

**Evaluating Effectiveness**  
Designing Data-Driven Interventions



Spring 2017

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**SUPPORTING SCHOOLS AND STUDENTS TO ACHIEVE**  
SHERRI YAMBA, SUPERINTENDENT OF PUBLIC INSTRUCTION

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Think of some strategies you use to manage behavior in your classroom...



How do you know if your strategies are effective?

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Consider these questions...

- How do you define effective?
- What are the costs of implementation?
- Did the student's life improve?
- Do you have any evidence to support your claim?



*Extraordinary claims require extraordinary evidence.*

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## How to Ensure Stellar Data are Collected

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### 1. Begin with Clearly Defined Behavioral Targets



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## 2. Train Quality Observers

### Participant Observers

- Naturally part of the environment in which the behavior is being observed
  - Mom, teacher, the student

### Non-Participant Observers

- Individuals who are not typically present in the observational setting
  - Principal, specialist, behavior analyst...

***The quality of your training & the quality of your target will affect the validity of your data!***

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## 3. Minimize Reactivity

*Reactivity effects also intrude upon validity of your observations*



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## 4. Select Appropriate Settings for Observation

- Natural environment
- Role play situations
- Contrived/analog settings

*How might validity of measures be affected by each type of setting?*



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5. Balance what, where & how to record



*The goal is to offer a clear depiction of the actual occurrence!*

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Observation & Measurement Systems

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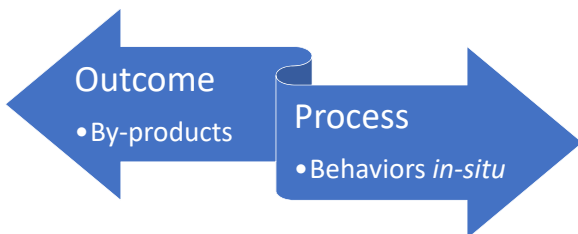
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TWO Types of Measurement Systems



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### A. Outcome Observation



**Pros**

- Convenient
- Requires no observer

**Cons**

- Outcomes may have been produced by alternate responses

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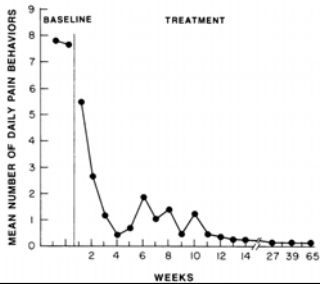
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### B. Process Observation



**Pros**

- Can accommodate a wide range of responses
- Changes are observed as they occur, and we can intervene at will

**Cons**

- Requires a precise system to account for multiple responses dimensions

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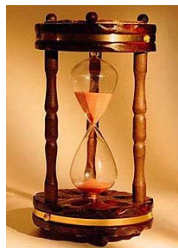
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### 5 Aspects of Behavior that can be Measured

- **Topography** – specific movements involved
- **Frequency** – number of instances that occur in a given period of time
- **Duration** – length of time a response lasts




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5 aspects of behavior that can be measured



OR...



- **Latency** – time between occurrence of a stimulus and the response produced by that stimulus
- **Intensity** – force of a response; physical effect the response has on the environment

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Measuring Ongoing Behavior

(Process Observation)

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A. Continuous Recording

- Every instance of behavior is counted
  - **Event-based**
    - Frequency
    - Rate
  - **Time-based**
    - Duration
    - Latency
    - Inter-response time

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B. Discontinuous Sampling

- To obtain an ESTIMATE of the time a target behavior occurs
- Only subset of behaviors are counted
- Perfect when it is not feasible to record every occurrence of behavior

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**Partial Interval Recording**

- Only a single instance of behavior must be observed at ANY point during interval

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Min.	10"	20"	30"	40"	50"	60" s
1	+	+	-	+	+	-
2	-	+	+	+	-	+
3	+	+	+	+	+	+
4						
5						
6						
7						

Name: Theresa

Date: 01/30/07

**Target Behavior:** rocking - fluid forward and backward motion of the upper body while sitting or standing with both feet on the floor; does not include times when music is playing

+ = occurrence  
 - = non occurrence

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**Partial Interval Recording**

- Only a single instance of behavior must be observed at ANY point during interval

**Whole Interval Recording**

- Target behavior must occur throughout **entire** interval

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Min.	10"	20"	30"	40"	50"	60" s
1	-	+	+	-	+	+
2	+	+	+	+	+	-
3	+	-	-	-	+	+
4						
5						
6						
7						

Name: Bobby Date: 01/30/17

**Target Behavior:** on-task – sitting in assigned seat with academic tasks and completing assigned work (e.g., writing on worksheet, looking down at book); OR looking at teacher for help with hand raised

+ = occurrence  
- = non occurrence

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**Partial Interval Recording**

- Only a single instance of behavior must be observed at ANY point during interval

**Whole Interval Recording**

- Target behavior must occur throughout **entire** interval

**Momentary Time Sampling**

- Target behavior must occur at some precise point during interval

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	5	10	15	20	25	30 (min)
1	+	+	+	+	+	+
2	-	+	-	+	+	-
3						
4 (hrs)						

Name: Robert

Date: 01/30/17

Target Behavior: Watching television – sitting in front of the television while it is on with both eyes facing forward

+ = watching  
- = not watching

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Exercise:  
Side-by-Side  
Behavioral  
Observation  
Systems

**DIRECT OBSERVATION GROUP EXERCISE**

Target Behavior & Operational Definition: \_\_\_\_\_

Preceding Event: \_\_\_\_\_

Duration: \_\_\_\_\_

**INTERMITTENT TIME SAMPLES** (RECORD IF BEHAVIOR OCCURS AT THE END OF EVERY 5 SECS)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Total Interval Number: \_\_\_\_\_ % of Interval Number = (Calculate total / 25 \* 100%) \_\_\_\_\_

**PARTIAL INTERVAL RECORDING** (OBSERVE 5 SECS THEN MARK - IF BEHAVIOR OCCURS AT ANY POINT DURING THE 5 SECS)

Preceding Event/Condition: \_\_\_\_\_

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Total Interval Number: \_\_\_\_\_ % of Interval Number = (Calculate total / 25 \* 100%) \_\_\_\_\_

**WHOLE INTERVAL RECORDING** (OBSERVE 5 SECS THEN MARK - ONLY IF BEHAVIOR OCCURS THROUGHOUT THE ENTIRE 5 SECS)

Preceding Event/Condition: \_\_\_\_\_

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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Total Interval Number: \_\_\_\_\_ % of Interval Number = (Calculate total / 25 \* 100%) \_\_\_\_\_

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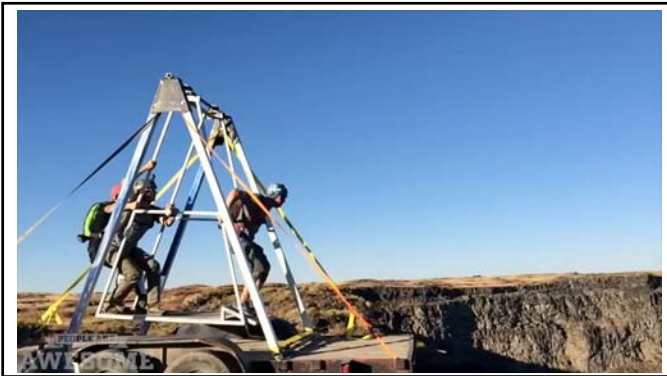
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Thank you!!



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