



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

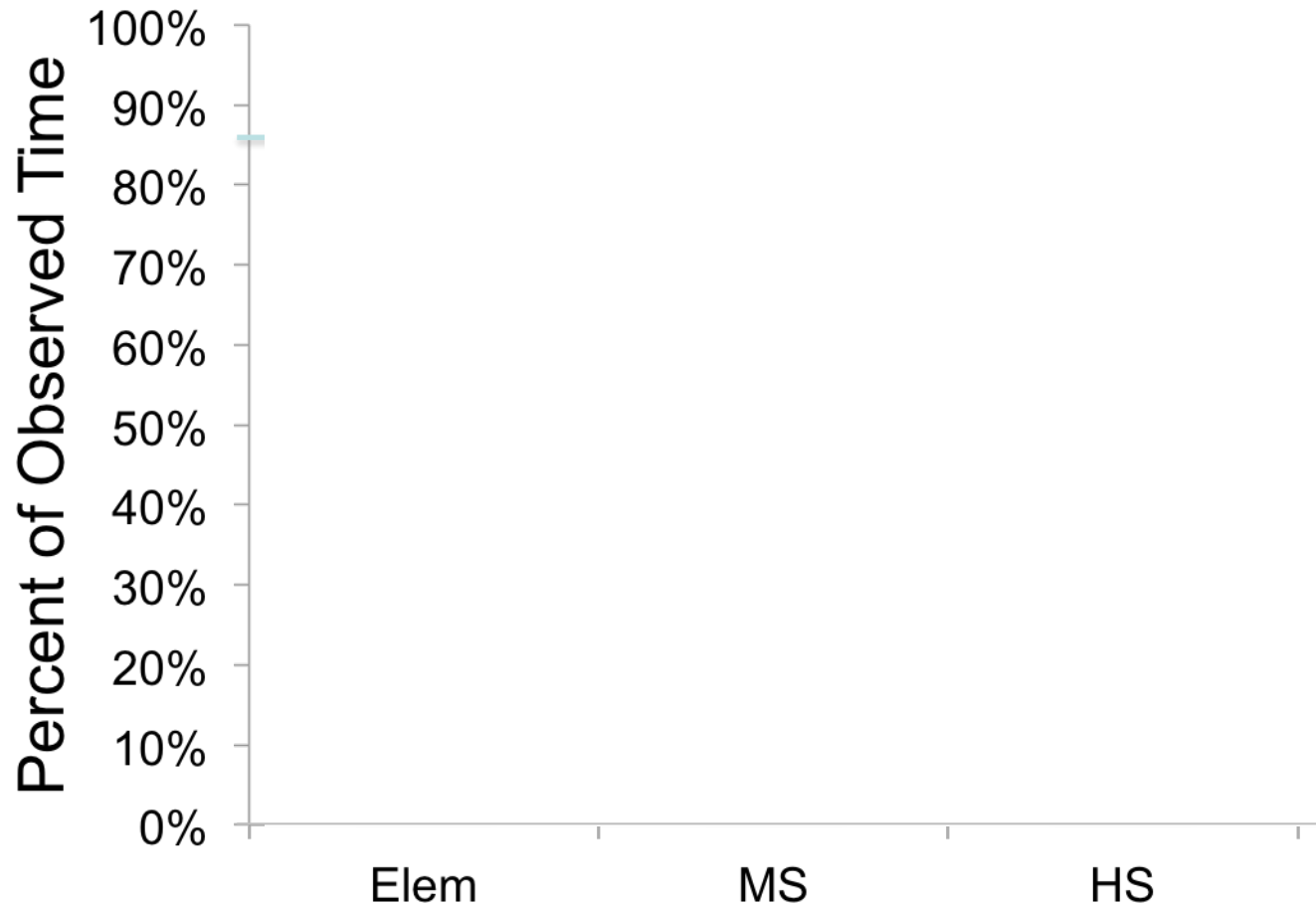
Consider the degree to which teachers provide:

- 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**

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

Not teaching = wasted instructional time	% of 15 min “Not Teaching”	<i>Instruction Time Not Used (no teaching or monitoring)</i>			
		Per Hour	Per Day	Per Month	Per Year
Elementary	10%	6 min	30 min	2 days	18 days
Middle School	10%	6 min	30min	2 days	18 days
High School	28%	16.8 min	1.40 hours	5.6 days	2.4 months

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?

