Making Collective Sense of Data: Item and Error Analysis

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Bangkok, Thailand
5 April 2014

Session Objectives: Participants Will Be Able To...

- Describe critical conditions that facilitate collaborative inquiry in schools
- Engage in Data-Driven Dialogue with item-level data
- Apply a protocol for error analysis
- Connect data use to instructional improvement
- Apply an expanded repertoire of data and dialogue tools

Agenda

- Theory of Action: Connecting Data to Results
- Simulation: Data-Driven Dialogue with Item and Error Analysis
- Taking F-I-R-M-E Action

Materials

- PowerPoint Slides
- Sample Data
- Data Tools
- Resources/References
- Background Readings on Feedback and Reteaching

Multiple Hats

- Learner
- Facilitator/coach
- Support system
Concept Map
Making Collective Sense of Data

Date and Error Analysis

Feedback Environments Recurring, Negotiating, Improving Meaning Extension of current characterization

data and dialog tools

Unlocking the power of collaborative inquiry to improve teaching and learning

Table Talk
How are you building the bridge between data and results in your school? What is the bridge made of?

Table Talk
How are you building the bridge between data and results in your school? What is the bridge made of?

The Data Divide

#1. Moral Resolve
“Get Ethical Before You Get Technical”

#2. Collaborative Inquiry
“School Improvement Is a Team Sport”

#2. Collaborative Inquiry
“School Improvement Is a Team Sport”

#3. Leadership and Capacity
“Learning Is the Work”

- Moral Resolve
- Instructional Improvement
- Frequent Data Use
- Structured Collaboration
- Leadership & Capacity

Capacity Definition
Developing the collective ability—knowledge, skills, motivation, resources—to act together to improve instruction linked to student needs and achievement.

— Adapted from Michael Fuller, 2011

#4. Structured Collaboration
“Freedom Within Form”

- Moral Resolve
- Instructional Improvement
- Frequent Data Use
- Structured Collaboration
- Leadership & Capacity

Capacity Definition
Developing the collective ability—knowledge, skills, motivation, resources—to act together to improve instruction linked to student needs and achievement.

— Adapted from Michael Fullan, 2011

#5. Frequent Data Use
“Data in Your Daily Diet”

- Moral Resolve
- Instructional Improvement
- Frequent Data Use
- Structured Collaboration
- Leadership & Capacity

Capacity Definition
Developing the collective ability—knowledge, skills, motivation, resources—to act together to improve instruction linked to student needs and achievement.

— Adapted from Michael Fullan, 2011

#6. Instructional Improvement
“Nothing Matters More Than Teaching”

- Moral Resolve
- Instructional Improvement
- Frequent Data Use
- Structured Collaboration
- Leadership & Capacity

Capacity Definition
Developing the collective ability—knowledge, skills, motivation, resources—to act together to improve instruction linked to student needs and achievement.

— Adapted from Michael Fullan, 2011

Formative Assessment Defined
“Students and teachers partnering to use evidence of understanding to adapt what happens in classrooms minute-by-minute, day-by-day.”

— Dylan Wiliam
Teachology Conference, 2012
Old View of Assessment: What’s Missing?

- Plan
- Teach
- Test
- Move On

New View of Assessment

Plan → Teach → FIRME

- Pre-Assess
- Continuously Assess
- Some Students Learn
- Continuously Assess
- More Students Learn
- FIRME Feedback Investigation
- Reteaching
- Moving On
- Extension
- End-of-Unit Assessment

Most or All Students Learn

#7. Culture
“Good Seeds Grow in Strong Cultures”

Moral Resolve
Collaborative Inquiry
Leadership & Capacity
Structured Collaboration
Frequent Data Use
Instructional Improvement
School Culture/Trust/Equity

Seven Insights into Ensuring that Data Use Leads to Results

1. Moral Resolve: “Get ethical before you get technical.” (Franklin Campbell Jones, personal communication)
2. Collaborative Inquiry: “School improvement is a team sport.”
5. Frequent Data Use: “Data in your daily diet.”
6. Instructional Improvement: ‘Nothing matters more than teaching.’
7. Culture: “Good seeds grow in strong cultures” (Saphier, 1985)

Reflect: What Is Validating of your Own Practice? What New Insights Have You Gained?

