Data Use
Professional Development Series
301
Day 6
Welcome back!
Agenda

Today

Welcome/Overview
Implementation Progress
Data Questioning
Assessment Literacy
Break
Creating Checks for Understanding
Data Conversations with Students
Lunch
Using Data to Create Flexible Small Groups for Differentiation
Aggregate Data and Sub-populations
Break
Intersection Analysis
Implementation Planning
Wrap-Up/Evaluations
Objectives

By the end of day 6, SDLTs will be able to:

• Identify impacts of their Data Use implementation.
• Articulate questions appropriate to various data sources.
• Evaluate assessment items and create checks for understanding based on alignment to standards and Depth of Knowledge.
• Use data to create flexible small groups for differentiation.
• Engage in Data Conversations with students.
• Articulate how aggregate and disaggregated data can be used in schools.
• Articulate a plan for ongoing Data Use implementation.
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<th>7</th>
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<th>9</th>
<th>10</th>
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</thead>
</table>

- What were the results of the Cycle of Inquiry based on your Implementation Progress data from Day 4?
- What role did our On-Site Visit play in advancing Data Use with teachers?
Cycle of Inquiry

Reflect and Share Results
Identify Pattern of Need

Validate
Determine Root Cause

Act
Analyze
Strategize

Reflective Practice
Reflective Practice
Reflective Practice

Assess
Implement Strategy
Create Action Plan
Select High-Impact Strategy
Brainstorm Strategies

Data Conversations
Data Conversations
Data Conversations
Data Analysis Questions

- What questions can you ask of this particular data set?
- Which of these questions can you ask of all data sources?
Applying Data Analysis Questions
Cycle of Inquiry

Act
Analyze
Strategize

Reflective Practice
Reflective Practice
Reflective Practice

Data Conversations
Data Conversations
Data Conversations

Create Action Plan
Select High-Impact Strategy
Brainstorm Strategies
Implement Strategy
Assess
Identify Pattern of Need
Validate
Determine Root Cause

Reflect and Share Results
Assessment Literacy

- Evaluating Assessments
- Creating Assessments
Assessment Literacy

Summative:
• Assessment OF learning

Interim:
• Assessment OF or FOR learning

Formative:
• Assessment FOR learning
Assessment Literacy

Dimensions of Formative Assessment:

• Clearly articulated learning progressions
• Identified learning goals and success criteria
• Descriptive feedback
• Self- and peer-assessment
• Collaboration
Assessment Literacy
Evaluating Assessments

- Alignment to Standards
- Cognitive Complexity
- Data to inform instruction
Evaluating Assessment Items

RL.6.2 Key Ideas and Details: Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.

<table>
<thead>
<tr>
<th>Item</th>
<th>Skill/concept measured</th>
<th>DOK</th>
<th>Part/All of standard?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the themes of <em>Little Women</em>?</td>
<td>Determine a theme or central idea of a text?</td>
<td>2</td>
<td>Part</td>
</tr>
<tr>
<td>Write a brief plot summary of <em>Little Women</em>, explaining the themes revealed throughout the text using specific examples from the text.</td>
<td>Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text</td>
<td>3</td>
<td>All</td>
</tr>
</tbody>
</table>
Evaluating Assessment Items

Cognitive Complexity: Webb’s Depth of Knowledge

Level 1: Recall
• identify, state, list, define, recognize, use, measure

Level 2: Skill/Concept
• classify, organize, estimate, compare, infer, summarize

Level 3: Strategic Thinking
• generalize, draw a conclusion, support, hypothesize, investigate

Level 4: Extended Thinking
• make connections, synthesize, prove, analyze, design and carry out the project
Summary

• Impacts of the work look different at different schools.
• Understanding the best questions to ask of various data sources and types can help facilitate productive data meetings and Data Conversations.
• It is important for educators to plan how they will assess student learning while creating their Instructional Action Plan.
Creating an Effective Check for Understanding

- Measure only one standard, or one aspect of a standard.
- Determine the type of item that will be used.
- Keep in mind the format of the item.
- Design a question that helps diagnose common misperceptions on the topic.
- Use varying levels of cognitive complexity (DOK).
- Be aware of time constraints.
- Encourage student effort.
Creating Checks for Understanding
Data Conversations with Students
Why Include Students?

“Students are motivated to try harder, risk failure, and set higher standards for themselves when they are involved in setting goals and monitoring and evaluating their own performance.”