Rate per minute

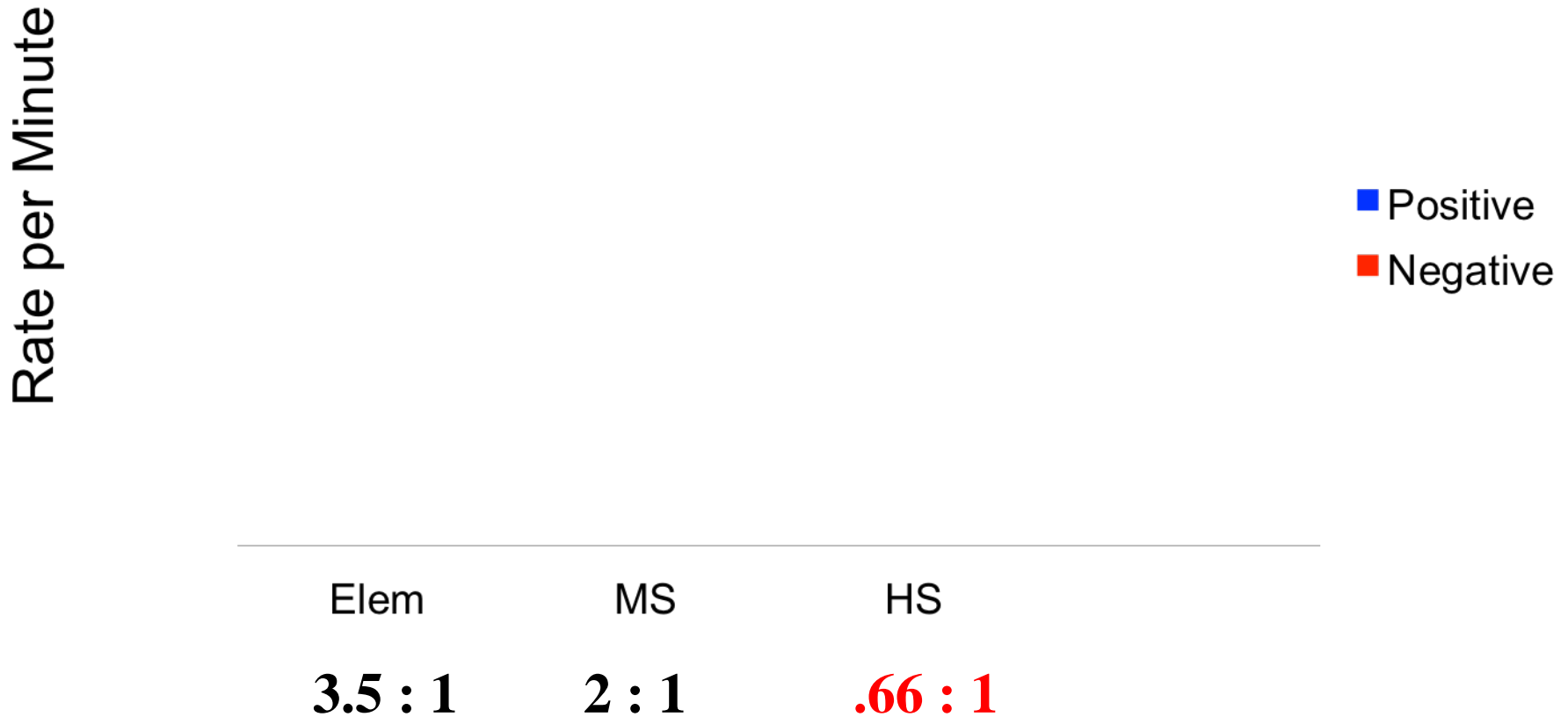
Elem

MS

HS

(Scott, Hirn, & 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	Engaging	Formative Feedback
<ol style="list-style-type: none">1. Provide a definition of effective instructional practices2. Model and demonstrate a range of possibilities	<ol style="list-style-type: none">1. Discuss practicality with all and ask about relevant adaptations2. Consider roadblocks3. Practice and role play with real situations	<ol style="list-style-type: none">1. Peer monitoring and formative feedback2. Goal setting and regular discussions

