

# **Chapter 2**

## **Observing and Recording Behavior**

### **Chapter Outline**

- Direct and Indirect Assessment
- Defining the Target Behaviors
- The Logistics of Recording
  - The Observer
  - When and Where to Record
- Choosing a Recording Method
  - Continuous Recording
    - Frequency
    - Duration
    - Real time Recording
    - Intensity
    - Latency
  - Percentage of Opportunities
  - Product Recording
  - Interval Recording
    - Partial Interval
    - Whole Interval
    - Frequency-within-interval
  - Time Sample Recording
- Choosing a Recording Instrument
  - Data Sheet
  - Golf-stroke Counter
  - Stop Watch
  - Hand-held Computer
  - Barcode Technology
  - Coin Transfer
  - Tears in Paper
  - Ranger Beads
  - Pedometer
- Reactivity
- Interobserver Agreement
- Chapter Summary
- Key Terms
- Practice Test
- Applications
- Misapplications
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## Ideas for Class Activities

1. Engage in a somewhat complex behavior in front of the classroom (e.g., a child's tantrum consisting of multiple behaviors) and have students write down a behavioral definition of the behavior they just observed. Ask a number of students to read their definitions and discuss the various definitions.
2. Bring a videotape of a 5 minute segment of someone engaging in a specific behavior (for example, a habit such as nail biting or a verbal habit such as saying "uh" while talking) . Also bring a tape player with an audiotape that signals 10 second intervals. Have students practice doing frequency recording, frequency within interval recording, interval recording, and time sample recording. Review student results and compare with your own. Have students pair up and calculate interobserver agreement from their recordings.

## Answers to Practice Test Questions

1. Measurement of the target behavior (behavioral assessment) is important for a number of reasons. First, measurement of the behavior prior to treatment will provide information that can help you decide whether treatment is necessary. Second, behavioral assessment can provide information that helps you choose the best treatment. Third, measurement of the target behavior during and after treatment will allow you to determine whether the behavior changed following the implementation of treatment.
2. The four steps involved in a behavior recording plan are:
  - (1) defining the target behavior;
  - (2) identifying who, when, and where to record the behavior;
  - (3) choosing a recording method;
  - (4) choosing a recording instrument.
3. A behavioral definition includes active verbs describing specific behaviors that a person exhibits. A behavioral definition differs from a label for a behavior in that a behavioral definition is objective and unambiguous. Labels for behaviors are ambiguous; they can mean different things to different people because they do not identify specific actions.
4. A behavioral definition of "politeness" for an individual may read as follows: "Politeness" for Jason entails saying "please" when making a request, saying "thank you" after a request has been granted, and speaking only after another individual has finished speaking.
5. It is important to identify a specific individual(s) who will record a behavior. The observer(s) must be trained to identify the occurrence of the target behavior and record the behavior immediately. The observer must have the time to observe and record the behavior and must be willing to function as an observer.
6. The observer records the target behavior in specific periods of time called the observation periods.
7. The four dimensions of a behavior that may be recorded in a continuous recording method are:
  - (1) frequency—the number of times the behavior occurs in an observation period.
  - (2) duration—the total amount of time the behavior occurs from start to finish.
  - (3) intensity—the amount of force, energy, or exertion involved in a behavior.
  - (4) latency—the time from some stimulus event to the onset or initiation of the behavior.
8. Examples of the aforementioned recording procedures are:
  - frequency—recording the number of head slaps exhibited by a self-injurious child.
  - duration—recording the amount of time a person engages in physical exercise.
  - intensity—using a decibel meter to measure the intensity or loudness of someone's speech.
  - latency—recording how long it takes a child to pick up her toys after the parent asks her to do so.