(O’Neill, 2004)
Data Conversations with Students

You and Ms. Jackson both teach Antonio. In Ms. Jackson’s class, Antonio demonstrates good behavior and is performing well academically. In your class, Antonio has become disruptive and his performance on weekly quizzes has declined over the last month.

What kind of Data Conversation could you have with Antonio?

What kinds of questions could you ask?
Planning for Student Data Conversations Using Assessment Data

1. Explain expectations and assessment criteria.
2. Provide feedback to students that is timely, specific, well-formatted, and constructive.
3. Provide tools that help students learn from feedback.
4. Use students’ data analysis to guide instruction.

IES PRACTICE GUIDE: Using Student Achievement Data to Support Instructional Decision Making
Data Conversations with Students: Goal Setting

• Use *Student Goal Setting Sheets*

• Plan your Data Conversation:
  – What the purpose of the Data Conversation?
  – What is the first question you will ask?

• Ask questions using Positive Presumptions
  – Open-ended questions to promote thinking and reflection

• Guide students toward Goal Setting

• Paraphrase as you go
Planning for Student Data Conversations

• How can Student Data Conversations enhance what is already happening at your school?
• How can Student Data Conversations impact instructional decisions – for teachers and for students?
• What might interfere with having students analyze their own data and set learning goals?
Summary

- Data Conversations can be used in various contexts and with multiple stakeholders, including students, to foster transparency.
- Evaluating and/or creating assessment items or checks for understanding require alignment with standards and appropriate cognitive complexity.
- Considering the cognitive complexity of items can help educators provide more challenging tasks for students and give educators a more nuanced view of student achievement.
Cycle of Inquiry

- Reflect and Share Results
- Identify Pattern of Need
- Validate
- Determine Root Cause
- Reflective Practice
- Reflective Practice
- Reflective Practice
- Analyze
- Strategize
- Act
- Create Action Plan
- Brainstorm Strategies
- Select High-Impact Strategy
- Implement Strategy
- Assess
- Data Conversations
- Data Conversations
- Data Conversations
Using Data For Flexible Grouping

Types of flexible small groups:

- Short Term
- Long Term
- Spontaneous
Using Two Data Sets to Create Groups for Differentiation

**9-Grid Matrix**

<table>
<thead>
<tr>
<th>Data Point A:</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
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<tbody>
<tr>
<td>Level 1</td>
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<td>Level 3</td>
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</table>

<table>
<thead>
<tr>
<th>Data Point B:</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
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</table>
Aggregate Data

What is it?

“Student performance data reported at the largest, aggregate-group level, such as by grade level and content area for a school, district, or state.” (p. 146)

Why is it important?

“It paints a broad brush picture of student achievement overall” and helps us “understand how students in their school perform in comparison to students in similar schools.” (p. 146)

Disaggregated Data

What is it?

• Disaggregated data is the presentation of data broken down into segments of the student population instead of the entire population.

• Some common ways to disaggregate data include by: gender, grade level, enrollment in special programs, ethnicity, school or class, socioeconomic status, year of entry into district.

Why is it important?

Disaggregation can help educators at all levels reveal critical issues that might otherwise remain invisible.
Disaggregated Data – RI NAEP Results

Mathematics – Grade 4 Average Scale Scores

* Significantly different (p<.05) from 2013

NAEP Proficient: 249

* White

* Black

2003 2005 2007 2009 2011 2013

239* 241* 242* 247* 249 250

29 30 23 26 24 26

210* 211* 219 221 225 224
**Aggregate Report**

The aggregate report below is displaying student level data on the following measures: On-track to Graduation percentage, Attendance Percentage, Number of Suspensions, Years Over-age and NECAP math and reading scores.

Note: The indicators below were processed on 11/6/2013 3:01:34 AM. When generating the indicators, RIDE uses the most current data available to RIDE which has been submitted by your LEA.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Low Risk</th>
<th>Some Risk</th>
<th>At Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Track Percentage</td>
<td>95.91% (944)</td>
<td>3.64% (37)</td>
<td>1.97% (20)</td>
<td>1.48% (15)</td>
</tr>
<tr>
<td>Attendance Percentage</td>
<td>92.52% (940)</td>
<td>2.56% (26)</td>
<td>1.48% (15)</td>
<td>3.44% (15)</td>
</tr>
<tr>
<td>Number of Suspensions</td>
<td>96.82% (1002)</td>
<td>1.08% (11)</td>
<td>0.20% (2)</td>
<td>0.20% (2)</td>
</tr>
<tr>
<td>Years Over Age</td>
<td>85.22% (876)</td>
<td>7.09% (72)</td>
<td>4.53% (46)</td>
<td>2.17% (22)</td>
</tr>
<tr>
<td>Math Score</td>
<td>76.08% (773)</td>
<td>12.80% (130)</td>
<td>11.12% (113)</td>
<td>11.12% (113)</td>
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<tr>
<td>Reading Score</td>
<td>88.48% (859)</td>
<td>7.78% (79)</td>
<td>3.74% (38)</td>
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<table>
<thead>
<tr>
<th>SASID</th>
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<tr>
<td>12</td>
<td>98</td>
<td>100</td>
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</table>
Disaggregate Report

