

## USER FRIENDLY DATA COLLECTION (*REALLY*)

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## OVERVIEW

- *Why* take data
- *How* to take data
- *What* to do with the data once you've got them

## WHYTAKE DATA?

- Looking at data can:
  - indicate if an intervention/teaching strategy is working (e.g., actually reducing or increasing the target behavior)
  - indicate when something needs to be modified or terminated
  - reveal information about what might be contributing to the presence of a challenging behavior

## WHYTAKE DATA? CONTINUED...

- Taking data can:
  - make us accountable for what we said we would do
  - motivate us to do better
  - make progress, or lack of, transparent to the entire educational team
  - allow other professionals and team members to help problem solve

## RISKS OF NOT TAKING DATA

- Continuing an *ineffective* intervention or strategy when *no actual change has occurred*
- Discontinuing an *effective* intervention or strategy because *positive changes are difficult to detect* (e.g., small/subtle changes, or subjective evaluation)
- Buying in to *pseudoscientific, fad* treatments with no evidence-base (e.g., dolphin therapy, facilitated communication, mega-vitamins, special diets, etc.)

## TYPES OF MEASURES & DATA COLLECTION

- **Narrative Records** –allow you to record information about the environment, antecedents, consequences, and other important variables
  - Useful for *challenging behaviors*:
    - collecting initial information
    - collecting information to help identify possible triggers and functions
    - helping to design an intervention
  - Useful for *other behaviors*:
    - keeping notes for yourself to share in meetings, parent nights, etc.

### COLLECTING NARRATIVE DATA FOR BEHAVIOR REDUCTION

- Samples of Narrative Records
- Antecedent Behavior Consequence Data

Date/Initials	Antecedent	Behavior	Consequence

- Data Analysis Card (DA Card)

Date/Time:	Student Name:	
Antecedents	Behavior (check only one)	Consequences
<ul style="list-style-type: none"> <li>___ given a direction</li> <li>___ asked to stop something (preferred or nonpreferred)</li> <li>___ request denied</li> <li>___ 1:1 time</li> <li>___ group time</li> <li>___ transition</li> </ul>	<ul style="list-style-type: none"> <li>___ hit a teacher/instructor</li> <li>___ hit a student</li> <li>___ threw object</li> <li>___ screamed</li> </ul>	<ul style="list-style-type: none"> <li>___ verbally reprimanded</li> <li>___ request repeated until complied</li> <li>___ physically assistance provided</li> <li>___ activity/demand ended</li> <li>___ ignored</li> </ul>

### COLLECTING NARRATIVE DATA FOR BEHAVIOR REDUCTION

- Make sure the data are useful and descriptive (e.g., “transition” in antecedent category might not be enough –instead “transition from preferred to non-preferred activity” might be more helpful)
- What to do with ABC/DA data?
  - Look for trends and patterns between:
    - Antecedents and Behaviors
    - Behaviors and Consequences
    - Antecedents and Consequences
  - Can calculate a baseline from these data

### COLLECTING NARRATIVE DATA FOR OTHER BEHAVIORS

- Ideas for keeping useful notes
  - Use **objective & descriptive language** –you might not remember specifically what “did awesome” meant 2 weeks later
  - 3x5 index cards in activity/student specific pouches or ziplocks and write down notes daily
  - Photocopy IEP goals and laminate. Place them in binder or folder per student or activity with a dry erase pen. Jot down notes daily. At end of week transfer or photocopy before wiping off.
  - Buy or make (stack several pieces of notebook paper under one piece of colored construction paper, fold in half and staple) several small notebooks in student specific colors and place in accessible spots
  - Buy a daily planner with a “notes” section to jot down important information

### HOW TO TAKE DATA

- Event Recording –continuous, count, rate/frequency, per opportunity/occurrence, etc.
- Recording Duration or Latency
- Time Sampling –allows you to record data for intervals during set periods of time
  - Whole-interval: divide observation period into small chunks (5-10 sec) & at end of interval record a + if the behavior occurred *continuously* for the whole interval (*good for behaviors that occur for long periods*)
  - Partial-interval: record if behavior occurred *at all* during the interval (*good for frequently occurring behaviors*)
  - Momentary Time Sampling: record if the behavior is occurring at the *end* of each interval
    - **Probably easiest for the classroom**
- Permanent Product –worksheets, spelling words, homework turned in, etc.

### TYPES OF MEASURES & DATA COLLECTION CONTINUED...

- Per Occurrence
  - Basically a “count”
  - Not very helpful, does not give you any other information **unless**
    - You include other information (e.g., time of day using something like a scatterplot)
  - Most appropriate when a behavior does not occur very frequently

### SAMPLE OF SCATTERPLOT

Time	MON	TUES	WED	THUR	FRI
8-9					
9-10					
10-11					
11-12					
12-1					
1-2					
2-3					

- Fill in time block if behavior occurred at all
- May show some patterns

**Ask:**

- What is going on between 8-9 and 1-2 and MWF?

