Rethinking How to Analyze Data in the Middle School

Judy Frank
MMGW Director
“I’ll pause for a moment so you can let this information sink in.”
Learning Goals for Analyzing Data

• Focus on student achievement and school improvement by using multiple sources of data to set measurable goals for students and staff
• Analyze student learning data at individual, classroom, grade level, content area, and school levels to plan instructional programs that enhance student achievement and to identify appropriate instructional models for student subgroups to increase achievement
• Allocate time, personnel, and resources to collaborate with teachers on reviewing student work, preparing common assessments, analyzing data, and participating in professional learning
• Understand, encourage, and facilitate the effective use of data among colleagues
Table Talk

List 10 pieces of data that you collect at your school.

Be prepared to share your list.
Things We Know

Quality of classroom instruction is the single greatest predictor of student learning and achievement.

Principal leadership is second . . .

Robert J. Marzano
Things we know about data use

For data to be used to impact classroom instruction, there must be structures in place, to—

• Implement a shared schoolwide vision.
• Help staff review data and discuss improving processes.
• Have regular, honest collaborations that cause teacher learning.
Big Ideas

- Use Bernhardt's Data Categories
- Those closest to the data
- Teams
- Data Chats

What data do you collect and for what purpose?

How do you analyze it?

What do you do with what you learn?

Who looks at it with you?

- Disaggregate
- Sort
- Compare
- Look for Root Causes
- Those closest to the data
- Teams
- Data Chats

What data do you collect and for what purpose?

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What do you do with what you learn?

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Six Step Process

“Data is only the start of a conversation. It doesn't give solutions.”

Toby Ahern
We Can Prove It

“Schools that analyze and use information about their school communities make better decisions about not only what to change, but how to institutionalize systemic change . . . further, schools that use data understand the effectiveness of their reform efforts — those that do not can only assume that effectiveness.”

— Victoria Bernhardt, *Data Analysis for Comprehensive School Improvement*
Bernhardt’s Multiple Measures of Data

Demographics

School Processes

Perceptions

Student Learning

Data Source Examples

Demographics
Descriptive information about the school community

Student:
- Enrollment
- Gender
- Ethnicity
- Language(s)
- ESE
- Gifted
- Attendance
- Drop-out Rates
- Free/Red. Lunch
- Grade Level

Staff:
- Years Experience
- Gender
- Certification

Data Source Examples

Student surveys
SAC/Parent surveys
Focus Groups
Staff Survey
Teacher Belief
Exit Interviews/Surveys
Observations

Demographics

Perceptions
What people think about the learning environment

Data Source Examples

- Standardized Tests
- Benchmark Tests
- End of Course Exams
- Classroom Assessments
- Student Work Samples
- Grades
- Semester/9 Week Assessments
- Teacher Observations

Data Source Examples

- Demographics
- Perceptions
- School Process
- Student Learning

- Rti
- Intensive Reading
- and Math
- Instructional Methods
- Selection for
- Advanced Classes
- Student Retentions
- Gifted Placements
- Grading Policies
- Re-Do Policies

Balanced Data Sources

• Review your list of data
• Do you have several kinds from each source?
• If not, which sources are lacking?
Middle Grades Cohort ELA

6th 2015 | 7th 2016 | 8th 2017
---|---|---
L1 | L2 | L3 | L4 | L5
Pinellas
- 6th 2015: 23%
- 7th 2016: 23%
- 8th 2017: 25%

Florida
- 6th 2015: 26%
- 7th 2016: 22%
- 8th 2017: 22%

- L1: 26%
- L2: 23%
- L3: 22%
- L4: 21%
- L5: 25%

SREB
Middle Grades Cohort Math

Pinellas

Florida

L1  L2  L3  L4  L5

6th 2015  4%  18%  25%  24%  29%
7th 2016  11%  19%  27%  19%  25%
8th 2017  37%  25%  27%  24%  27%

6th 2015  8%  19%  23%  24%  19%
7th 2016  9%  18%  27%  21%  24%
8th 2017  9%  11%  27%  27%  30%
Intersection of 4 Measures

Refer to p. 4 of your article

1. As a group *create a question* about math performance or reading performance that utilizes all 4 elements.

2. List data that you would need from each area to answer the question.
Putting it together

• Write your question in the center box
• For each category list data to help you answer that question
What data do you collect and when?

- **Annually**: Summative District and State Assessments (aggregated, disaggregated, strand, item, and student work)
- **2–4 times a year**: Data about people, practices, perceptions (e.g., demographic, enrollment, survey, interview, observation data, curriculum maps)
- **Quarterly or end of the unit**: Benchmark Common Assessments (e.g., end-of-unit, common grade-level tests reported at item level)
- **1–4 times a month**: Formative Common Assessments (e.g., math problem of the week, writing samples, science journals, other student work)
- **Daily–Weekly**: Formative Classroom Assessments for Learning (e.g., student self-assessments, descriptive feedback, selected response, written response, personal communications, performance assessments)
Schools are perfectly designed to get the results they are getting now.

If schools want different results, they must measure and then change their processes to create the results they really want.
“Weighing a Pig Doesn’t Make it Fatter.”
How do you analyze data?

A method for uncovering the REAL reasons underlying a problem

The purpose of a root cause analysis is to:

• Solve a problem that has actually occurred
• Prevent a less serious problem from escalating to an unacceptable level
• Dig beneath the surface to uncover the root cause
• Focus improvement efforts on ROOT CAUSES instead of immediately obvious symptoms
5 Why’s

**Step 1:** Define the gap in performance that is of concern. State that concern in the form of a question.

Example: Why did 42% of Grade 7 students with disabilities not meet or exceed standards on the 2017 FSA math test?

**Step 2:** Brainstorm answers to the question. Have a note taker chart responses where all can see.

**Step 3:** Remove any responses that are out of the team’s control.

**Step 4:** Determine which of the causes is most likely to produce the results needed to impact SWD achievement in math? In which of the causes do we want to explore more deeply? This cause becomes the second why question.

**Step 5:** Continue asking questions until an actionable cause has been uncovered.
Brainstorming Norms / Tips

- Have a note taker (preferably on a chart all can see)
- Quick responses without discussing each response
- Full participation of all members of the group
- All answers are accepted / valued
- Affirm everyone’s contributions
- Avoid negative body language or comments
The Five Whys: Tips for Asking Questions

The “WHY” questions should broaden the participants’ level of thinking

Stop at a level where you can take action within your sphere of control

The number 5 is not sacred – just “go deeper” than the obvious symptoms of the problem
Activity: The Five Whys

1. Take 15 minutes to do this activity.

2. Working with your table mates, use The Five Whys as a root cause analysis tool to analyze the problem you identified on your organizer.

3. Use your chart paper to record your work using the format provided.
<table>
<thead>
<tr>
<th>Write Problem Here</th>
<th>Your Question from the Frayer Model.</th>
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<tbody>
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<td>Question</td>
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<td>Why #1:</td>
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<td>Why #2:</td>
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<td>Why #5:</td>
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<td>Probable Cause(s)</td>
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</table>
“We use data to drive instruction.”

What does it look like when this is really happening?
Where is it happening at your school?
Data Discussions
Resources for…
Questions for Data Team Leaders
Data Chat
Data Analysis Protocol
“The measure of success is not whether you have a tough problem to deal with – but whether it’s the same problem you had last year.”
– John Foster Dulles
SREB is here to help!

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