DAVIS SCHOOL DISTRICT

SPECIAL EDUCATION DEPARTMENT

DATA COLLECTION METHODS

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BEHAVIOR OBSERVATION

TIME SAMPLING

DESCRIPTION:

While there are many formats for Behavior Observations, the basic idea is that the behavior would be directly observed for a specified amount of time. During an observation, the observer may use several different methods including, but not limited to, ABC recording, Frequency, Momentary Time Sampling and Intensity / Duration.

EXAMPLES:

Any behavior the team would like to observe for evaluation or progress monitoring needs.

SPECIAL CONSIDERATIONS:

Due to time constraints while observing, the team must consider that the observation is a "snap shot" of a student's day. The observation may not be representative of a student's day as a whole.

SUMMARIZING THE DATA:

If the team is using the information as part of the functional assessment, the team should look at the patterns across behavior, such as a certain time of day, activity occurring, or antecedent observed. If the team is using the information to monitor the progress of a Behavior Intervention Plane, the data should be summarized as a frequency count.

INTERVAL RECORDING

DESCRIPTION:

Interval recording documents whether a behavior occurred during a particular period. In order to determine this, an observation period is divided into brief intervals. At the end of each of these, the observer records whether or not a behavior has occurred. There are two types of interval recording: whole and partial interval. When utilizing whole-interval recording, an observer indicates whether the behavior occurred during the entire time. (Example: A student worked on an assignment during an entire thirty-second interval.) When utilizing partial-interval recording, an observer indicates whether the behavior occurred at any point during the time interval. (Example: A student worked on an assignment during fifteen seconds of a thirty-second interval. The record indicates that the behavior occurred.)

EXAMPLES:

Interval recording is used when it is difficult or impractical to constantly observe behavior.

Interval recording is used for continuous behaviors or for those behaviors whose onset and end are difficult to distinguish because the behaviors occur at such high rates.

-Whole-interval recording yields data on the total duration of the behavior.

-Partial-interval recording yields data on the proportion of the observations period that the behavior occurred.

Both whole and partial-interval data are reported in terms of the percentage of total intervals during which the behavior occurred (the number of intervals the behavior occurred / the number of intervals the behavior occurred + the number of intervals the behavior did not occur times 100).

SPECIAL CONSIDERATIONS:

Interval recoding often takes less time and effort, especially if the behavior occurs at a high frequency, because the observer records the behavior only once during the interval, regardless of how many times the behavior occurs. However, interval recording only provides an estimate of the actual number of times that a behavior occurs. If the intervals are too long (e.g., 1 hour), the results can overestimate the frequency of the behavior. The shorter the interval, the more accurate representation of how often the behavior is occurring. For example, if aggression occurred once per hour in a 5-hour observation, a 1 hour interval recording form would conclude that the behavior occurred during 100% of intervals (1 occurrence in each 1 hour interval). However, if a ten-minute interval recording for was used, the results would conclude that the same behavior occurred during only 16.7% of intervals (5 of the 10 minute intervals contained behavior out of a possible 30 intervals).

HOW TO COLLECT THE DATA:

 Identify the observation period at the times during which the behavior is most likely to occur. Typically, observations last between ten minutes and one hour, although it is more accurate and less burdensome to use shorter periods.

Divide the observation period into equal intervals. These intervals are usually between five and fifteen seconds long.

Whole interval: Record an "x", plus sign, or check mark if the behavior occurred throughout the duration on the interval (e.g., if using ten-second intervals, the behavior must last the entire ten seconds). If the behavior did not occur for the entire interval, then record the nonoccurrence of the behavior with a minus sign or O. (Note: Nor more than one behavior at a time should be observed when using whole-interval recording, due to the necessity of observing during the entire interval.

Partial interval: Record with an "X", plus sign, or check mark if the behavior occurred at any point during the interval (e.g., if using ten second intervals, the behavior must occur at least once during that particular interval). If the behavior did not occur during the interval, record the nonoccurrence of the behavior with a minus or O. (Note: Multiple behaviors can be observed during partial interval recording because an observer only has to document whether a behavior occurred at all during an interval.)