9. Real time recording involves recording the exact time of the onset and offset of each instance of the target behavior in the observation period. While observing a child's tantrum behavior, the observer would indicate the exact time each tantrum started and stopped so that information would be available on frequency, duration, and the timing of the behavior in the observation period.
10. Product recording, also referred to as "permanent product recording," involves recording the tangible outcome or permanent product of the occurrence of behavior. For example, for an individual who is attempting to stop smoking, cigarette butts are a permanent product that could be collected to assess the effect of the intervention.
11. Interval recording entails measuring whether the behavior occurred or did not occur during consecutive intervals of time during the observation period. For example, an observer may record whether or not an individual engages in aggressive behavior during each 10 minute interval of the observation period.
12. Frequency-within-interval recording involves counting each instance of the behavior during consecutive periods of time (intervals) within the observation period. Counting the number of times a person bit her fingernail during each ten minute interval of time in the classroom would be an example of frequency-within-interval recording.
13. In time sample recording, the observation period is divided into intervals of time, but the behavior is observed and recorded during only part of each interval. For example, a teacher using time sample recording to measure the on-task behavior of a child with ADHD might set his watch to beep every five minutes and will record whether or not the child was on task when the watch beeped.
14. Examples of different recording instruments are: pencil and paper, golf stroke counter, stopwatch, handheld computer, barcode scanning, the transfer of a coin from one pocket to another, ranger beads, and a pedometer.
15. The sooner the observer records the behavior after it occurs, the less likely the observer is to record incorrectly.
16. Reactivity is when the process of recording a behavior will cause the behavior to change, even before any treatment is implemented. Two ways to reduce the reactivity of observation are to wait until the individuals who are being observed become accustomed to the observer, or to have the observer record the behavior without the individuals knowing that they are being observed.
17. Interobserver agreement (IOA) is when two observers independently observe and record the same target behavior of the same subject during the same observation period. Interobserver agreement is assessed in order to determine whether the target behavior is being recorded consistently.
18. For frequency recording, IOA is calculated by dividing the smaller frequency by the larger frequency and multiplying by 100%. For duration recording, IOA is calculated by dividing the smaller duration by the larger duration and multiplying by 100%. For interval recording, the agreement between the two observers in each interval is checked. Then, the number of intervals with agreements is divided by the number of intervals with agreements plus disagreements (the total number of intervals.)
19. For frequency-within-interval recording you calculate interobserver agreement by computing a percentage of agreement for each interval (divide the smaller number by the larger number) and then add the percentages and divide the sum by the number of intervals.

## Answers to Applications

2. You must first define out-of-seat behavior. This could be defined as any instance in which Sara's behind is not touching the chair at her desk. James could record frequency of out-of-seat behavior by counting each time her behind left the chair and returned (onset and offset). James could record duration of out-of-seat behavior by timing each instance of the behavior from its onset to its offset. James could also record Sara's behavior using an interval recording system, by dividing the class time into shorter intervals and recording whether Sara left her seat during each interval. James would probably choose the interval recording method because it would be easier to use while trying to teach. James would get an interval recording data sheet and a timer to cue him when each 10 minute interval started. He would record once in each interval whether Sara left her seat at any time during the interval. This would seem to be a practical method for James to use while teaching his class.

3. Eve could record frequency in a couple of ways. If she defined weight-lifting behavior as using the weight machines at the health club for a minimum of 20 minutes at a time, she could record the number of times she engages in that behavior each week. Using a notebook, index card, or data sheet, she could record each trip she takes to the weight room. She could also record frequency as the number of repetitions on each machine. She would have to record the number on a data sheet after each workout (if she did the same number of repetitions on each machine) or after using each machine (if the number of repetitions was different on each machine). She could record duration as the number of minutes that she spent on the weight machines during each visit. She would note the time she started and stopped on her data sheet, index card, or notebook. As a measure of intensity, she would record how much weight she had on each machine. As with repetitions, she would record the weight at the end of the workout or after using each machine. Her goal would be to increase the number of trips to the weight room each week, the length of time spent working out, and/or the number of repetitions or the amount of weight on each machine as she works out.

## Answers to Misapplications

1. The problem with this recording plan is that Gloria is not recording the target behavior immediately after it occurs. Because she waits until after class to record the behavior, her recording is unlikely to be accurate. She will probably not recall the correct frequency of the behavior, because her attention is focused on what the instructor is saying in class. It would be better for her to have her index card on the desk in sight and to record each instance of hair-twirling behavior immediately after it occurs.