Building Blocks of Collaborative Inquiry

Reflect: What Is Validating of your Own Practice? What New Insights Have You Gained?

Building Blocks of Collaborative Inquiry Self-Assessment (Data Tools, p. 2)

Reflect: What Is Validating of your Own Practice? What New Insights Have You Gained?

Building Blocks of Collaborative Inquiry Self-Assessment (Data Tools, p. 2)
Find Your Data Team

• Choose either Grade 6 Mathematics or Grade 4 ELA.
• Sit at the table labeled with your choice.

Choose Group Roles

• Facilitator
  – Facilitate process
  – Include everyone
• Dialogue Monitor
  – Use No-Because sign
  – Monitor four-phase process
• Materials Manager
  – Use one prediction template
  – Wait on data
• Recorder
  – Record team members’ words
  – Abbreviate
  – Write large so all group members can see
• Timekeeper

Item Analysis Definition

• Analyzing student performance on individual test items, including the percentage answered correctly for each item, distractor patterns, and scores on open-response items.

Item Analysis for Number Sense and Operations

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>Standard</th>
<th>School A</th>
<th>School B</th>
<th>School C</th>
<th>School D</th>
<th>Correct Answer</th>
<th>Grade</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>MC</td>
<td>NS</td>
<td>41%</td>
<td>60%</td>
<td>72%</td>
<td>54%</td>
<td>41</td>
<td>5.36</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>MC</td>
<td>NS</td>
<td>92%</td>
<td>89%</td>
<td>90%</td>
<td>95%</td>
<td>77</td>
<td>4.47</td>
<td>20</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>MC</td>
<td>NS</td>
<td>62%</td>
<td>73%</td>
<td>80%</td>
<td>90%</td>
<td>73</td>
<td>4.72</td>
<td>15</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>MC</td>
<td>NS</td>
<td>10%</td>
<td>80%</td>
<td>94%</td>
<td>96%</td>
<td>78</td>
<td>3.41</td>
<td>18</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>OR</td>
<td>NS</td>
<td>85%</td>
<td>89%</td>
<td>90%</td>
<td>95%</td>
<td>93</td>
<td>4.97</td>
<td>25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What does this tell you?
What can you learn/not learn from these data?
Item Analysis Inquiry

- What kinds of items are on the test?
- What specific skills and understandings are our students’ strengths? Which pose difficulties?
- What types of questions do our students perform best on? What types are they most challenged by?
- For which items are students frequently giving the same incorrect answer? Why might that be?
- Why are students missing points on extended-response items?

It’s Not the Test; It’s How It Is Used

“Although a given test may be employed in connection with a summative assessment function, it is possible (if the test is properly crafted) for this very same test to be used also as part of the formative assessment process. In other words, tests, all by themselves, are neither formative nor summative. It is the use to which a given test’s results are put that makes the assessment part of the formative assessment process or, instead, finds it contributing to a summative-assessment decision.”

— Popham, 2013, p. 291

Data-Driven Dialogue (Data Tools, p. 8)


Phase 1: Predict

I predict…
I assume…
I wonder…
I’m expecting to see…

ITEM DATA:
- What items do you think students will do well on?
- What will they have difficulty with?
- What makes you say so?

Item-Level Analysis: Percentage Correct

Phase 1: Predict

Review the test items and relevant standards (Sample Data Handout: Mathematics, pp. 3-8; ELA, pp. 16-22)
- What are your predictions about students’ performance on these items?
- Which items do you think they will do well on?
- Which will they have difficulty with?