Count the number of intervals during which the behavior occurred. Divide this number by the total number of intervals and multiply by 100 to determine the percentage of intervals during which the behavior occurred.

-Consider using a prompt to signal the beginning and end of intervals, such as an audio recording with beeps (headphones should be used!).

-If you find that you have unmarked intervals, you may have accidentally lost track during the observation and marked the wrong interval.

Keep in Mind: Interval recording provides an estimation of behavior.

-Whole-interval recording typically underestimates the overall duration of the behavior because if a behavior occurs-but not for the entire interval- it is not recorded or documented as occurring.

-Partial-interval recording typically overestimates the overall duration and underestimates the rate of the behavior because if a behavior occurs multiple times during an interval, it is still documented as occurring only once.

SUMMARIZING THE DATA:

When using interval recording, the level of the behavior is reported as the percentage of intervals in which the behavior occurred. To calculate the % of intervals, count the number of intervals in which the behavior was recorded, divide the total number of intervals during the observation period and multiply by 100.

Example: Mary was out of her seat during 4 out of 10 intervals. 4/10=.40 times 100= Mary was out of her seat during 40% of intervals recorded during the observation.

EVENT/FREQUENCY RECORDING

DESCRIPTION:

These methods involve counting the number of times a behavior occurs in a specific time period. Use these methods if the behavior can be easily counted and the behavior has a clear beginning and end. Do not use these methods if the behavior is occurring at such a high rate that an accurate count is impossible (e.g., pencil tapping) or the behavior occurs for extended periods of time (e.g., 2 tantrums, but the duration of each tantrum is one hour).

EXAMPLES:

Event recording is best for behaviors with a distinct beginning and end. Event recording has been used to measure behaviors such as:

-Task initiation and protests to task demands

-Inappropriate sitting and littering

-Correct and incorrect academic responses

-Tardiness

Teachers have used event recording to measure their own behaviors, such as:

-Praise statements

-Response opportunities provided to students

Event recording is best for behaviors that occur with enough in between to distinguish between the end of one response and the onset of another.

SPECIAL CONSIDERATIONS:

A frequency measure should be used only when the length of observation time is consistent from day to day (e.g., always 2 hours).

A rate measure should be used if the length of observation time varies from day to day (e.g., 60 minutes on Monday, 300 minutes on Tuesday).

SUMMARIZING THE DATA:

Frequency: At the end of the observation period, total number of occurrences. For example, Anna left her seat 5 times during 7th period.

Rate: Count the number of times the behavior occurred in the time observed. Divide the count by the length of time the behavior was observed. For example, if Anna kicked a peer 30 times in a 10 minute observation, the rate would be 3 kicks per minute (30 kicks divided by 10= 3 kicks per minute).

INTENSITY AND DURATION RECORDING

DESCRIPTION:

This method documents the length of the behavior by recording the time the behavior begins and ends. Use this method if your primary concern is the length of time the student engages in the behavior and the behavior has a clear beginning and end. Do not use this method if the behavior occurs with high frequency or the behavior starts and stops rapidly.

EXAMPLES:

Duration recording is appropriate for behaviors that have a distinct beginning and ending or for those that occur at such high rates that it would be difficult to get an accurate frequency count (e.g., number of taps during pencil, finger, or toe tapping).

Duration recording has been used to measure behaviors such as:

-On Task: Looking at the assignment, writing and asking questions related to the topic, using assigned materials, and following teacher directions   -Compliance to task demands
-Academic writing tasks

Consider collecting frequency data for the target behavior in combination with duration recording to provide a more accurate picture of behavior.

SPECIAL CONSIDERATIONS:

It can sometimes be difficult to accurately record the exact duration of the behavior. On the other hand, duration recording not only tells us how long the student engages in the behavior, but it automatically provides us with how many times the behavior occurred.