Data

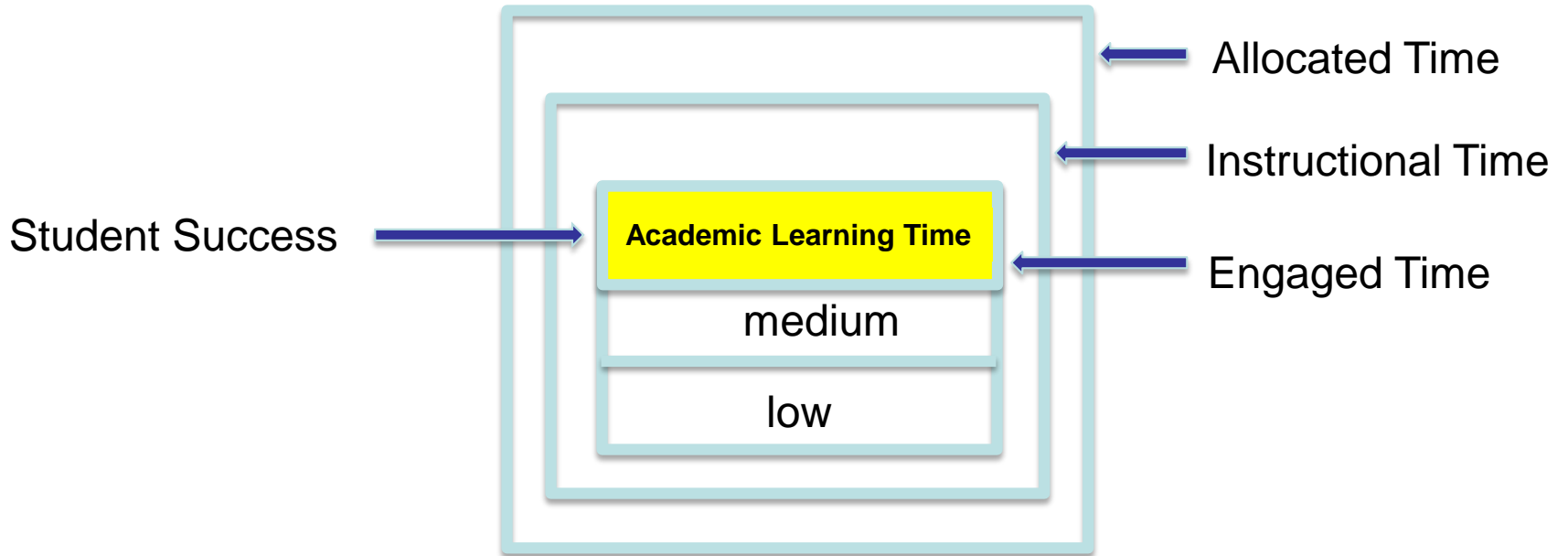
- This is coming – collecting data now



Student Behavior



Academic Learning Time



Increasing Time

Allocated

- Extend length of school day & class period

Instructional

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

Engaged

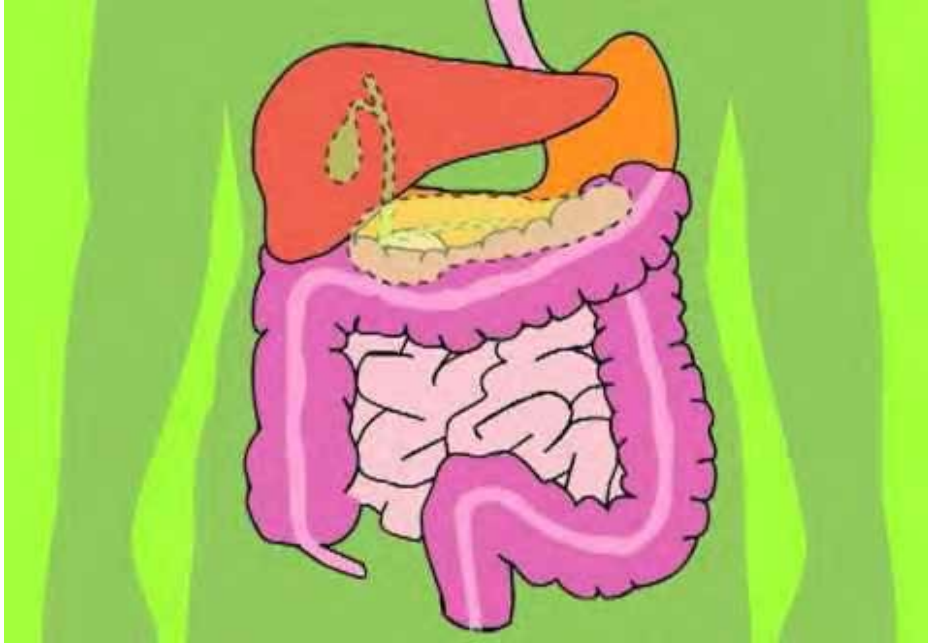
- Evidence-based instruction (e.g., OTRs, feedback)
- Self-regulation & other behavioral strategies

Academic Learning

- Increasing student rate of success (e.g., deliberate practice)



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 your student engagement is improving in the classroom?

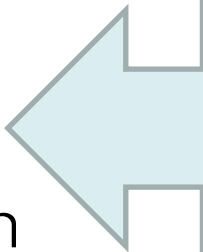


Formative Evaluation

- 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



Selection depends upon the intervention being implemented & behavior observed



Direct Behavior Rating



Direct Behavior Rating (DBR)

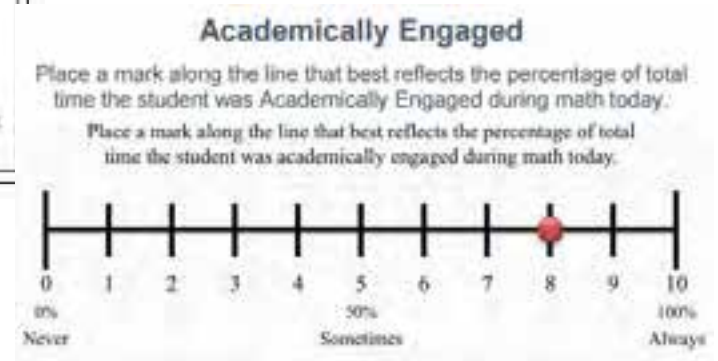
- Involves teachers rating a student's behavior on 0-10 scale
 - **Direct**
 - Ratings recorded immediately at end of observation session
 - **Behavior**
 - Behavior is specific and operationally defined
 - **Rating**
 - Ratings are conducted repeatedly and follow a 0-10 scale

www.directbehaviorratings.org

Direct Behavior Rating

Direct Behavior Rating (DBR) Form: 3 Standard Behaviors		
Date: M T W Th F	Student: Rater:	Activity Description:
Observation Time: Start: _____ End: _____ <input type="checkbox"/> Check if no observation today	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.	