Document your predictions on Prediction Template (Sample Data Handout: Mathematics, p. 1; ELA, p. 2)
- Use ONE sheet for the whole group.
- You do not need to agree on predictions.
- Make statements rather than predict percentages.
Sim School: Grade 6 Mathematics, Multiple-Choice Item Results, 2014 – Prediction Template (Sample Data, p. 1)

Patterns, Relations, and Algebra Strand

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>Standard</th>
<th>Prediction</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>MC</td>
<td>6.EE.A.2c</td>
<td>Should do alright, simple algebraic expression</td>
</tr>
<tr>
<td>16</td>
<td>MC</td>
<td>6.EE.C.9</td>
<td>6.RP.A.3b</td>
</tr>
<tr>
<td>20</td>
<td>MC</td>
<td>6.EE.C.9</td>
<td>6.RP.A.3</td>
</tr>
<tr>
<td>21</td>
<td>MC</td>
<td>6.EE.B.5</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>MC</td>
<td>6.EE.A.2a</td>
<td>6.RP.A.3b</td>
</tr>
<tr>
<td>32</td>
<td>MC</td>
<td>6.EE.B.7</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>MC</td>
<td>6.EE.B.7</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>MC</td>
<td>6.EE.A.3b</td>
<td>6.RP.A.3a</td>
</tr>
</tbody>
</table>

Patterns, Relations, and Algebra Strand

Sim School: Grade 4 English Language Arts, Multiple-Choice Item Results, 2014 – Prediction Template (Sample Data, p. 2)

Common Core Standards for ELA

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>CC Standard</th>
<th>Prediction</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>MC</td>
<td>R.6</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>MC</td>
<td>R.6</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>MC</td>
<td>R.1</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>MC</td>
<td>R.1</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>MC</td>
<td>R.5</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>MC</td>
<td>R.6</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>MC</td>
<td>R.6</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>MC</td>
<td>R.6</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>MC</td>
<td>R.1</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>MC</td>
<td>R.4</td>
<td></td>
</tr>
</tbody>
</table>

Phase 2: Go Visual

- Large data display that whole team can look at together
- Stoplight highlighting

Stoplight Highlighting: Multiple-Choice Item Analysis Data (Data Tools, p. 20)

<table>
<thead>
<tr>
<th>Highlight Color</th>
<th>Meaning</th>
<th>% Correct (our cutoffs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>Go! Meets expectations</td>
<td>70-100</td>
</tr>
<tr>
<td>Yellow</td>
<td>Caution! Below expectations</td>
<td>60-69</td>
</tr>
<tr>
<td>Pink</td>
<td>Urgent! In immediate need of improvement</td>
<td>Below 60</td>
</tr>
</tbody>
</table>

1. Determine your criteria for stoplight highlighting percentage correct.
2. Stoplight highlight your table.

Possible Criteria for Stoplight Highlighting

- Team’s vision of an excellent school
- Cut points that will help distinguish urgent areas
- Local guidelines
- Comparison with comparable schools, if available

Stoplight Highlighting: Multiple-Choice Item Analysis Data

<table>
<thead>
<tr>
<th>Highlight Color</th>
<th>Meaning</th>
<th>% Correct (our cutoffs)</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Yellow</td>
<td>Caution! Below expectations</td>
<td>60-69</td>
</tr>
<tr>
<td>Pink</td>
<td>Urgent! In immediate need of improvement</td>
<td>Below 60</td>
</tr>
</tbody>
</table>

1. Determine your criteria for stoplight highlighting percentage correct.
2. Stoplight highlight your table.
Item Analysis for Number Sense and Operations: Stoplight Highlight Multiple-Choice: Percentage Correct