SUMMARIZING THE DATA:

Duration can be summarized in two different ways:
Percentage of observation with behavior: Sum the total number of min/sec/hrs that the behavior occurred during the observation, divided the sum by the total number of min/sec/hrs of the observation, and multiply by 100.
Average Duration of Behavior: Sum the total durations and divide by the total occurrences.
Example: During a 60-minute observation, David had 3 tantrums that lasted 3 minutes, 7 minutes, and then 5 minutes with a total duration of 15 minutes.
The % of observation with behavior = 15 minutes divided by 60 minutes= .25 times 100 = Tantrums occurred during 25% of the observation.
 Average duration – 15 minutes divided by 3 tantrums = Average of 5 minutes per tantrum.

RESPONSE LATENCY RECORDING

DESCRIPTION:

Use response latency recording (also known as latency recording) when you're interested in how long a student takes to begin performing a particular behavior once the opportunity has been presented. For example, if a teacher makes a request for a student to put an activity away, the observer would be interested in the length of time it takes for the student to comply with the request. Use this method if the opportunity and the behavior have a clear beginning and end. It is not recommended to use this method for opportunities that are continuous or start and stop frequently.

EXAMPLES:

Latency recording is appropriate when the teacher wants to measure how much time passes between when an instruction, cue, or prompt is provided and the behavior begins.

-Time delay between a statement/question and the student's attempt to communicate
-Lapse in time between instructions and compliance with task   -Time delay between being shown a word and pronouncing it

SPECIAL CONSIDERATIONS:

Latency and Duration both measure time; however, latency is how long it takes to start the behavior and duration is how long the behavior lasts. As with duration, latency can also be difficult at times to record the exact length of time it takes for the behavior to start. On the other hand, latency is a helpful measure if the goal is to reduce the amount of time it takes for a student to start an appropriate behavior or increase the amount of time between an environmental trigger and the occurrences of inappropriate behavior.

SUMMARIZING THE DATA:

This data is summarized by calculating the average latency (average time it takes for the behavior to start). To calculate, sum all of the latencies and divide by the total number of opportunities.
Example: Shelly's teacher assigned work 4 times during the observation. Shelly took 60 seconds, 90 seconds, 35 seconds, and 50 seconds to start the four assignments. So, 60+90+35+50=235 divided by 4= Shelly took an average of 58.75 seconds to start her assignment during the observation.

PERCENTAGE DATA COLLECTION

DESCRIPTION:

This method documents a specific approach to measuring student learning. Percentage data is a proportion in relation to a whole (which is usually the amount per hundred); an amount of something often expressed as a number out of 100

EXAMPLES:

Percentage data is best used as a systematic process of collecting specific information about a student's academic or functional performance (85/100=85%).

SPECIAL CONSIDERATIONS:

Repeated measurements that are administered weekly or bi-weekly. Easy to administer, reliable/valid, and time efficient. Typically used for academic data collection. Not for behavior data.

SUMMARIZING THAT DATA:

Percentage data should be reviewed frequently to:

- Inform and guide instruction (confirm that instruction matches the goals for student achievement)
- Determines if intervention is effective
- Provides clear visual representation and easy to understand

ABC ANALYSIS

DESCRIPTION:

This method involves recording the environmental variables related to the problem behavior. When the behavior of interest occurs, the observer records the target behavior, the antecedent (event that immediately preceded the behavior), and the consequence (event that immediately followed the behavior). Use this method to identify information regarding the possible function of the target behavior.

EXAMPLES:

Throwing items, inappropriate comments to peers, leaving one's seat, hitting or other forms of aggression, walking out of class without permission, and refusal to follow directions.

SPECIAL CONSIDERATIONS:

The ABC method is typically used during functional assessments and not for routine day to day data. Because it requires the observer to record multiple variables, it may require more times and effort to record every instance of behavior, especially high frequency behaviors. The ABC method only demonstrates correlation relationships between the problem behavior and observed antecedents and consequences. Functional relationships are not demonstrated, but can be hypothesized based on patterns of ABC relationships observed.

SUMMARIZING THE DATA:

If the team is using the information as part of the functional assessment, the team should look at the patterns across behavior, such as a certain time of day, activity occurring, or antecedent observed. If the team is using the information to monitor the progress of a Behavior Intervention Plane, the data should be summarized as a frequency count.

ANECDOTAL RECORD FORM

DESCRIPTION:

This method involves recording incidents of behavior usually with more narrative explanation of the circumstances surrounding the event. Within this record, it may also be noted the adult responses (consequences and/or changes made to behavior plan).

