Measuring Behavior

with Instructor's Guide

CASE STUDY UNIT
Created by
Sara C. Bicard, PhD, Auburn University at Montgomery
David F. Bicard, PhD, Behavior Analysis of Central Alabama, LLC
iris.peabody.vanderbilt.edu or iriscenter.com

Serving: Higher Education Faculty • PD Providers • Practicing Educators
Supporting the preparation of effective educators to improve outcomes for all children, especially those with disabilities, birth through age 21
# Table of Contents

Measuring Behavior

<table>
<thead>
<tr>
<th>Contents:</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensure and Content Standards</td>
<td>ii</td>
</tr>
<tr>
<td>Introduction</td>
<td>iii</td>
</tr>
<tr>
<td>Case Study Level A, Case 1</td>
<td>1</td>
</tr>
<tr>
<td>Case Study Level A, Case 2</td>
<td>2</td>
</tr>
<tr>
<td>Case Study Level B, Case 1</td>
<td>3</td>
</tr>
<tr>
<td>Case Study Level B, Case 2</td>
<td>4</td>
</tr>
<tr>
<td>Case Study Level C, Case 1</td>
<td>5</td>
</tr>
<tr>
<td>Case Study Level C, Case 2</td>
<td>8</td>
</tr>
<tr>
<td>STAR Sheet: Overview</td>
<td>11</td>
</tr>
<tr>
<td>STAR Sheet: Frequency/Event Recording</td>
<td>12</td>
</tr>
<tr>
<td>STAR Sheet: Interval Recording</td>
<td>16</td>
</tr>
<tr>
<td>STAR Sheet: Duration Recording</td>
<td>21</td>
</tr>
<tr>
<td>STAR Sheet: Latency Recording</td>
<td>25</td>
</tr>
<tr>
<td>Instructor’s Guide</td>
<td>28</td>
</tr>
</tbody>
</table>

To cite this Case Study Unit:

Licensure and Content Standards

This IRIS Case Study aligns with the following licensure and program standards and topic areas.

**Council for the Accreditation of Educator Preparation (CAEP)**
CAEP standards for the accreditation of educators are designed to improve the quality and effectiveness not only of new instructional practitioners but also the evidence-base used to assess those qualities in the classroom.

- Standard 1: Content and Pedagogical Knowledge

**Council for Exceptional Children (CEC)**
CEC standards encompass a wide range of ethics, standards, and practices created to help guide those who have taken on the crucial role of educating students with disabilities.

- Standard 4: Assessment

**Interstate Teacher Assessment and Support Consortium (InTASC)**
InTASC Model Core Teaching Standards are designed to help teachers of all grade levels and content areas to prepare their students either for college or for employment following graduation.

- Standard 6: Assessment

**National Council for Accreditation of Teacher Education (NCATE)**
NCATE standards are intended to serve as professional guidelines for educators. They also overview the “organizational structures, policies, and procedures” necessary to support them

- Standard 1: Candidate Knowledge, Skills, and Professional Dispositions

**The Division for Early Childhood Recommended Practices (DEC)**
The DEC Recommended Practices are designed to help improve the learning outcomes of young children (birth through age five) who have or who are at-risk for developmental delays or disabilities.

- Topic 5: Instruction
Data collection is an objective method of measurement that can be used to shape and guide professional judgment. It enables teachers to verify that their behavior management plans or instructional methods are producing the desired outcomes and can also be used to identify and end the use of ineffective teaching practices based on current fads or ideologies rather than on evidence. Teachers who do not use frequent measurement are vulnerable to two types of preventable errors:

1. Continuing an ineffective behavioral or academic intervention when no real improvement in performance has occurred
2. Discontinuing an effective behavioral or academic intervention based on a subjective evaluation

**Operational Definitions of Behavior**

Prior to data collection, educators should define the problem behavior (also known as the target behavior) and the desired behavior (also known as the replacement behavior).

When a problem behavior is to be decreased, it is a good idea to select an incompatible replacement behavior. For example, consider a case where a student’s problem behavior involves cursing when the teacher asks him a question during class. The replacement behavior could be that the student will use appropriate language when responding to a question during class.