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>Strand</th>
<th>Standard</th>
<th>School Comp.</th>
<th>School Schools</th>
<th>Blank</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>MC</td>
<td>NS</td>
<td>8.N.1</td>
<td>41%</td>
<td>67%</td>
<td>0</td>
<td>41</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>A</td>
</tr>
<tr>
<td>11</td>
<td>MC</td>
<td>NS</td>
<td>8.N.5</td>
<td>50%</td>
<td>53%</td>
<td>0</td>
<td>15</td>
<td>11</td>
<td>22</td>
<td>10</td>
<td>B</td>
</tr>
<tr>
<td>17</td>
<td>MC</td>
<td>NS</td>
<td>8.N.4</td>
<td>54%</td>
<td>72%</td>
<td>8</td>
<td>94</td>
<td>9</td>
<td>5</td>
<td>12</td>
<td>C</td>
</tr>
<tr>
<td>23</td>
<td>MC</td>
<td>NS</td>
<td>8.N.2</td>
<td>50%</td>
<td>68%</td>
<td>9</td>
<td>12</td>
<td>45</td>
<td>25</td>
<td>16</td>
<td>B</td>
</tr>
<tr>
<td>26</td>
<td>MC</td>
<td>NS</td>
<td>8.N.5</td>
<td>50%</td>
<td>71%</td>
<td>5</td>
<td>22</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>D</td>
</tr>
<tr>
<td>40</td>
<td>OR</td>
<td>NS</td>
<td>8.N.4</td>
<td>65%</td>
<td>72%</td>
<td>0</td>
<td>64</td>
<td>6</td>
<td>28</td>
<td>2</td>
<td>A</td>
</tr>
</tbody>
</table>

Highlight Color | Meaning | % Correct (our cutoffs)
--- | --- | ---
Green | Go! Meets expectations | 70-100
Yellow | Caution! Below expectations | 60-69
Pink | Urgent! Immediate need of improvement | Below 60

Stoplight Highlighting: High-Frequency Distractors

1. Determine your criteria for stoplight highlighting distractors.
2. Highlight high-frequency INCORRECT selections.

Stoplight Highlighting: Multiple-Choice Item Analysis Data

1. Determine your criteria for stoplight highlighting percentage correct.
2. Stoplight highlight your table.

Phase 3: Observe

I am struck by...
I observe...
I notice...

Concept Attainment, Part 1

- It’s 53 degrees out.
- 75% of our fourth-graders scored below proficiency in mathematics problem-solving.
- This student diagrammed each trip across the river.

- It’s cold.
- Our teachers are not comfortable with mathematics content.
- The student must have used the diagram to generate the rule.

YES | NO
--- | ---
• It’s 53 degrees out.
• 75% of our fourth-graders scored below proficiency in mathematics problem-solving.
• This student diagrammed each trip across the river.
• It’s cold.
• Our teachers are not comfortable with mathematics content.
• The student must have used the diagram to generate the rule.
YES
• 22% of our students answered item 15 “B.” The correct answer was “A.”
• This year we increased the percentage of students in the top quartile in science by 10% over last year.
• 25% more boys than girls meet the standard in 11th-grade science on our state test.

NO
• That’s because they don’t understand the vocabulary in the question.
• Our new science program must be working.
• Boys are more interested in science than girls.

Concept Attainment, Part 2

Concept Attainment Testers
• Our teachers aren’t emphasizing basic skills enough.
• 45% of our eighth-graders are not meeting the standard in computation.
• Teachers aren’t teaching inquiry-based science because they feel too much pressure to cover the curriculum.
• On a recent survey, a majority of elementary teachers reported that they needed more professional development in science content.

Observation Reminders
• Made by the five senses.
• Contain no explanations.
• “Just the facts.”

Sample Observations on Multiple-Choice Item-Level Data
• For the three items designated to assess learning outcome 4, students did not perform better than 39% correct.
• Five out of seven items are in the red or urgent zone.
• On test item number 12, 32% of students responded to the incorrect answer B.
• All test items assessing students’ understanding of algebraic equations are highlighted in red.

