback	23	8. Generating and testing hypotheses	23	9. Question, cues, and advanced organizers	22	<p align="center"><b>Factors Influencing Achievement</b></p> <p><b>School Factors</b></p> <ol style="list-style-type: none"> <li>1. Guaranteed and Viable Curriculum</li> <li>2. Challenging Goals and Effective Feedback</li> <li>3. Parent and Community Involvement</li> <li>4. Safe and Orderly Environment</li> <li>5. Collegiality and Professionalism</li> </ol> <p><b>Teacher Factors</b></p> <ol style="list-style-type: none"> <li>6. Instructional Strategies</li> <li>7. Classroom Management</li> <li>8. Classroom Curriculum Design</li> </ol> <p><b>Student Factors</b></p> <ol style="list-style-type: none"> <li>9. Home Environment</li> <li>10. Learned Intelligence/Background Information</li> <li>11. Motivation</li> </ol> <p>Marzano, Robert, J. What Works in Schools: Translating Research into Action. ASCD (2003)</p>
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<p align="center"><b>Research-Based Practices for Improving Student Achievement</b></p> <ol style="list-style-type: none"> <li>1. Encourage parents to stimulate their children's intellectual development.</li> <li>2. Require and grade homework.</li> <li>3. Focus students on educational goals.</li> <li>4. Incorporate direct teaching that exhibits key features and systemic steps.</li> <li>5. Utilize advance organizers that show students relationships between past learning and present learning.</li> <li>6. Teach students multiple learning strategies that promote metacognition by providing modeling, guided practice, and application.</li> <li>7. Utilize mastery learning techniques for teaching subject matter.</li> <li>8. Incorporate cooperative learning.</li> </ol> <p>Walberg, (1995) In Cawelti, G. Handbook of Research on Improving Student Achievement. Arlington, VA: Educational Research Service</p>	<p align="center"><b>Effective Schools Research: Factors Influencing Student Achievement</b></p> <ol style="list-style-type: none"> <li>1. Strong Instructional Leadership and Planning</li> <li>2. Clear Instructional Focus</li> <li>3. Positive School Learning Climate</li> <li>4. High Expectations for Success and Student Time on Task</li> <li>5. Monitoring of Student Progress/Achievement</li> <li>6. Clear and Focused Mission</li> <li>7. Parent/Community Involvement and Relations</li> </ol> <p>Larry Lezotte—Effective Schools Correlates (1986)</p>																				
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Compiled by: Dr. Bobb Darnell bobbdarnell@mac.com 11/08

