D3: Using Technology to Enhance Data-Based Decision Making & Classroom Practices

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Key Words: Applied Evaluation, Assessment, Training
Maximizing Your Session Participation

When Working In Your Team

Consider 4 questions:

- Where are we in our implementation?
- What do I hope to learn?
- What did I learn?
- What will I do with what I learned?
Where are you in the implementation process?

Adapted from Fixsen & Blase, 2005

Exploration & Adoption

- We think we know what we need so we are planning to move forward (evidence-based)

Installation

- Let’s make sure we’re ready to implement (capacity infrastructure)

Initial Implementation

- Let’s give it a try & evaluate (demonstration)

Full Implementation

- That worked, let’s do it for real and implement all tiers across all schools (investment)
- Let’s make it our way of doing business & sustain implementation (institutionalized use)
Leadership Team Action Planning Worksheets: Steps

**Self-Assessment:** Accomplishments & Priorities
- Leadership Team Action Planning Worksheet

**Session Assignments & Notes:** High Priorities
- Team Member Note-Taking Worksheet

**Action Planning:** Enhancements & Improvements
- Leadership Team Action Planning Worksheet
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The Importance of Data-Based Decision Making

- We don’t know whether anything we do is worth doing until we know what outcomes it produces.
- Knowing what the outcomes are tells us how to make changes to maximize success.
Monitoring Instructional Outcomes

• Teacher behaviors
  – How do teachers engage students?
  – How do teachers provide feedback?
  – How do teachers facilitate success?

• Student behaviors
  – How actively engaged are students?
  – How successful are student behaviors?
  – How successful are student academics?
Teaching Behaviors

• High Probability Teacher Instructional Behaviors
  – Explicit Instruction - Driving the lesson
    • Example selection and presentation
  – High Levels of Student Engagement
    • Teachers create OTR
  – Performance Feedback
    • Frequent feedback with high ratios of positive to negative
Monitoring Teaching Behavior

Consider the degree to which teachers provide:

- Driving of the lesson (time spent teaching)
- Opportunities to respond (OTR)
- Positive feedback

Teachers using the least amount of these practices have students that are:

- 27% more likely to be off task
- 67% more likely to be disruptive

(Gage, Scott, & Him, 2018)
What Do You Think Average Time Spent Teaching Looks Like?

(Scott, Hirn, & Cooper, 2017)
Extrapolating Across the School Year

Teaching

Assuming 5 hour school day, 20 day school month, and 180 day school year

<table>
<thead>
<tr>
<th>Not teaching = wasted instructional time</th>
<th>% of 15 min “Not Teaching”</th>
<th>Instruction Time Not Used (no teaching or monitoring)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Per Hour</td>
</tr>
<tr>
<td>Elementary</td>
<td>10%</td>
<td>6 min</td>
</tr>
<tr>
<td>Middle School</td>
<td>10%</td>
<td>6 min</td>
</tr>
<tr>
<td>High School</td>
<td>28%</td>
<td>16.8 min</td>
</tr>
</tbody>
</table>

**Definition of Not Teaching:**
*Teacher is not engaging students and is involved in independent task with no interactions with student.*
Engagement is a Teacher Behavior
What Do You Think Average OTR Rates Look Like?

(Scott, Him, & Cooper, 2017)
What Do You Think Average Feedback Rates Look Like?

(Scott, Hirn, & Cooper, 2017)
# Changing Teacher Behavior

- Same as changing student behavior
- Can be done via PLCs

## Explicit

1. Provide a definition of effective instructional practices
2. Model and demonstrate a range of possibilities

## Engaging

1. Discuss practicality with all and ask about relevant adaptations
2. Consider roadblocks
3. Practice and role play with real situations

## Formative Feedback

1. Peer monitoring and formative feedback
2. Goal setting and regular discussions
Data

• This is coming – collecting data now
Student Behavior
Academic Learning Time

Student Success

Allocated Time

Instructional Time

Engaged Time

Academic Learning Time

medium

low
**Increasing Time**

**Allocated**
- Extend length of school day & class period

**Instructional**
- Effective classroom management (clear expectations, routines, procedures, etc.)

**Engaged**
- Evidence-based instruction (e.g., OTRs, feedback)
- Self-regulation & other behavioral strategies

**Academic Learning**
- Increasing student rate of success (e.g., deliberate practice)
Improving Student Engagement

My Self-Monitoring Form

Today in class...