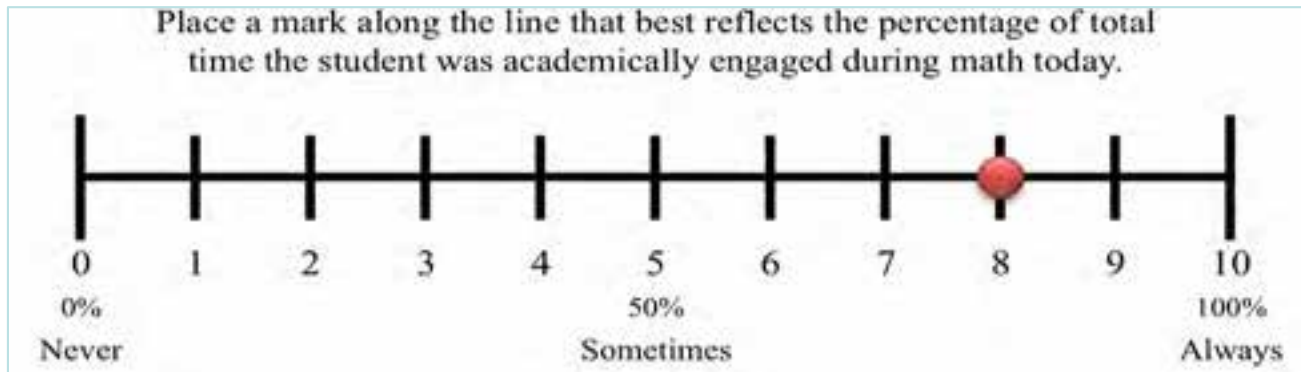
- Simple
- Inexpensive
- Efficient



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

Direct Behavior Ratings

Older
Student
Version



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



0 1 2



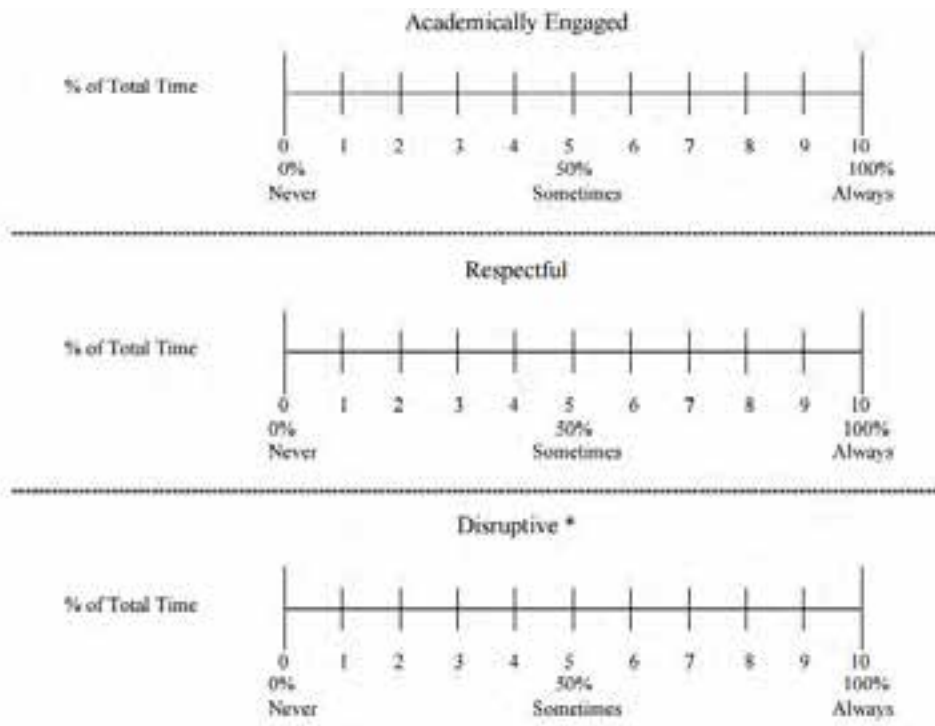
3 4 5 6 7



8 9 10

Younger
Student
Version

Direct Behavior Rating: Standard Form



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

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)

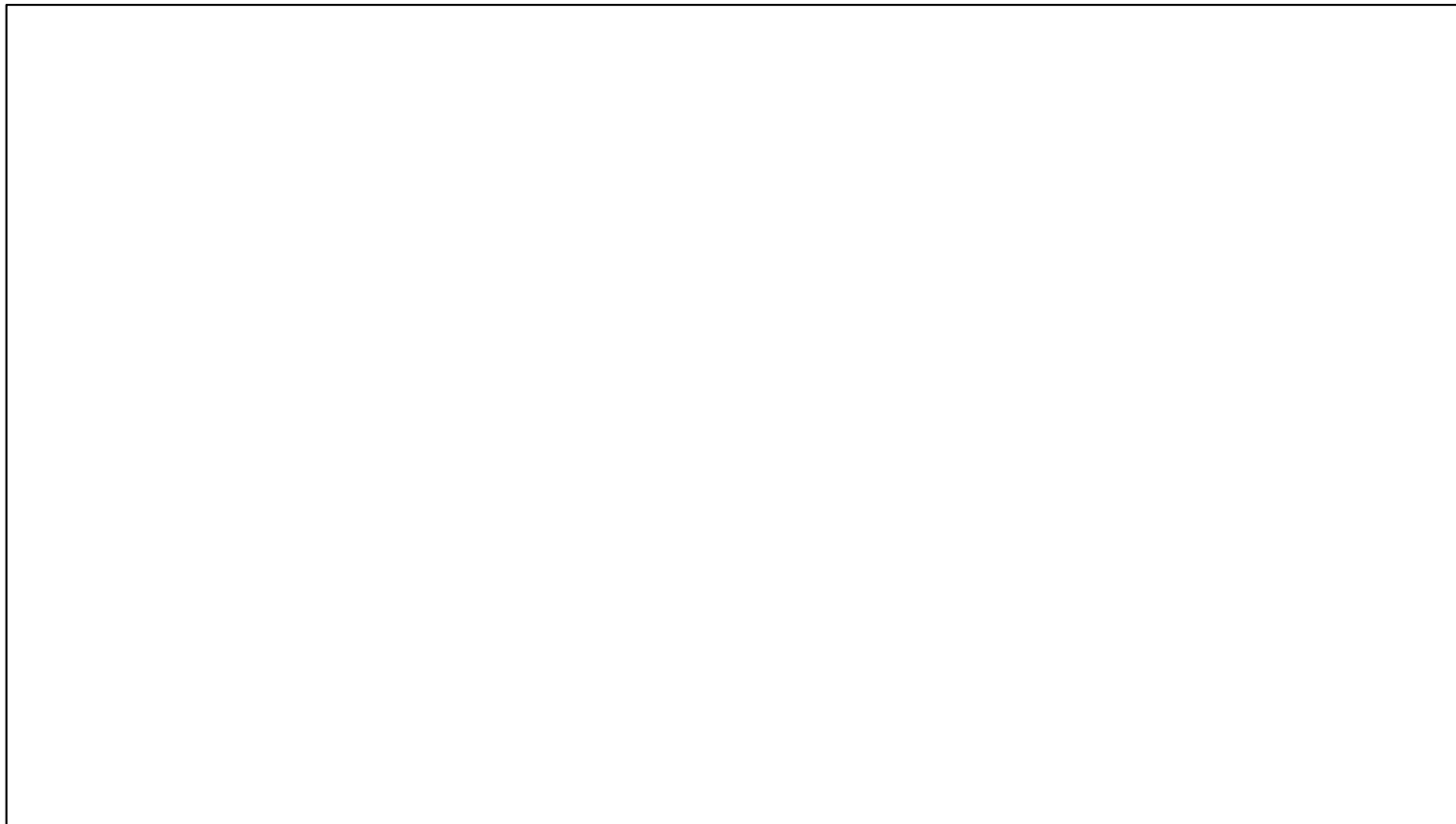
(Briesch, Kilgus, Chafouleas, Riley-Tillman, & Christ, 2013; Chafouleas, 2011, Chafouleas, Kilgus, & Hernandez, 2009; Riley-Tillman, Chafouleas, Briesch, & Eckert, 2008; Riley-Tillman, Chafouleas, Sassu, Chanese, & Glazer, 2008)