Phase 3: Observe
I am struck by…
I observe…
I notice…
NO BECAUSE
Refining Observations

- Does the statement communicate a single idea?
- Is the statement short and clear?
- Is the statement easy to understand in everyday language?
- Does the statement incorporate numbers or phrases that quantify the data?
- Is the statement consistent with the way in which the data are reported (e.g., percentage, percentile)?

Phase 4: Infer/Question

A possible explanation…
That may be because…
A question I have now…

Phase 4: Infer/Question with Error Analysis

Do the item first and then consider:
- What would students need to know/do to be successful at this task?
- What errors are students making?
- What might students have been thinking to make the errors they did?
- How can we find out which of our hypotheses is right?
- What questions do we have?
- What additional data might we need?

Note: You may also inquire into student success: Why might so many of our students have done well on a particular item?

Do the problem. Discuss strategies.

1. What will students need to know/do?

20. Point S is shown on the number line below.

Which fraction best names point S on the number line?

A \( \frac{1}{4} \), 39%
B \( \frac{2}{3} \), 31%
C \( \frac{3}{4} \), 21%
D \( \frac{3}{2} \), 9%

2. What errors are students making?

20. Point S is shown on the number line below.

Which fraction best names point S on the number line?

A \( \frac{1}{4} \), 39%
B \( \frac{2}{3} \), 31%
C \( \frac{3}{4} \), 21%
D \( \frac{3}{2} \), 9%

3. What might students have been thinking to make these errors?

20. Point S is shown on the number line below.

Which fraction best names point S on the number line?

A \( \frac{1}{4} \), 39%
B \( \frac{2}{3} \), 31%
C \( \frac{3}{4} \), 21%
D \( \frac{3}{2} \), 9%
Phase 4: Infer/Question with Error Analysis

Choose two frequently missed items to study, including item 34 if doing mathematics data.

Do the item first and then consider...

- What would students need to know/do to be successful at this task?
- What might students have been thinking to make the errors they did?
- How can we find out which of our hypotheses is right?
- What questions do we have?
- What additional data might we need?

Choose two frequently missed items to study, including item 34 if doing mathematics data.

Engage in Data-Driven Dialogue with Item Data: Checklist (Data Tools, p. 9)

Data Tools Organizer

Reflection

- As a learner, what discoveries are you making about the data?
- As a facilitator, what discoveries are you making about the process?
- As part of a support system, how can you help to foster productive item and error analysis with your colleagues?

Why Did So Many Students Miss Item 34?

34. A comet passed by Earth in the year 1835. It passes by Earth every 60 years. Based on this information, in which of the following years can the comet be expected to pass by Earth? Show your work.

A. 2035 – 21%
B. 2060 – 16%
C. 2075 – 44% (correct)
D. 2080 – 12%
Why Investigate and Verify Causes?
Cautionary Tales

Hypothesize
Possible Cause: Don’t recognize patterns
Collect Additional Data, e.g.
• Student interviews
• Observations
• Additional work
• Research
Generate Solutions

Verify Causes (Data Tools, p. 27)

Hypothesize
Possible Cause: Computation errors
Collect Additional Data, e.g.
• Student interviews
• Observations
• Additional work
• Research
Generate Solutions

Verify Causes

From Data-Driven Dialogue to Error Analysis to Action


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Take F-I-R-M-E Action

- Feedback
- Investigation
- Reteaching, Re-engaging, Regrouping
- Moving On
- Extension of Learning Opportunities

Error Analysis Protocol (Data Tools, p. 13)

- Do the problem or item first individually or in pairs. Share solutions and strategies.
- Engage in Data-Driven Dialogue:
  1. What will students need to know and be able to do in order to be successful at this item? What kinds of errors or misconceptions do we anticipate students will make? (Predict)
  2. What errors are students making? (Observe)
  3. What might they have been thinking to make these errors? (Infer)
  4. How can we find out which hypothesis is true? (Investigate/Verify Causes)
  5. What different teaching (reteaching) strategies could we use to help students understand their errors, unravel their confusion, and/or correct a misconception? (Generate Solutions)
  6. How can we manage time, tasks, and student groups to assure that students receive the instruction they need? How can the team help? (Generate Solutions)