2. The problem with this recording method is that Ralph will only record the number of the cigarettes he smokes from his own pack, because he will be counting the cigarettes missing from the pack. If he gets a cigarette from another individual, it will not be recorded. In addition, if he gives a cigarette to another individual, he will incorrectly record it as a cigarette that he smoked. It would be better for Ralph to record each cigarette he smokes by writing it down, or by using some other recording procedure to register the behavior each time it occurs. For example, he could transfer a coin from one pocket to another or save each cigarette butt in an old tobacco tin and count the butts at the end of the day. It is always best to record the behavior in some way immediately after the behavior occurs.

3. The problem with the definition of "losing my temper" is that two parts of this definition require inferences. "Getting mad" is not a description of a behavior; rather, it is a label for an internal state of the person. She infers the existence of this state from specific behaviors (yelling, slamming doors, saying "shut up"). In addition, "he says something that frustrates me" also implies an inference about an internal state (frustration). It is not a description of a behavior. These two parts could be removed, and the definition would then read, "yelling at my husband, slamming the bedroom door, and yelling 'shut up.'" The problem with the definition of overeating is that some parts are not descriptions of behavior that could be recorded by an observer. Eating "more than I wanted to eat" is an inference; it can't be measured. Likewise, you can't observe feeling "bloated" or feeling that "my belt is too tight." You would define overeating as eating a specified amount of food. This could be observed and recorded by another individual. Finally, although the definition of studying is an objective description of observable events, it does not define studying, because it does not identify any behavior of the individual. Even with books open, the TV off, and no distractions, a person might not be studying. The person might be sleeping, thinking, daydreaming, or eating. To

define studying, you must define specific study behaviors--for example, reading and underlining in the textbook, writing notes on the reading, completing practice problems, and answering study questions. These activities can be observed and recorded as studying.

## Answers to Quizzes

### Quiz 1

1. direct, indirect 2. behavior or target behavior 3. behavioral definition 4. interobserver agreement 5. observation period 6. frequency 7. duration 8. latency 9. consecutive, nonconsecutive 10. reactivity

### Quiz 2

1. direct 2. indirect 3. frequency, latency, duration 4. time sample 5. interval 6. reactivity 7. real time 8. time sample 9. interval 10. product

### Quiz 3

1. frequency 2. duration 3. intensity 4. latency 5. time sample 6. interval 7. product 8. It will begin to change in the desired direction 9. real time recording 10. direct

## Test Questions

1. In behavior modification, measurement of the target behavior is called:
- a) a behavioral indicator
  - b) behavioral assessment
  - c) observation
  - d) supervision

ANS: B

2. The measurement of behavior is important because:
- a) measurement can determine if treatment is necessary
  - b) measurement can determine the best treatment
  - c) measurement can determine if the treatment is working
  - d) all of these

ANS: D

3. Which of the following is NOT used in indirect assessment?
- a) interviews
  - b) questionnaires
  - c) direct observation
  - d) rating scales

ANS: C

4. Which of the following is NOT used in direct assessment?
- a) questionnaires
  - b) frequency recording
  - c) time sample recording
  - d) duration recording

ANS: A

5. A teacher observes and records instances of misbehavior by a student. This is an example of:

- a) indirect assessment
- b) direct assessment
- c) covert observation
- d) participant recording

ANS: B

6. Which of the following is NOT a step in developing a behavior recording plan?

- a) defining the target behavior
- b) applying procedures to change the target behavior
- c) determining the logistics of recording
- d) choosing a recording method

ANS: B

7. A teacher wants to develop a behavior recording plan that she intends to use with one of her students. The teacher's first step would be:

- a) deciding who will do the recording
- b) determining where and when the recording will occur
- c) defining the target behavior
- d) choosing a recording method

ANS: C

8. A behavioral definition:

- a) is ambiguous
- b) is subjective
- c) involves identifying traits
- d) describes specific behaviors

ANS: D

9. Julie and Beth independently observe (hear) a child swear, and each records that swearing occurred. This is called:

- a) independent agreement
- b) interobserver agreement
- c) independent observation
- d) agreement recording

ANS: B

10. Jerry wants to improve his studying. He observes and records the times when he studies. Observing and recording your own behavior is called:

- a) private observation
- b) self-monitoring
- c) independent recording
- d) direct recording

ANS: B

11. Dawn's parents record her hair pulling behavior for a specific period of time. The time during which Dawn's parents observe and record her behavior is called the:

- a) modification period
- b) monitoring period
- c) observation period
- d) viewing period

ANS: C

12. What is involved in determining the logistics of recording?

- a) who will do the recording
- b) when the recording will occur
- c) where the recording will occur
- d) all of these

ANS: D

13. Zach's behavior of pushing other children typically occurs on the playground. The playground would be a(n) \_\_\_\_\_ setting for Zach's behavior.