DBR Connect

Scale: Academically Engaged

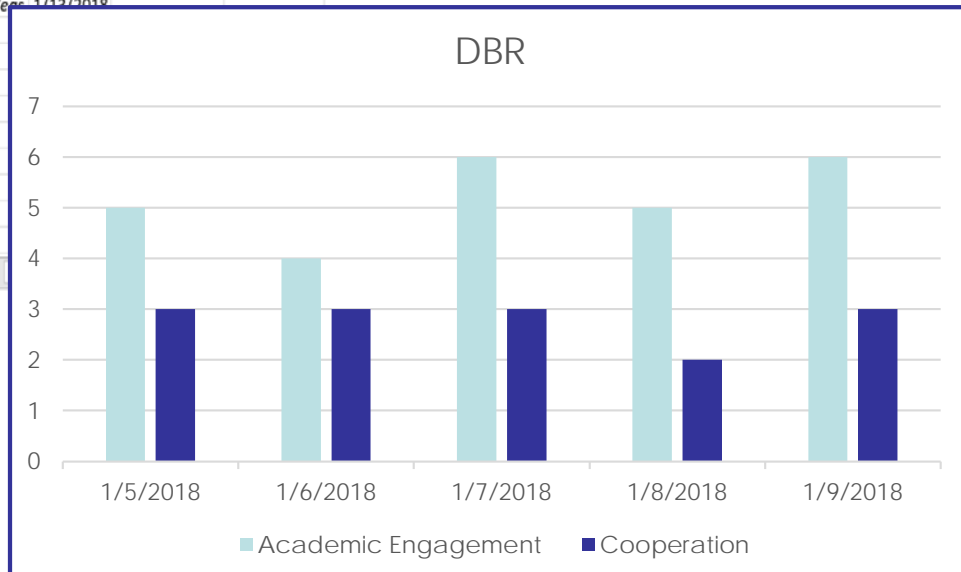
Developmental Milestones	Goals	Engagement and Core	Planning, Organization and Implementation	Monitoring
DBR Connect 1.0 - 2010	DBR Connect 2.0 - 2012	DBR Connect 3.0 - 2014	DBR Connect 4.0 - 2016	DBR Connect 5.0 - 2018

Using Technology to Support DBR



Using Technology to Support DBR

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Student:	Izzy		Teacher:	Ms. Lillian		Activity:	Centers		Length of Session: 30 minutes					
2														Academic Engagement	Cooperation
3	Directions: Next to each date, rate Izzy's behavior on a scale of 0-10 and hit "enter"												1/5/2018	5	3
4													1/6/2018	4	3
5	Academic Engagement: Izzy is working on the assigned task.												1/7/2018	6	3
6													1/8/2018		
7	Never			Sometimes						Always			1/9/2018		
8	0	1	2	3	4	5	6	7	8	9	10	1/11/2018			
9													1/12/2018		
10	Cooperation: Izzy is communicating with peers in an appropriate way, providing positive comments to her peers, & offering ideas												1/12/2018		
11															
12	Never			Sometimes						Always					
13	0	1	2	3	4	5	6	7	8	9	10				
14															
15															
16															
17															
18															
19															