## Improving Reading Performance

Target Indicators	Instructional Strategies	Interventions
<p><b>Comprehension Skills--STANDARD 1C</b> Comprehend a broad range of reading materials.</p> <ol style="list-style-type: none"> <li>1. Main Idea</li> <li>2. Significant Details</li> <li>3. Sequential/Order Relationships</li> <li>4. Comparison Relationships</li> <li>5. Cause and Effect Relationships</li> <li>6. Understanding and Using Words</li> <li>7. Generalizations and Drawing Conclusions</li> <li>8. Problem-Solution Relationships</li> <li>9. Interpreting Instructions</li> <li>10. Author's Purpose and Techniques</li> </ol> <p><b>Literary Elements--STANDARD 2A</b> Understand how literary elements and techniques are used to convey meaning.</p> <p><b>STANDARD 2B</b> Read and interpret a variety of literary works.</p> <p><b>Word Meaning/Broad Vocabulary--STANDARD 1A</b> Apply word analysis and vocabulary skills to comprehend selections.</p> <p><b>Reading Fluency and Efficient Reading (i.e., speed of reading)--STANDARD 1B</b> Apply reading strategies to improve understanding and fluency.</p> <p><b>Reading Strategies--STANDARD 1B</b> Apply reading strategies to improve understanding and fluency.</p> <ol style="list-style-type: none"> <li>1. activating and establishing prior knowledge</li> <li>2. determining purpose for reading</li> <li>3. making and verifying predictions</li> <li>4. identifying probable outcomes or actions</li> <li>5. identifying the structure and format of text</li> <li>6. using illustrations to help understand text</li> <li>7. relating passages to other readings</li> <li>8. using graphic organizers to create meaning</li> <li>9. locating specific information in text</li> </ol>	<p><b>Comprehension Strategies</b></p> <ol style="list-style-type: none"> <li>1. Monitoring Comprehension</li> <li>2. Metacognition</li> <li>3. Graphic and semantic organizers</li> <li>4. Answering questions</li> <li>5. Generating questions</li> <li>6. Recognizing story structure</li> <li>7. Summarizing and extended written responses to reading</li> <li>8. Reciprocal teaching</li> <li>9. Cooperative learning</li> <li>10. Mental Imagery</li> </ol> <p><b>Literary Elements and Response to Literature</b></p> <ol style="list-style-type: none"> <li>1. Providing extensive reading of many kinds of materials</li> <li>2. Assuring equity of curriculum delivery and opportunity to read literature</li> <li>3. Using guided, engaging, interactive, and analytical classroom discussion</li> <li>4. Extend background knowledge and experience</li> </ol> <p><b>Vocabulary</b></p> <ol style="list-style-type: none"> <li>1. Explicitly teaching vocabulary in context.</li> <li>2. Explicitly teaching roots, prefixes, and suffixes</li> <li>3. Using Orton-Gilligham-based phoneme instruction</li> </ol> <p><b>Reading Fluency</b></p> <ol style="list-style-type: none"> <li>1. Using timed readings in content area books and reading sample passages</li> <li>2. Providing extensive reading of many kinds of materials</li> </ol> <p><b>Reading Strategies</b></p> <ol style="list-style-type: none"> <li>1. Modeling and guided practice</li> <li>2. Creating opportunities for think-alouds</li> <li>3. Explicitly teaching metacognition and other reading strategies</li> </ol>	<ol style="list-style-type: none"> <li>1. One-on-one tutoring</li> <li>2. Parent training and involvement</li> <li>3. After-school program</li> <li>4. Curriculum alignment</li> <li>5. Computer-Assisted reading management Program</li> <li>6. At-home computer use</li> <li>7. Content area staff development (e.g., differentiation, assessment design, reading, writing, technology integration)</li> <li>8. Staff development for co-teachers.</li> <li>9. Coordination of teaching and support for special ed and regular ed</li> <li>10. Blocking more time for intervention programs</li> <li>11. Early intervention</li> <li>12. Appropriate formative and summative assessment of benchmark skills and strategies</li> </ol> <p>Sources: Walberg, (1995) In Cawelti, G. Handbook of Research on Improving Student Achievement. Arlington, VA: Educational Research Service</p> <p>National Reading Panel (2000)</p>

## Improving Math Performance

Target Indicators	Instructional Strategies	Interventions
<p><b>Number sense --State Goal 6</b> Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.</p> <p><b>Measurement--State Goal 7</b> Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.</p> <p><b>Algebra--State Goal 8</b> Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.</p> <p><b>Geometry--State Goal 9</b> Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.</p> <p><b>Data Analysis, Statistics, and Probability--State Goal 10</b> Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.</p>	<ol style="list-style-type: none"> <li>1. Provide immediate feedback about progress (especially via computers).</li> <li>2. Modeling and guided practice using tightly sequenced forms of explicit instruction</li> <li>3. Explicit instruction in the use problem representation and problem solving strategies</li> <li>4. Small group, cooperative learning, and peer tutoring</li> <li>5. Providing teachers with regular updates on student performance in terms of state standards</li> <li>6. Teaching prerequisite skills regarding number sense</li> <li>7. Providing direct instruction in self-monitoring procedures</li> <li>8. Using graphic organizers</li> <li>9. Explicit teaching summarizing and writing extended responses</li> <li>10. Incorporating manipulatives and concrete materials and authentic situations</li> <li>11. Teaching conceptual knowledge</li> <li>12. Expand math vocabulary through explicit teaching (e.g., notetaking, memory and retrieval strategies, roots, prefixes, and suffixes in mathematics</li> <li>13. Using time math exercises that mirror state and district assessments</li> <li>14. Assuring equity of curriculum delivery and opportunity to learn math</li> <li>15. Creating opportunities for interactive classroom discussion regarding inventive and intuitive problem solving</li> <li>16. Providing opportunities to use calculators</li> </ol> <p>Sources: Walberg, (1995) In Cawelti, G. Handbook of Research on Improving Student Achievement. Arlington, VA: Educational Research Service</p> <p>US Department of Education, The Use of Scientifically Based Research in Education, Working Group Conference, (2002)</p>	<ol style="list-style-type: none"> <li>1. One-on-one tutoring</li> <li>2. Parent training and involvement</li> <li>3. After-school program</li> <li>4. Curriculum alignment</li> <li>5. Computer-Assisted reading management Program</li> <li>6. At-home computer use</li> <li>7. Content area staff development (e.g., assessment design, differentiation, explicit math instruction, vocabulary development, technology integration)</li> <li>8. Staff development for co-teachers.</li> <li>9. Coordination of teaching and support for special ed and regular ed</li> <li>10. Blocking more time for intervention programs</li> <li>11. Early intervention</li> <li>12. Appropriate formative and summative assessment of benchmark skills, strategies, and knowledge</li> </ol>