- a) analogue
- b) manipulated
- c) natural
- d) controlled

ANS: C

14. Which observation setting will provide the most representative sample of the target behavior?

- a) analogue setting
- b) manipulated setting
- c) natural setting
- d) controlled setting

ANS: C

15. Which of the following is NOT an advantage of an analogue setting?

- a) it is easier to control the situation during observation
- b) it is easier to manipulate variables that affect behavior
- c) it provides a more representative sample of the target behavior
- d) all of these

ANS: C

16. A psychologist wants to observe the tantrum behavior of a child. The tantrums usually occur in the classroom, but the psychologist does not have access to the classroom so she observes the child in a room that resembles a classroom. This would be an example of a(n) \_\_\_\_\_ setting.

- a) natural
- b) manufactured
- c) analogue
- d) isolated

ANS: C

17. Brian's parents are interested in recording his stuttering behavior. They record each instance in which Brian stutters. This is an example of \_\_\_\_\_ recording.

- a) product
- b) interval
- c) continuous
- d) time sample

ANS: C

18. Which dimensions of behavior is NOT recorded using continuous recording?

- a) frequency
- b) duration
- c) intensity
- d) time sample

ANS: D

19. A teacher records each instance of a student swearing in class. The teacher is recording which dimension of behavior?

- a) latency
- b) intensity
- c) frequency
- d) duration

ANS: C

20. A parent records how loudly her child screams. The parent is recording the \_\_\_\_\_ of the screams.

- a) frequency
- b) duration
- c) intensity
- d) latency

ANS: C

21. Bill keeps track of the amount of time he studies each day. Which dimension of behavior is Bill recording?

- a) frequency
- b) duration
- c) intensity
- d) latency

ANS: B

22. A track coach records the amount of time it takes a sprinter to start running once the gun has been sounded. The coach is recording the dimension of \_\_\_\_\_.

- a) latency
- b) frequency
- c) duration
- d) intensity

ANS: A



23. A track coach records how long it takes a sprinter to run 100 meters. The track coach is recording what dimension of behavior?

- a) latency
- b) frequency
- c) duration
- d) intensity

ANS: C

24. A teacher records the number of math homework problems a student has correctly completed in order to determine the student's performance. The teacher is using \_\_\_\_\_ recording.

- a) continuous
- b) interval
- c) product
- d) time sample

ANS: C

25. An observer divides an observation period into a number of consecutive time periods, and then records whether the target behavior occurred during each period. This is called:

- a) product recording
- b) interval recording
- c) continuous recording
- d) time sample recording

ANS: B

26. If an observation period is divided into a number of time periods, and the behavior is recorded during only part of each interval it is called \_\_\_\_\_ recording.

- a) interval
- b) continuous
- c) product
- d) time sample

ANS: D

27. Which of the following can be used as a recording instrument?

- a) paper and pencil
- b) golf stroke counter
- c) stopwatch
- d) all of these

ANS: D

28. Matthew frequently hits other children during class. However, he never hits other kids when he knows the teacher is observing him. This is an example of:

- a) self-monitoring
- b) reactivity
- c) behavior modification
- d) controlled behavior

ANS: B

29. What is the minimally acceptable level of interobserver agreement in research?

- a) 100%
- b) 90%
- c) 80%
- d) 55%

ANS: C

30. Which method will NOT reduce reactivity of observation?

- a) observe through a one-way observation window
- b) tell the person you are observing his/her behavior
- c) wait until the person you are observing is accustomed to your presence
- d) use participant observers

ANS: B

1. Assessment that relies on information from interviews and questionnaires is called \_\_\_\_\_ assessment.

ANS: indirect

2. Merlin counted the number of times that he picked his nose each day. What dimension of behavior was he recording? \_\_\_\_\_

ANS: frequency

3. What is it called when two observers record the same behavior of the same person during the same time period and compare the results of their recording? \_\_\_\_\_

ANS: interobserver agreement; IOA

4. Perry's watch beeped every 5 minutes and he recorded whether he was slouched over (bad posture) at the time the watch beeped. This is an example of \_\_\_\_\_ recording.