Systematic Direct Observation

Momentary Time Sampling

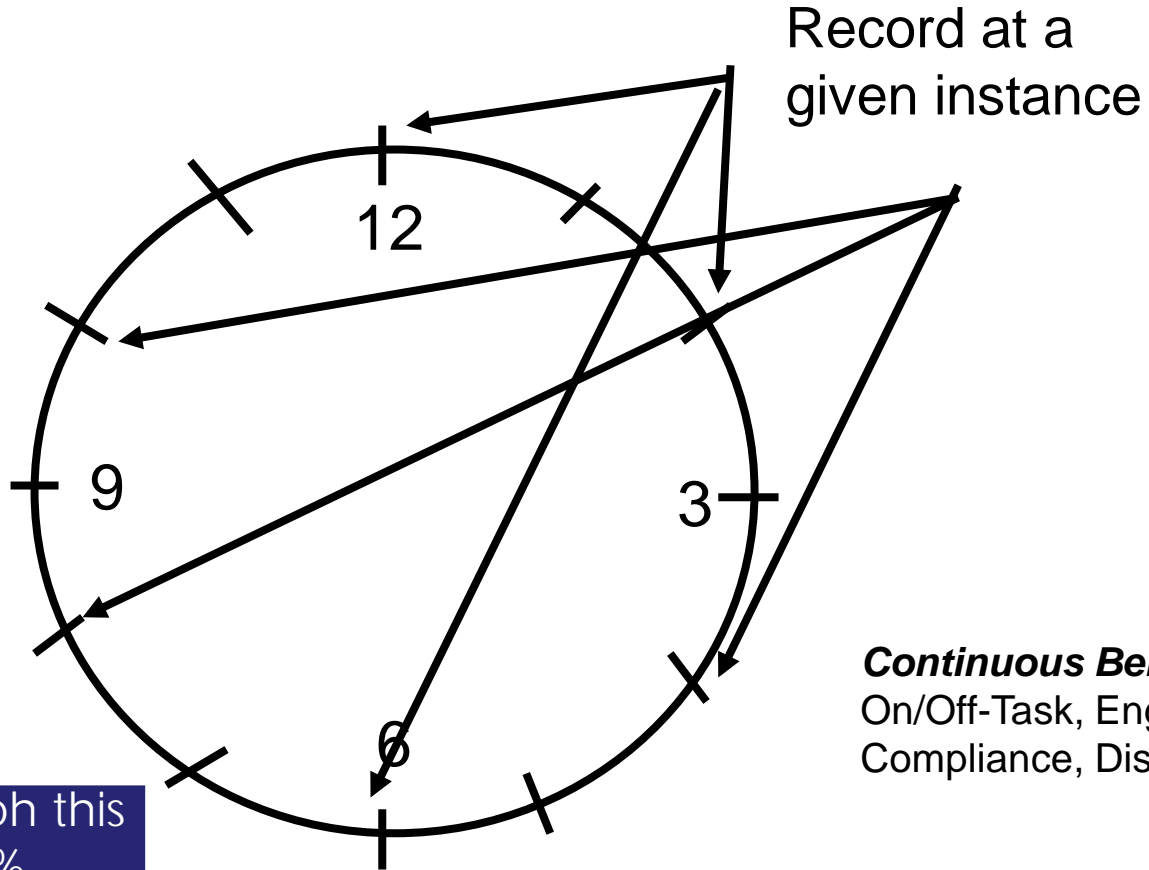


Momentary Time Sampling

Ideally 20

Interval	Occur	Did not Occur
1	X	
2		X
3	X	
4		X
5	X	
6		X
7	X	
8		X
9	X	
10	X	
	6/10 = 60%	

Graph this %



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

Let's Practice!

Time	Yes	No
:10		
:20		
:30		
:40		
:50		
1:00		
1:10		
1:20		
1:30		
1:40		
TOTAL		



<https://www.online-stopwatch.com/countdown/>

Technology to Support Momentary Time Sampling



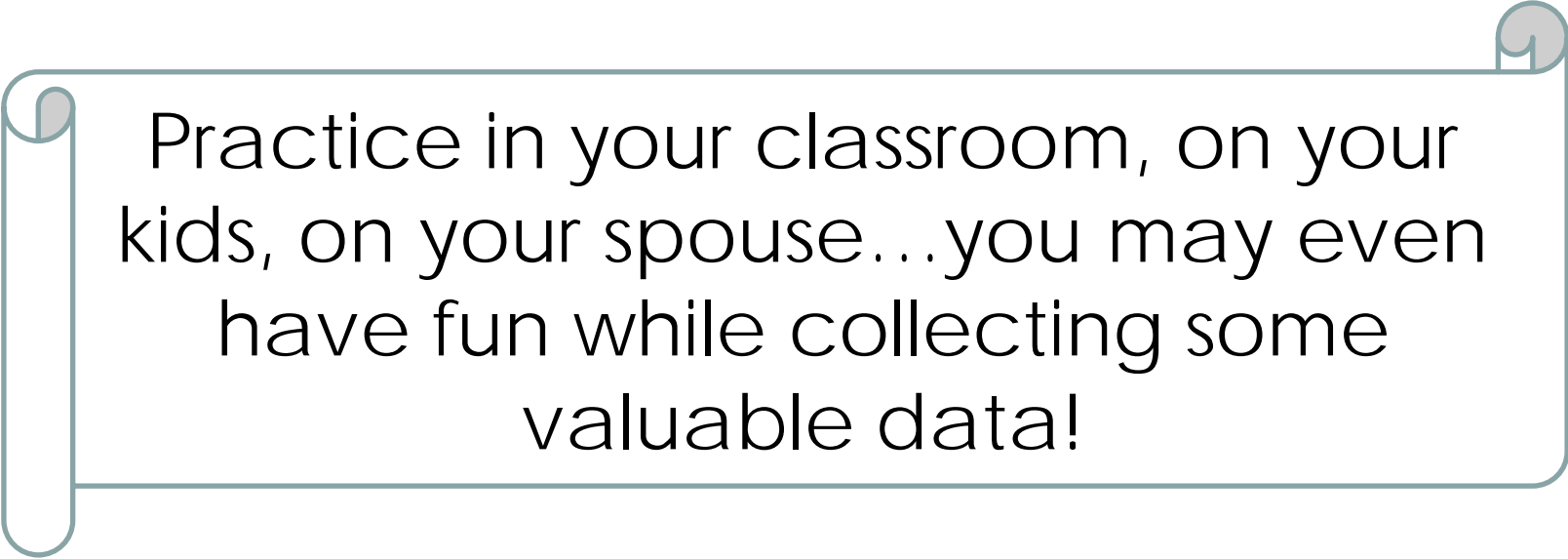
Systematic Direct Observation

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!

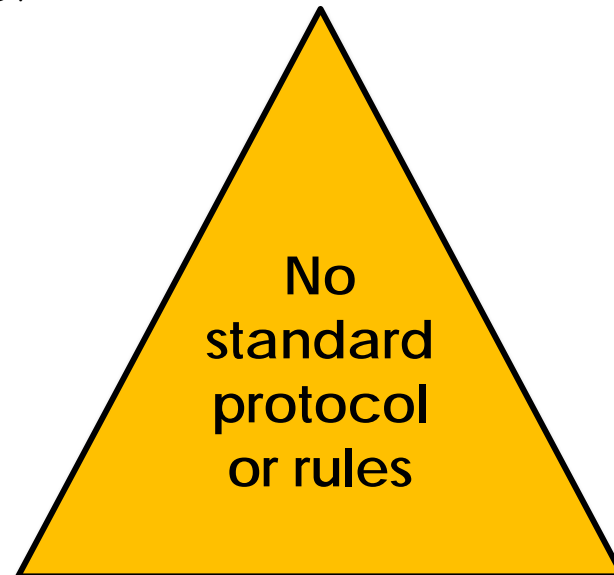
Step 2: Collect Baseline Data

- 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)