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<b>5</b>	<b>Preparing to Implement a Plan</b>
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What works in staff development?	Professional Development Delivery Systems
<ul style="list-style-type: none"> <li>•Results-driven</li> <li>•Standards-based</li> <li>•Job-embedded</li> <li>•Content rich</li> <li>•Entire school</li> <li>•Differentiated for grade, content, experience, etc.</li> </ul> <ol style="list-style-type: none"> <li>1. Create and maintain on-going programs.</li> <li>2. Use time for knowledge acquisition and guided practice for skill development.</li> <li>3. Provide coaching (peer and supervisor).</li> <li>4. Create usable products with job-alikes.</li> <li>5. Increase access to colleagues.</li> <li>6. Recognize and support implementation and progress.</li> <li>7. Staff choose personal learning goals.</li> <li>8. Link programs to personal needs and school improvement goals.</li> <li>9. Build in monitoring/evaluation.               <ul style="list-style-type: none"> <li>•program evaluation</li> <li>•self-assessment</li> <li>•department head/supervisor coaching</li> </ul> </li> </ol>	<ul style="list-style-type: none"> <li>•action research</li> <li>•assessment</li> <li>•case studies</li> <li>•critical friend group</li> <li>•curriculum development</li> <li>•data for analyzing schools</li> <li>•examining student work</li> <li>•journaling</li> <li>•immersion</li> <li>•lesson study</li> <li>•listening to students</li> <li>•mentoring</li> <li>•networks</li> <li>•peer coaching</li> <li>•portfolios</li> <li>•school coaching</li> <li>•shadowing students</li> <li>•study groups</li> <li>•training of trainers</li> <li>•tuning protocols</li> <li>•walk-throughs</li> <li>•training on specific strategies and approaches</li> </ul> <p>Journal of Staff Development on Powerful Designs- -Summer 1999. Powerful Designs. Fall 2003.</p>

Our team/department/school needs to learn/do to prepare for improving student learning . . .	I need to learn . . .

**Student Work Gallery 1:  
Looking At Student Work**

View the student work of your colleagues for 3 minutes.

1. What were the qualities of student work that made it an excellent product? (1 minute per participant)
2. What is an insight you gained about the student work you brought? (1 minute per participant)
3. What did you learn or what insights did you gain from looking at student work? (1 minute per participant)

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**Student Work Gallery 2:  
Looking At Student Work**

View the student work of your colleagues for 3 minutes.

1. What do you wonder about or what questions does the work your colleagues brought raise for you? (1 minute of uninterrupted time per participant)
2. What will you do differently or what change in practice will you make to improve student skills related to the use of specific graphic organizers and summaries? (1 minute of uninterrupted time per participant)

**Success Analysis Activity  
(2 minutes of uninterrupted time for each  
person to speak about questions 1-3)**

1. The purpose of the lesson was to have students acquire the following concepts and skills.
2. During the time when the students were completing their graphic organizers and/or summaries, I observed the following . . . (e.g., engagement, understanding, behavior)

Use the student work you brought to illustrate the progress and challenges, and achievement gaps evident in the student work.

3. In what way(s) is the quality of this work different from the first samples you saw at the beginning of the reading/thinking improvement initiative? What promising results are you witnessing?

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**Problem/Dilemma Protocol**

1. Each participant in the trio takes 1 minute to review the poorest quality work that they brought with them or others that they recall from their students. They complete the following sentence

A problem that students continue to illustrate in their graphic organizers or summaries is . . .

2. Each person presents his/her dilemma for one minute.
3. Group members listen and ask questions or make suggestions about the problem/dilemma.
4. The person who originally presented their dilemma then finishes the sentence below.

An action that I can/will take to increase students achievement related to reading, writing, and thinking will be to . . .

5. Repeat 1-4 for each of the 3 group members.

<b>7</b>	<b>Evaluating Progress</b>
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### Assessing the Impact of Professional Development

Types of Change for Students and Teachers	Definition
<b>Knowledge (understand)</b>	Conceptual understanding of information, theories, principles, and research
<b>Attitude (believe)</b>	Beliefs about the value of particular information or strategies.
<b>Skills (employ)</b>	Strategies and processes to apply knowledge
<b>Aspiration (desire)</b>	Desires, or internal motivation, to engage in a particular practice
<b>Behavior (behave regularly)</b>	Consistent application of knowledge and skills

Source: Killion, Joellen. *Assessing Impact: Evaluating Staff Development 2002*. Oxford: Ohio, NSDC.