ANS: time sample

5. Bernie recorded how long he studied each day. What dimension of behavior was he recording?

ANS: duration

6. Sherry had throat surgery and could not talk for days. She worked with a speech therapist to increase her voice loudness. The therapist used an instrument to measure increases in the loudness of her voice. What dimension of behavior was the speech therapist recording?

ANS: intensity

7. Recording behavior in brief observation intervals each separated by longer periods of time is called \_\_\_\_\_ recording.

ANS: time sample

8. Below are the results of interval recording by two observers, A and B.

Observer A

|   |   |  |   |   |   |   |   |   |   |
|---|---|--|---|---|---|---|---|---|---|
| x | x |  | x |   | x |   | x | x | x |
| x | x |  | x | x | x | x | x | x |   |

Observer B

What is the percentage of intervals scored by observer A? \_\_\_\_\_

ANS: 7/10; 70%

9. Based on the previous question's scenario, what percentage is scored by observer B? \_\_\_\_\_

ANS: 8/10; 80%

10. Calculate interobserver agreement for the interval recording of observer A and B. \_\_\_\_\_

$7/7+3=70\%$ ; 70%

1. T F A good behavioral definition requires you to make inferences about internal states or motivation of the individual.

ANS: F

2. T F In interval recording procedures, the behavior is recorded in consecutive periods of time within the observation period.

ANS: T

3. T F Frequency, duration, intensity, and latency are dimensions of behavior that can be measured in a continuous recording procedure.

ANS: T

4. T F Reactivity of observation often occurs with self-monitoring, but never when recording is done by an observer.

ANS: F

5. T F Interobserver agreement must be 100% to be acceptable.

ANS: F

6. T F Recording how long it takes for a person to come up with an answer to a question after the question is asked is an example of a duration measure.

ANS: F

7. T F Interobserver agreement involves an observer recording the person's behavior in another observation period to see if the behavior is the same.

ANS: F

8. T F Recording a person's behavior without the person knowing that recording is taking place, is one way to decrease reactivity.

ANS: T

9. T F In time sample recording, the behavior is recorded in consecutive periods of time within the observation period.

ANS: F

10. T F Recording how long a person studies is an example of intensity recording.

ANS: F

1. What are two ways to reduce reactivity of observation?

ANS: Two ways to reduce reactivity are to wait until the individuals who are being observed become accustomed to the observer, or to have the observer record the behavior without the individuals knowing that they are being observed.

2. Identify two of the reasons why behavioral assessment is an important part of behavior modification.

ANS: Behavioral assessment is an important part of behavior modification because it provides information that can help you decide whether treatment is necessary, provides information that helps you choose the best treatment, and measurement of the target behavior during and after treatment will allow you to determine whether the behavior changed following the implementation of treatment.

3. Provide an example of frequency recording, duration recording, and latency recording.

ANS: Examples: Frequency recording: recording the number of head slaps exhibited by a self-injurious child. Duration recording: recording the amount of time a person engages in physical exercise. Intensity: using a decibel meter to measure the intensity or loudness of someone's speech. Latency recording: recording how long it takes a child to pick up her toys after the parents ask her to do so.

4. Provide an example of time sample recording and interval recording.

ANS: Examples: Time sample recording: a teacher using time sample recording to measure the on-task behavior of a child with ADHD might set his watch to beep every five minutes and will record whether or not the child was on task when the watch beeped. Interval recording: an observer may record whether or not an individual engages in aggressive behavior during each 10-minute interval of the observation period.

5. Describe how you would conduct real-time recording.

ANS: Real time recording engages in aggressive behavior during each 10-minute interval of the observation period. While observing a child's tantrum behavior, the observer would indicate the exact time each tantrum started and stopped so that information would be available on frequency, duration, and the timing of the bahvior in the observation period.