Error Analysis Template (Data Tools, p. 14)

<table>
<thead>
<tr>
<th>Percentage Responding to Each Choice</th>
<th>A: 39%</th>
<th>B: 31%</th>
<th>C: 21%</th>
<th>D: 9%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verified Hypothesis</td>
<td>Counted each dash on number line (starting at 0). Saw %, thought next should be 2/3.</td>
<td>Saw %, chose a number with same denominator.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Strategies for Teaching, Reteaching, Grouping, and/or Extending Learning | Reteach number line; use manipulatives; use fraction bars | Reteach number line; use manipulatives; use fraction bars | Extend learning with opportunity to teach other students; giving more challenging task; describing their thinking process |

Powerful Words

“Correctives will be effective only if they are qualitatively different from the original instruction.”

— Guskey, 2008, citing Benjamin Bloom

The Three R's of FIRRRME

- Reteach
  - Present material in a different way
- Re-engage
  - Create different learning experiences to engage learners
- Regroup
  - Match a grouping approach to the needs and/or interests of the students
Choice Points for Reteaching and Re-engaging

- Presentation, explanatory devices, and source material
- Degree of complexity
- Student engagement and investment
- Processing, practicing, applying

Choice-Points Tracker for Reteaching and Re-engaging

- Individually
  - Read through the handout
  - Write down 1-2 ideas that are particularly important to you.
- As a team
  - Share one idea that struck you – round-robin.
  - Brainstorm ideas for reteaching or re-engaging the students whose data your just analyzed.
  - Select one or two of your favorite ideas to share.

Student Error Analysis (Data Tools, p. 24)

A = Arithmetic  C = Careless  D = Directions  E = Explanation  U = Understanding

<table>
<thead>
<tr>
<th>Problem #</th>
<th>Error Classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-do the problem correctly.</td>
<td>Explain the error you made.</td>
</tr>
</tbody>
</table>

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Error Analysis Protocol (Data Tools, p. 13)

- Do the problem or item first individually or in pairs. Share solutions and strategies.
- Engage in Data-Driven Dialogue:
  1. What will students need to know and be able to do in order to be successful at this item? What kinds of errors or misconceptions do we anticipate students will make? (Predict)
  2. What errors are students making? (Observe)
  3. What might they have been thinking to make these errors? (Infer)
  4. How can we find out which hypothesis is true? (Investigate/Verify Causes)
  5. How can we manage time, tasks, and student groups to assure that students receive the instruction they need? How can the team help? (Generate Solutions)
  6. What individual and collective action do we commit to?

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Commit to Individual and Collective Action! Take the Plunge!

Short-Cycle Action Plans for Grade-Level or Content Teams (Data Tools, p. 18)

Annual SMART Student-Learning Goal: By June 2014, improve 6th grade students’ performance in comprehension of informational text as evidenced by increased percentage of students scoring proficient from 50% to 75% on annual assessment.

Interim SMART Student-Learning Goal: In second quarter benchmark, increase percentage proficient in comprehension of informational text to 70%.

Instructional or Reteaching Strategy We Agree On

- Teach use of graphic organizers
- Provide students with at least four practice opportunities this month
- Bring student examples of graphic organizers to our next meeting

Monitoring Implementation: How Will We Know We Did It?

- Analyze informational reading comprehension on open-response assessment
Short-Cycle Action Plans for Grade-Level or Content Teams (Data Tools, p. 19)

**Annual SMART Student-Learning Goal:**

**Interim SMART Student-Learning Goal:**

<table>
<thead>
<tr>
<th>Instructional or Reteaching Strategy We Agree On</th>
<th>Monitoring Implementation: How Will We Know We Did It?</th>
<th>Monitoring Student Learning: How Will We Know It Worked?</th>
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Reflect

- I discovered….
- And a next step for me is…