Use the filters below to generate a disaggregate report:

Grade(s):
- All Grades
- 6
- 7
- 8
- 9
- 10
- 11
- 12

Demographic(s):
- Gender
  - M
  - F
- Free/Reduced Lunch
  - Y
  - N
- IEP Status
  - Y
  - N
- LEP Status
  - Y
  - N
- Race
  - American Indian or Alaska Native
  - Asian
  - Black or African American
  - Hispanic/Latino
  - Native Hawaiian or Other Pacific Islander
  - White
  - Two or more races

Show Data
Disaggregate Report

Report results filtered by Grade(s): [9] Demographic(s): Free/Reduced Lunch-N

The aggregate report below is displaying student level data on the following measures: On-track to Graduation percentage, Attendance Percentage, Number of Suspensions, Years Over-age and NECAP math and reading scores.

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<tr>
<td>On Track Percentage</td>
<td>96.67%</td>
<td>1.90%</td>
<td>0.48%</td>
<td>0.95%</td>
</tr>
<tr>
<td>Attendance Percentage</td>
<td>91.80%</td>
<td>4.76%</td>
<td>0%</td>
<td>3.33%</td>
</tr>
<tr>
<td>Number of Suspensions</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
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<tr>
<td>Years Over Age</td>
<td>67.14%</td>
<td>13.81%</td>
<td>14.29%</td>
<td>4.78%</td>
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<td>Math Score</td>
<td>89.05%</td>
<td>6.19%</td>
<td>4.78%</td>
<td>0.95%</td>
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<tr>
<td>Reading Score</td>
<td>93.33%</td>
<td>5.71%</td>
<td>0.95%</td>
<td>0.95%</td>
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</table>
Disaggregate Report

Report results filtered by Grade(s): [9] Demographic(s): [Free/Reduced Lunch-Y]

The aggregate report below is displaying student level data on the following measures: On-track to Graduation percentage, Attendance Percentage, Number of Suspensions, Years Over-age and NECAP math and reading scores.

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<tr>
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<td>65.85%</td>
<td>17.07%</td>
<td>14.63%</td>
<td>2.44%</td>
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<tr>
<td>Attendance Percentage</td>
<td>76.05%</td>
<td>7.32%</td>
<td>0%</td>
<td>14.63%</td>
</tr>
<tr>
<td>Number of Suspensions</td>
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<td>0%</td>
<td>0%</td>
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<tr>
<td>Years Over Age</td>
<td>63.41%</td>
<td>9.76%</td>
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<tr>
<td>Math Score</td>
<td>43.90%</td>
<td>34.15%</td>
<td>21.95%</td>
<td>7.12%</td>
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<tr>
<td>Reading Score</td>
<td>73.17%</td>
<td>19.51%</td>
<td>7.32%</td>
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Summary

- Differentiating for small groups of students can mean flexibly adjusting core instruction for clusters of students within a Cycle of Inquiry.
- Aggregate data provides a look at the big picture, while disaggregated data helps us drill down into sub-groups and refine our Patterns of Need and follow-up questions.
- It is important to be prepared for conversations about sub-groups when disaggregating large data sets.
Break
Triangulation and Intersection Analysis

**Triangulation** is “analyzing other data to illuminate, confirm, or dispute what you learned through your initial analysis — you will be able to identify your problem with more accuracy and specificity.”

**Intersection Analysis** is investigating the different dimensions of data to “look more closely and understand each piece of information we gather about a school.”


Intersection Analysis

Demographic

Attendance, grade level, ethnicity, gender, etc.