**Ask:**

- What is going on rest of the time?

*Usually behavior data are not this straight forward...*



TYPES OF MEASURES & DATA COLLECTION CONTINUED...

- o **Frequency/Rate** –combines count and the observation time (e.g., number of words spelled correctly in 2 minutes, number of aggressions in half hour)
  - Often used to track number of occurrences of challenging behavior in a given time period
  - Useful to check on fluency (e.g., how many correct math facts within a specified time, how many sight words correctly read in time period, etc.)
  - Not good for behaviors that occur at **very high rates** (e.g., vocal stereotypy, rocking, hand flapping, etc.)

COLLECTING RATE/FREQUENCY DATA

- o **Momentary Time Sample:** set a timer, motivaider, or watch to go off at regular intervals and record whether behavior is occurring at **end** of interval (e.g., when the timer goes off)
  - Good for taking data on several students at a time
  - Good for taking data on behaviors that occur for longer periods (e.g., on/off task, in/out of seat, some self stimulation behaviors)
  - Good for determining if a given behavior is happening more or less frequently (tells you if intervention is working)

SAMPLE MOMENTARY DATA COLLECTION

- o Simple Method:
  - hash marks in two categories (occurrence, non-occurrence)
    - Occurrence Non-Occurrence
    - |||||||
  - series of + and – per interval  
+ + + + + + + + + +
  - Coins, paperclips, poker chips moved from one pocket or stack to the other for nonoccurrence/occurrence (start with number of items equal to number of intervals for observation period)
  - Convert into % by dividing # correct (or # incorrect) by total number of intervals
- o More Complex: set up data sheet with intervals

SAMPLE MOMENTARY DATA COLLECTION CONTINUED...

- o 1 minute momentary sample data of “on task” behavior over 10 minutes following intervention.
- o What do these data tell you?

Date	3/1	3/1	3/3	3/4	3/5	3/6	3/7	3/8	3/9	3/10
Initials	TS	RL	TS	TS	RL	TS	RL	RL	TS	RL
1	-	-	-	-	-	-	-	-	+	+
2	-	-	+	+	+	+	+	+	+	+
3	-	+	+	+	+	+	+	-	+	+
4	-	+	-	-	+	+	+	+	-	+
5	-	-	+	+	+	+	+	+	+	+
6	+	+	+	+	+	-	+	+	+	+
7	-	-	-	+	+	+	+	+	+	+
8	-	+	+	-	-	+	+	+	+	+
9	+	+	+	+	+	+	+	+	+	+
10	-	+	+	+	+	+	+	+	+	+
%	20%	60%	70%	70%	80%	80%	90%	90%	90%	100%

MOMENTARY TIME SAMPLING ACTIVITY SCORE IF CHILD IS ON TASK AT END IF THE INTERVAL



MOMENTARY TIME SAMPLING ACTIVITY SCORE IF CHILD MAKES ANY PLAY STATEMENT AT END IF THE INTERVAL



TYPES OF MEASURES & DATA COLLECTION CONTINUED...

- o **Duration** –the amount of time a student engages, or does not engage, in a behavior
  - **total duration** – the total amount of time engaged (or not) in target behavior per observation
  - **Duration per occurrence** –amount of time engaged in each occurrence of target behavior per observation
  - **Useful for measuring:**
    - o if a behavior is occurring for *too long* (e.g., a tantrum)
    - o if a behavior is occurring for *too short* of a time (e.g., remaining on task/in seat for only 30 seconds, etc.)
    - o behaviors occurring at *very high rates* (e.g., time spent rocking, hand mouthing, etc.)
    - o behaviors that should be sustained continuously over a time period (e.g., completing a task/worksheet, cooperative-play, playing in proximity to peers, etc.)

SAMPLE DURATION DATA SHEET

Item: Time out of seat during independent seatwork (30 minutes total)

1.	1	1	3	1	3.5	3
2.	1.5	1	1.5	1	2	1.5
3.	2	3	2.5	1		
4.	1	1		1		
5.	2	1		1.5		
6.	1	1.5		1		
7.		1				
8.						
9.						
10.						
Date	6/1	6/2	6/3	6/4	6/5	6/6
Staff	TS	TS	JM	TS	JM	JM
Total Min Out of Seat	8.5	9.5	7	6.5	5.5	4.5
% of Time Out of Seat	28%	32%	23%	22%	18%	15%

COMPARE DURATION TO SIMPLE COUNT

Date	6/1	6/2	6/3	6/4	6/5	6/6
Staff	TS	TS	JM	TS	JM	JM
Tally of Times Out Of Seat	HHH 1	HHH 11	lll	HHH 1	ll	ll

Item: minutes out of seat per 30 minute period

1.	1	1	3	.5	4	4.5
2.	.5	1	2	1	4.5	3.5
3.	1	1	3	.5		
4.	2	.5		.5		
5.	1	.5	1			
6.	.5	1	.5			
7.		1				
8.						
9.						
10.						
Date						
Staff						
Total Time Out of Seat	6	6	8	4	8.5	10
% of Time Out of Seat	20%	20%	26%	13%	28%	30%

What is the main difference that you can see between the two?