- Was I paying attention to my assigned work? Y N
- Was I following the classroom rules? Y N
- Was I paying attention to my assigned work? Y N
- Was I following the classroom rules? Y N
- Was I paying attention to my assigned work? Y N
- Was I following the classroom rules? Y N
- Was I paying attention to my assigned work? Y N
- Was I following the classroom rules? Y N

Total number of Y (yes) = _____ My Goal =

Signed: ___________________________ ___________________________ ___________________________
Student Teacher Parent

BEHAVIOR CONTRACT

I promise to behave in a socially acceptable manner by meeting the expectations listed below:

☐ I will avoid yelling
☐ I will avoid hitting
☐ I will avoid interrupting
☐ I will avoid being lazy
☐ I will avoid teasing
☐ I will avoid daydreaming
☐ I will avoid ignoring
☐ I will avoid cursing
☐ I will keep my hygiene
☐ I will pick up after myself
☐ I will use good manners
☐ I will eat nutritious foods
☐ I will participate

List each expectation then explain the steps that will be necessary for success:

Expectation #1

•

Expectation #2

•

Expectation #3

•

Privilege for meeting the expectations: ____________________________

Consequence for not meeting the expectations: ____________________________

Parent(s) Signature: ____________________________ Child Signature: ____________________________
How do you know if student engagement is improving in the classroom?
How do you know if student engagement is improving in the classroom?
How do you know if you student engagement is improving in the classroom?
Formative Evaluation

• How do you know if a student is responding to intervention?
  – Accurate and frequent measures of progress

• Purpose of progress monitoring:
  – Measure student growth
  – Make judgments about intervention effectiveness
  – Determine how and when to continue, adapt, or discontinue intervention
Step 1: Select appropriate method of measurement

• Options:
  - Direct Behavior Ratings
  - Systematic Direct Observation
Direct Behavior Rating
Direct Behavior Rating (DBR)

- Involves teachers rating a student’s behavior on a 0-10 scale

  - **Direct**
    - Ratings recorded immediately at end of observation session

  - **Behavior**
    - Behavior is specific and operationally defined

  - **Rating**
    - Ratings are conducted repeatedly and follow a 0-10 scale

www.directbehaviorratings.org
### Direct Behavior Rating (DBR) Form: 3 Standard Behaviors

<table>
<thead>
<tr>
<th>Date</th>
<th>Student</th>
<th>Activity Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M T W Th F</td>
<td>Rater:</td>
<td></td>
</tr>
</tbody>
</table>

**Behavior Descriptions:**

**Academically engaged** is actively or passively participating in the classroom activity. For example: writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, or looking at instructional materials.

**Respectful** is defined as compliant and polite behavior in response to adult directions and/or peer interactions. For example: follows teacher direction, pro-social interaction with peers, positive response to adult request, verbal or physical disruption without a negative tone/connotation.

**Disruptive** is student action that interrupts regular school or classroom activity. For example: out of seat, fidgeting, playing with objects, acting aggressively, talking/yelling about things that are unrelated to classroom instruction.

---

- **Simple**
- **Inexpensive**
- **Efficient**

Other names: *home-school note, behavior report card, daily progress report, good behavior note*
Direct Behavior Ratings

Place a mark along the line that best reflects the percentage of total time the student was academically engaged during math today.

0% 1 2 3 4 5 6 7 8 9 10
Never 50% Sometimes Always

Circle the number that best represents the student’s behavior:

0 1 2 3 4 5 6 7 8 9 10
Direct Behavior Rating: Standard Form

- Each behavior has operational definition with examples and nonexamples
- Other option: Fill in with your own target behaviors

[Graphs: Academically Engaged, Respectful, Disruptive]
Direct Behavior Rating

• Steps for implementation:
  1. Identify the behaviors you want to monitor.
  2. Define the behaviors with examples and nonexamples.
  3. Identify the time period or instructional activity for observation.
  4. Immediately following observation period, complete the rating.
  5. Graph the rating daily.
DBR Empirical Support

• Evidence of reliability and validity
• Moderately to highly correlated with direct observation
• Consistency across raters (e.g., external observers and teachers)

(Briesch, Kilgus, Chafouleas, Riley-Tillman, & Christ, 2013; Chafouleas, 2011, Chafouleas, Kilgus, & Hernandez, 2009; Riley-Tillman, Chafouleas, Briesch, & Eckert, 2008; Riley-Tillman, Chafouleas, Sassu, Chanese, & Glazer, 2008)
Using Technology to Support DBR
Using Technology to Support DBR

<table>
<thead>
<tr>
<th>Student</th>
<th>Teacher</th>
<th>Activity</th>
<th>Length of Session: 30 minutes</th>
</tr>
</thead>
</table>

**Academic Engagement:** Izzy is working on the assigned task.

**Cooperation:** Izzy is communicating with peers in an appropriate way, providing positive comments to her peers, & offering ideas.