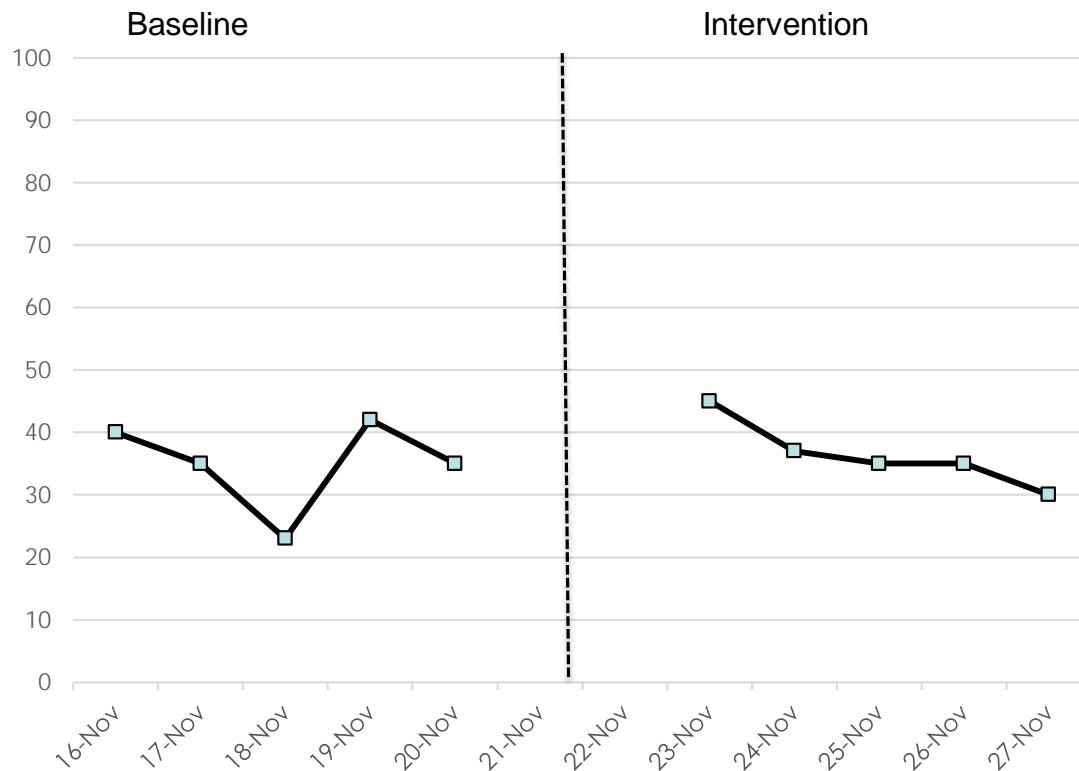
Step 3: Implement Intervention and Continue Data Collection

Step 4: Determine Student Responsiveness

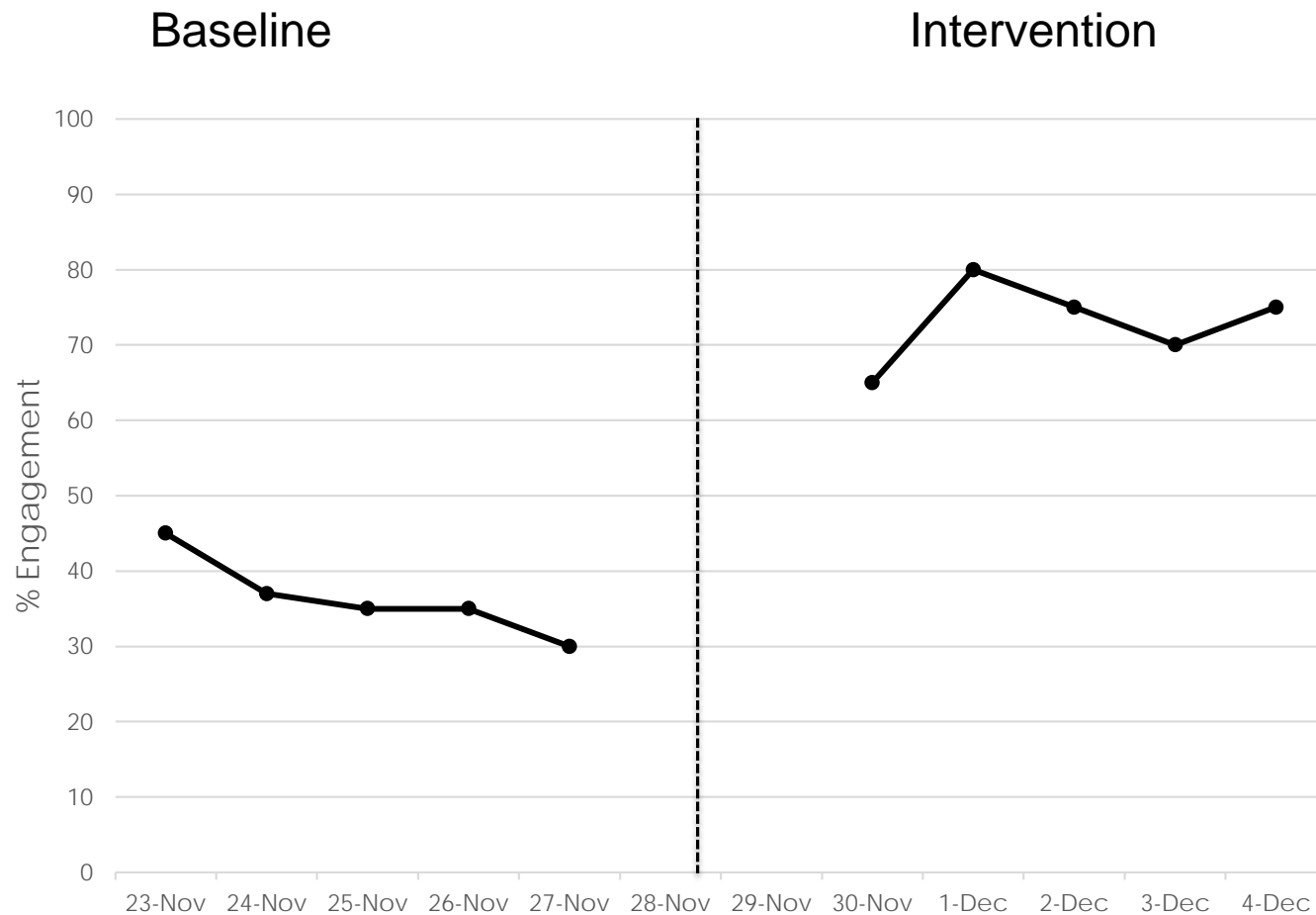
- Do data indicate the student is responding to intervention?
 - Graph data and observe graph to determine:
 - How does the behavior compare to baseline?
 - Is the behavior better or worse?
 - Is the behavior stable?