Student Learning

Standardized test results, GPA, curriculum assessments

Perception

Surveys, questionnaires, observations

“People act in congruence with what they believe, perceive, or think about different topics.” (Bernhardt)

School Process

Data that describe instructional practices, strategies, programs, scheduling

## Two-Way Intersections

<table>
<thead>
<tr>
<th>Intersections</th>
<th>Can Tell Us</th>
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</thead>
<tbody>
<tr>
<td>Demographics by Student Learning</td>
<td>If subgroups of students perform differently on student learning measures</td>
</tr>
<tr>
<td>Demographics by Perceptions</td>
<td>If subgroups of students are experiencing school differently</td>
</tr>
<tr>
<td>Demographics by School Processes</td>
<td>If all students are represented in the different programs offered by the school</td>
</tr>
<tr>
<td>Student Learning by School Processes</td>
<td>If different programs are achieving similar student learning results</td>
</tr>
<tr>
<td>Student Learning by Perceptions</td>
<td>If student perceptions of the learning environment have an impact on their results</td>
</tr>
<tr>
<td>Perceptions by School Processes</td>
<td>If people are perceiving programs and processes differently</td>
</tr>
</tbody>
</table>
## Three-Way Intersections

<table>
<thead>
<tr>
<th>Intersections</th>
<th>Can Tell Us</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics by Student Learning by Perceptions</td>
<td>The correlation between demographic factors and attitudes about student learning</td>
</tr>
<tr>
<td>Demographics by Student Learning by School Processes</td>
<td>The relationship between different subgroups of students participating in specific programs, as measured by subgroup learning results</td>
</tr>
<tr>
<td>Demographics by Perceptions by School Processes</td>
<td>What programs different students like best, or the relationship among different programs and student attitudes</td>
</tr>
<tr>
<td>Student Learning by School Processes by Perceptions</td>
<td>The relationship between the processes students prefer and learning results</td>
</tr>
</tbody>
</table>
## Four-way Intersections

<table>
<thead>
<tr>
<th>Intersections</th>
<th>Can Tell Us</th>
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</thead>
<tbody>
<tr>
<td>Demographics by Student Learning by Perceptions by School Processes</td>
<td>What processes or programs have the strongest relationship with different subgroups of students’ learning according to student perceptions and as measured by student learning results</td>
</tr>
</tbody>
</table>
Using Questions to Drive Intersection Analysis

For each intersection:

• Generate a question that targets the heart of each intersection.
• Determine what data we would need to answer these questions.
• Be ready to share your table’s best data question.
Intersection Analysis

Action Plan

• Create a plan for an Intersection Analysis you can conduct at your school.

  – What is your question?
  – Is it a two-way, three-way, or four-way intersection?
  – What data will you analyze?
  – What additional supports will you need?
  – What stakeholders might be interested in the results?
Summary

- Intersection Analysis is useful when examining large aggregate data sets.
- Intersection Analysis can be used when tackling high-stakes school- and district-level decisions.
Implementation Planning
# Days 6, 7 & 8

<table>
<thead>
<tr>
<th>Day 4</th>
<th>Today</th>
<th>Day 7: On-Site Visit</th>
<th>Day 8: Partial list of topics</th>
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</thead>
<tbody>
<tr>
<td>Adaptive Change and Collaborative Structures</td>
<td>Welcome/Overview</td>
<td>Agenda to be determined with your coach</td>
<td>Visual Data Displays</td>
</tr>
<tr>
<td>Inference Validation</td>
<td>Implementation Progress</td>
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<td>Action Research and Sustainability Planning</td>
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<td>Correlation/Causation</td>
<td>Data Questioning</td>
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<td>Vertical and Horizontal Alignment</td>
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<td>Triangulation</td>
<td>Assessment Literacy</td>
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<td>Data Conversations with Parents</td>
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<tr>
<td>Effort/Impact</td>
<td>Break</td>
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<td>Revisiting Data Inventory</td>
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<tr>
<td>Techniques for Data Conversations: Paraphrasing</td>
<td>Creating Checks for Understanding</td>
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<td>Planning Conversations</td>
<td>Data Conversations with Students</td>
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<tr>
<td>On-Site Visits</td>
<td>Lunch</td>
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<td></td>
<td>Using Data to Create Flexible Small Groups for Differentation</td>
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<td></td>
<td>Wrap-Up/Evaluations</td>
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</tbody>
</table>

**Day 4 Today:**
- Welcome/Overview
- Implementation Progress
- Data Questioning
- Assessment Literacy
- Break
- Creating Checks for Understanding
- Data Conversations with Students
- Lunch
- Using Data to Create Flexible Small Groups for Differentiation
- Aggregate Data and Sub-populations
- Break
- Intersection Analysis
- Implementation Planning
- Wrap-Up/Evaluations

**Day 7: On-Site Visit:**
- Agenda to be determined with your coach
Reflection
Day 6 Session Evaluation

www.surveymonkey.com/s/pdsessioneval
Wrap Up