• **Number** of occurrence might be going **down** **BUT** **Duration** of time out of seat is going **up**

TYPES OF MEASURES & DATA COLLECTION CONTINUED...

- o **Latency** –the amount of time that passes between the instruction and the response (e.g., took student 1 minute to comply following being asked to “sit down”)
  - **Use for measuring:**
    - o how long it took a student to comply with a direction
    - o how long a student waited before responding to a peer
    - o If a student waited long enough before answering a question or reacting to a social situation

SAMPLE LATENCY DATA SHEET

Item: Latency: seconds between direction and compliance  
Goal: comply within 3 seconds

1.	8	7	5	2	3	2
2.	7	5	3	4	1	3
3.	8	6	5	3	2	1
4.	6	2	2	3	4	1
5.	2	4	2	1	1	2
6.	6	6	3	2	1	1
7.	8	5	1	6	2	1
8.	5	3	5	4	4	2
9.	8	4	3	2	3	3
10.	7	6	3	1	2	1
Date	6/1	6/2	6/3	6/4	6/5	6/6
Staff	TS	TS	JM	TS	JM	JM
Average Latency	6.5 sec	4.8 sec	3.2 sec	2.8 sec	2.3 sec	1.7 sec

TYPES OF MEASURES & DATA COLLECTION CONTINUED...

- o **Percentages** –expresses the amount of behavior in terms of the number of opportunities for the behavior to have occurred (e.g., correct responses on 80% of questions, responded to peer initiated greeting on 75% of opportunities, etc.)
  - **Drawbacks:**
    - o changes in percentage can lead to false conclusions about progress (e.g., correctly identified printed name 50% of opportunities on Monday (5/10) and 60% on Tuesday (12/20)- looks like improvement, but total number of errors increased)
    - o does not reflect difficulty level (% may decrease as difficulty level increases)
  - **Best for:**
    - o behaviors with consistent opportunities (e.g., there are **always** 10 spelling words)
    - o Behaviors that cannot occur without the opportunity (e.g., greetings, answering questions)

### HOW TO CHOOSE A DATA COLLECTION METHOD

- Needs to be
  - efficient -something you and your staff can reasonably do
  - discreet
  - meaningful –produce useable information

### CREATIVE & EASY DATA COLLECTION

- White board
- Sticky notes
- Masking or large labels tape on leg
- Paperclips from one pocket to the other/elastic hair bands from one wrist to another
- Golf counter/stitch counter
- Tickets or poker chips
- Clipboards
- Laminated sheets
- Data sheets on rings

### STRATEGIES TO MAKE DATA COLLECTION EASIER

- Put specific data sheets on clipboards in the area where it will be needed
- Hang or velcro small white erase boards in areas where paper and pencil data might be difficult and transfer later
- Put data sheets into a binder, or folders, with clearly labeled tabs
- Assign people to be responsible for
  - Taking certain kinds of data
  - Taking data for specific kids
  - Taking data during specific times of the day

### CONSIDERATIONS IN TAKING DATA

- Should data be publically displayed?
  - e.g., might not be appropriate to record number of toileting accidents of a 4<sup>th</sup> grader in way that everyone can see)
- Will the data affect the student?
  - e.g., if a student sees you taking data will it change his/her behavior)
- Are you measuring what you intended to?
  - e.g., will counting the number of times a student picks items up off the floor and puts them in his/her mouth be accurate? How clean is the floor?

### CONSIDERATIONS FOR GOALS & MASTERY CRITERIA

- Make sure your data collection method matches the criteria set in goal
  - E.g., if you require 80% accuracy, having only 3 data points won't cut it
- Set mastery criteria based on needs for accuracy
  - Standard Criteria: 80% accuracy for 5 consecutive days, across 2 different people
  - Loose criteria: 80% accuracy for 8 out of 10 days, across 2 different people (good for students who might be a little less consistent)
  - Strict criteria: 100% of all opportunities (good for safety skills, money skills, etc.)

### HOW TO INTERPRET DATA

- If you see the intended/desired trend, keep going
  - Suggests intervention is working
  - Watch for mastery to capitalize on learning trend by moving on to next step or skill
  - As mastery occurs work on generalization
  - Once mastery occurs be sure to conduct maintenance checks



THANKS!!!

- Questions?

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