- **Never:** 0
- **Sometimes:** 1, 2, 3
- **Always:** 4, 5, 6, 7, 8, 9, 10

![DBR Chart](image)
Systematic Direct Observation

Momentary Time Sampling
Momentary Time Sampling

Record at a given instance

<table>
<thead>
<tr>
<th>Interval</th>
<th>Occur</th>
<th>Did not Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
<td></td>
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<tr>
<td>2</td>
<td></td>
<td>X</td>
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<tr>
<td>3</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>X</td>
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<tr>
<td>5</td>
<td>X</td>
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<td>6</td>
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<td>7</td>
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<td>8</td>
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<td>X</td>
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<td>9</td>
<td>X</td>
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<td>10</td>
<td>X</td>
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</tbody>
</table>

6/10 = 60%

Continuous Behaviors:
On/Off-Task, Engagement, Compliance, Disruption

Graph this %
<table>
<thead>
<tr>
<th>Time</th>
<th>Yes</th>
<th>No</th>
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<tbody>
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<td>:10</td>
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<tr>
<td>TOTAL</td>
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Let’s Practice!

https://www.online-stopwatch.com/countdown/
Technology to Support Momentary Time Sampling
Systematic Direct Observation

**ADVANTAGES**

- Most direct, accurate measure of student behavior (considered “the gold standard”)

**DISADVANTAGES**

- May be viewed as labor intensive and distracting to instructional delivery
  - Epstein (2010): Teachers may be resistant to direct observation because they believe they cannot teach and collect data simultaneously
  - Few teachers have training in direct observational recording
Practice in your classroom, on your kids, on your spouse...you may even have fun while collecting some valuable data!
Step 2: Collect Baseline Data

- What are baseline data?
  - Data collected prior to intervention being in place
- Why collect baseline data?
  - Comparison to intervention data—is intervention working?
- When and how long do I collect baseline data?
  - No rules, 3-5 days recommended
- How do I collect baseline data?
  - see Step 1: Select method of measurement (intervention dependent)
Step 3: Implement Intervention and Continue Data Collection
Step 4: Determine Student Responsiveness

• Do data indicate the student is responding to intervention?
  – Graph data and observe graph to determine:
    • How does the behavior compare to baseline?
    • Is the behavior better or worse?
    • Is the behavior stable?

No standard protocol or rules
Is Student Engagement Improving?

![Chart showing student engagement comparison between Baseline and Intervention periods from November 23 to December 4.](chart.png)
Step 5: Modify based on Responsiveness

**NONRESPONDERS**

- **Goal**
  - Lower the goal
- **Frequency**
  - Increase the frequency of intervention
- **Feedback**
  - Increase the frequency of feedback
- **Reinforcement**
  - Add a reward for meeting the daily goal
  - Provide reward choice
- **Add Components**
  - Self-graphing
  - Prompts/incidental teaching
  - Check-Ins

**RESPONDERS**

- **Goal**
  - Raise the goal
- **Frequency**
  - Decrease the frequency of intervention
- **Feedback**
  - Provide less frequent feedback
- **Reinforcement**
  - Increase the contingencies (e.g., must meet goal 3 days in a row to receive reward)
  - Change the reward, provide choice
  - Fade to praise only
- **Remove Components**
Current Research
Touch the scores for A.

The user can click on the behaviors and a bubble pops up containing a definition/question.

Clicking done will take the user back to the home screen.
After the teacher has rated (aqua), she can touch this icon and it will show the student ratings (orange).
Data-Based Decision-Making

**DATA-BASED INDIVIDUALIZATION (DBI) FORM**

**Instructional Activity/Content Area:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Goal</th>
<th>Interval Length</th>
<th>Feedback</th>
<th>Reinforcement</th>
<th>Responder or Nonresponder?</th>
</tr>
</thead>
<tbody>
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Done
Student outcomes using data-based decision-making within a self-monitoring intervention app

- 16 general and special educators (and one student per teacher)
- Positive behavior improved significantly from baseline to intervention ($p < .001$); on average 19 percentage points
- Changing the goal was more effective than changing the interval length

Final Thoughts: It’s not really about the technology
It’s about effective practices!

When students are more engaged, they are more likely to be learning!
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