EXAMPLES:

Any behavioral incident.

SPECIAL CONSIDERATIONS:

The Anecdotal Record Form may be a good way for individuals to document occurrences and responses; however, much of the information may need to be transferred to another recording format in order to analyze information for programming. For example, the daily anecdotal information may be transferred to frequency recordings or ABC recordings.

SUMMARIZING THE DATA:

If the team is using the information as part of the functional assessment, the team should look at the patterns across behavior, such as a certain time of day, activity occurring, or antecedent observed. Again, the information may need to be transferred to a more useable format.

DISCRETE TRIAL

DESCRIPTION:

Discrete Trial Training (DTT) is a method of teaching in which the adult uses adult-directed, multiple trial instruction, and reinforcers chosen for their strength, and clear contingencies and repetition to teach new skills or task. When teaching a new skill, the learner must first be taught to discriminate the stimulus from others.

• DTT, skills, tasks and behaviors are broken down into short and simple trials that accommodate the needs of individuals (consider attention span, pacing, etc...).
• DTT attempts to build motivation by rewarding performance of desired behavior and completion of tasks with tangible or external reinforcement.
• Stimuli presented in DTT are clear and relatively consistent. The child is given rewards only for behaviors in response to those stimuli.
• DTT teaches skills and behaviors explicitly (cause - effect learning).
• DTT can be designed to teach perspective taking and social cognition skills explicitly.

The instructions given in discrete trial training are simple, concrete, and clearly provide only the most salient information.

BRIEF EXAMPLES:

The teacher used DTT to teach 6-year-old Sara to identify colors, After Getting Sara attention on task, the teacher presented Sara with the "penny board," which Sara was familiar with. The teacher told her clearly that if she got five correct answers, she would be allowed to choose a desired activity. Three cards of different colors that had been previously taught and mastered individually were presented on the table. The teacher stated the color of each card while pointing to the card. After repeating this sequence, the teacher scrambled the three cards and put them on the table for Sara to practice. The teacher pointed to a card and said, "What color is it?" Waiting for couple of seconds, the teacher prompted Sara by exaggerating the first sound of "blue," for example. When Sara gave the right answer, she received a "penny" and verbal praise from the teacher. The practice continued to follow this structure of steps until Sara mastered the skill. The teacher recorded data on every response and administered reinforcement for each correct answer. When finishing the trial, they counted the "pennies" Sara had earned. Because she had earned five "pennies," she earned five minutes of play with a toy she had selected from her reinforcement menu.

SPECIAL CONSIDERATIONS:

Regular data collection provides detailed information to guide future instruction. DTT should be used as an instructional strategy with hopes of generalization as the outcome.

DIRECTIONS FOR CONDUCTING DISCRETE TRIAL TRAINING

The steps for teaching the learner to discriminate a novel stimulus are as follows:

1. Teachers/practitioners present the new stimulus to the learner, provide the instruction, prompt the target skill/behavior, and reinforce.

2. Teachers/practitioners systematically fade prompts until the learner independently and consistently performs the skill with the one stimulus object.

3. Teachers/practitioners present the target stimulus as usual, but also present another stimulus, the distracter, in the periphery; give the instruction; elicit the behavior; and reinforce.

 For example, if you are teaching blue and using a blue block, then a red block would be a good distracter. It should vary from the target only on the specific dimension you are teaching. Assuming the learner responds correctly, change the position of the distracter on each trial, moving it closer to the target, until the two are side by side.

 Once the learner is consistently responding correctly, move the two stimuli around, reversing sides, placing them vertically, etc., until the learner passes consistently. Adjusting the presentation of antecedent stimuli (order, proximity, sequence, etc.) is called random rotation.

 4. Teachers/practitioners add a different distracter. Once the learner performs correctly, use all three stimuli for the trials. Keep the positions consistent until the learner is consistently correct, and then start changing the positions, assuring that the learner ends up with consistently correct responses to each change. Finally, vary the positions randomly (random rotation), so that the learner is clearly discriminating the target stimulus.