<b>IDEAL Problem Solving</b>	
<p><b>I</b> dentify the dimensions of the problem.</p> <p><b>D</b> etermine alternative solutions.</p> <p><b>E</b> stablish standards and evaluate each alternative solution.</p> <p><b>A</b> dopt and implement a plan.</p> <p><b>L</b> ook back, evaluate, and adjust.</p>	<ol style="list-style-type: none"> <li>1. (I) Identify the problem that needs to be solved.</li> <li>2. (I) What are the causes of this problem?</li> <li>3. (I) What positive results do you expect will occur when you solve this problem?</li> <li>4. (D) What are some possible ways to solve this problem?</li> <li>5. (E) Which alternative solution(s) do you choose to solve the problem?</li> <li>6. (A) What obstacles, if any, do you have to overcome in order to solve this problem?</li> <li>7. (A) What is your plan for applying the solution you chose?</li> <li>8. (L) Do you predict that this plan will work? Why?</li> <li>9. (L) When will you evaluate your solution strategy to make sure it is working?</li> </ol>

## Customize Recognition of Progress and “Radically Celebrate”

<ol style="list-style-type: none"> <li>1. Look colleagues in the eye and say thank you.</li> <li>2. Listen to your colleague with sincere intention.</li> <li>3. Shake hands, give high fives, or thumbs up.</li> <li>4. Ask teachers how they want to be recognized.</li> <li>5. Find out hobbies, interests, favorite sports, vacations, etc. and other things.</li> <li>6. Be accessible and pay attention to colleagues.</li> <li>7. Tell colleagues about additional training and conferences and advocate for support.</li> <li>8. Close meetings with celebrations.</li> <li>9. Link recognition to bigger organization and unit department goals.</li> <li>10. Create a written list of things you would recognize and begin to follow it.</li> <li>11. Focus on strengths.</li> <li>12. Identify the last time you recognized individuals and increase the recognition if you have forgotten.</li> <li>13. Be specific about why you are recognizing each other.</li> <li>14. Recognize in a timely fashion. Don't wait too long.</li> <li>15. Follow up group recognition with individual recognition.</li> <li>16. Don't get in a rut with recognition. Diversify.</li> <li>17. Recognize the behind the scenes people too (e.g., secretaries, mail person, etc.)</li> <li>18. Write the word recognition in your calendar every day and act on it.</li> <li>19. Give certificates of recognition.</li> <li>20. Bring visiting teachers to meet colleagues.</li> <li>21. Recognize in school newsletters.</li> <li>22. Leave recognition voice mails.</li> <li>23. Tell someone how proud you are of him/her.</li> <li>24. Post positive results (e.g., charts, graphs, other work).</li> <li>25. Notify the family of recognition.</li> <li>26. Send a thank you to a family member for sacrificing time with the employee to work hard.</li> <li>27. Buy a cake, cookie, candy for someone to recognize.</li> </ol>	<ol style="list-style-type: none"> <li>28. Deliver a balloon or bouquet to a colleague.</li> <li>29. Send an email recognition and copy everyone in the department.</li> <li>30. Ask positive performers to be teachers or mentors.</li> <li>31. Invite a VIP in the district to come visit high performers.</li> <li>32. Buy a work-enhancing product and give it as a recognition of high performance and promise.</li> <li>33. Give a new mug.</li> <li>34. Keep a supply of "thank you, you did a good job" notes on hand and distribute them accordingly.</li> <li>35. Go to lunch with colleagues. You can even pay.</li> <li>36. Use exxxxxtra special exxxxxxxxageted words in informal written communications to recognize OUTSTANDING results and grrrrrrreat performance.</li> <li>37. Ask colleagues what they think. Ask for advice about a new program or idea you are thinking about.</li> <li>38. Send an e-card to recognize accomplishment.</li> <li>39. Take pictures and post them.</li> <li>40. Help a colleague on a big project.</li> <li>41. Ask a colleagues to be in charge of something.</li> <li>42. Give a paid subscription to a professional magazine or membership.</li> <li>43. Deliver someone's early morning coffee.</li> <li>44. Send recognition postcards.</li> <li>45. Award gold stars on a colleague's work.</li> <li>46. Create a food break for you team who deserves recognition.</li> <li>47. Visit a colleague the day they return from a vacation or absence and let them know you missed him/her.</li> <li>48. Give a mini-scholarship to a conference or personal development activity.</li> <li>49. Make up another recognition idea.</li> </ol>
Adapted from (Harvey, 2001)	