Is Student Engagement Improving?



Is Student Engagement Improving?



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





Student

Allison

5/29/15

Touch the scores for A.

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

Be Respectful

Never

A Little

Sometimes

A Lot

Always

0

1

2

3

4

Be Responsible

0

1

2

3

4

Be Ready

0

1

2

3

4

Done

Clicking done will take the user back to the home screen



Teacher

Touch the scores for A.



Be Respectful

Be Responsible

Be Ready

	Never	A Little	Sometimes	A Lot	Always
Be Respectful	0	1	2	3	4
Be Responsible	0	1	2	3	4
Be Ready	0	1	2	3	4

After the teacher has rated (aqua), she can touch this icon and it will show the student ratings (orange)



Done

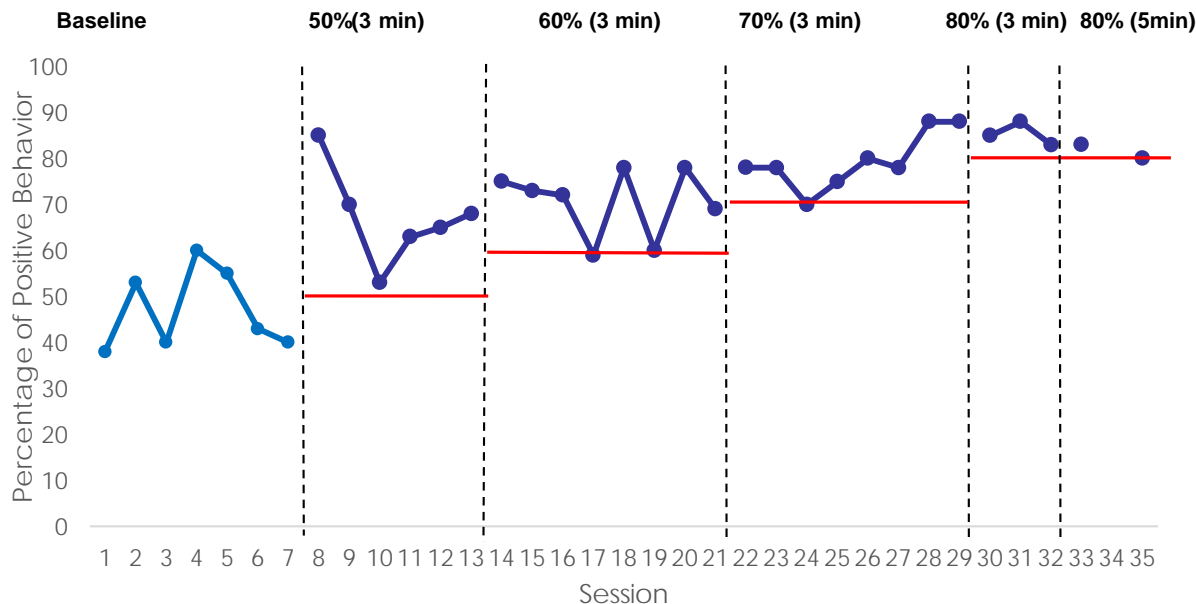
Data-Based Decision-Making



DATA-BASED INDIVIDUALIZATION (DBI) FORM

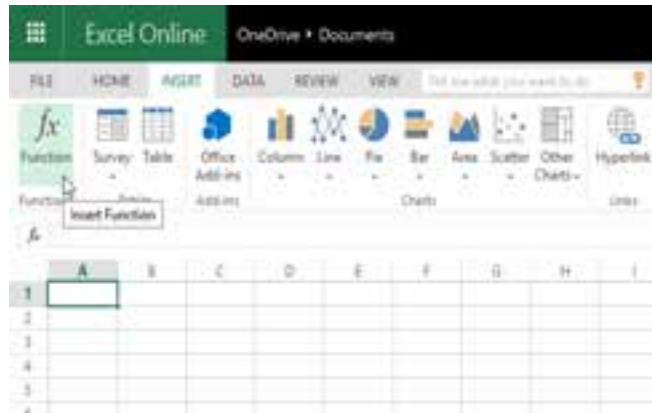
Instructional Activity/Content Area:					
Intervention Implementation Decisions					
Date	Goal	Interval Length	Feedback	Reinforcement	Responder or Nonresponder?

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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