Educators must operationally define the target and the replacement behaviors—this is, they must state them precisely in observable and measurable terms. When a behavior is described in observable terms, it can be easily seen and documented. When it is stated in measurable terms, the behavior can be quantified in some way (e.g., counted, timed). Examples of good and poor operational definitions can be found in the table below.

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Observable?</th>
<th>Measurable?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target behavior</strong>: Anna is not prepared when class begins</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td><strong>Replacement behavior</strong>: Anna will be prepared when she comes to class.</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td><strong>Target Behavior</strong>: Anna waits until after the bell rings to place her pencil and notebook on her desk.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Replacement behavior</strong>: Anna will have her pencil and notebook on her desk when the bell rings.</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
FYI

After several observations it is easy to drift from the operational definition. To reduce the likelihood of observer drift, educators should review the operational definition frequently. When observing a student’s behavior, the educator should record only what is directly observed instead of interpreting the meaning or intent of the behavior.

Resources...


http://iris.peabody.vanderbilt.edu
Background

Student: Mark
Age: 12
Grade: 6th

Scenario

Mark has been diagnosed with a learning disability. He reads at a second-grade level and his math performance is deficient. He is outgoing and is often described as the class clown. Mark has many friends but often makes them the butt of his jokes. Recently, during reading class, Mark said to Felecia, “Do you think old man McGreevy changed his underwear today?” Two other friends of Mark heard him and started laughing. Felecia laughed, too, but felt kind of uncomfortable. Mr. McGreevy heard the laughter and asked the class to quiet down. A few minutes later when Mr. McGreevy was attending to other students, Mark made a loud noise simulating flatulence. The class burst out laughing. Mr. McGreevy looked at Mark, but Mark said, “I didn’t do anything.” Mr. McGreevy warned Mark that any further interruptions would lead to his being sent to in-school suspension for the rest of the class. Mark feigned indignation and got back to work, but failed to finish his assignment.

The next day, when Mr. McGreevy stepped out of the classroom for a moment, Mark put on eyeglasses and imitated the teacher’s manner. Everyone began to laugh and talk very loudly. Encouraged, Mark continued to cause a commotion. By the time Mr. McGreevy returned, a full-scale ruckus had broken out. Mr. McGreevy sent Mark to the office, the twelfth time he had done so in that school year, and it was only November.

Mr. McGreevy is worried that Mark’s inappropriate behavior will escalate as the winter holidays draw closer. He needs to determine a method that will help him collect information on Mark’s disruptive comments.

Possible Strategies

- Event recording
- Interval recording

Assignment

1. Read the STAR Sheet Overview and the STAR Sheets for the two strategies listed above.
2. Define each strategy.
3. Describe why each strategy is an appropriate way to measure Mark’s disruptive comments.
Background

Student: Theresa
Age: 10
Grade: 4th

Scenario

Theresa rarely finishes her class work. How could she? She’s up, she’s down, she’s wandering all around. Her teacher, Ms. Lowe, seems always to be asking her to return to her desk and begin working. Theresa almost never has her book or her pencil out, and during class transitions she is the last to be ready. Ms. Lowe believes that Theresa’s out-of-seat behavior and procrastination are contributing to her poor grades. She needs to assess the situation and determine which of these behaviors is the most problematic.

Possible Strategies

- Duration recording
- Interval recording
- Latency recording

Assignment

1. Read the STAR Sheet Overview and the STAR Sheets for the three strategies listed above.
2. Define each strategy.
3. Describe why each strategy is or is not appropriate to measure Theresa’s out-of-seat behavior.
4. Describe why each strategy is or is not appropriate to measure Theresa’s procrastinating behavior.
Background

Student: Johnny
Age: 6
Grade: Kindergarten

Scenario

Johnny is a young boy with autism who receives most of his education in an inclusive classroom. He speaks in one- and two-word utterances and can say, “book,” “food,” “more,” “hi,” and “drink.” However, his main mode of communication is a picture-exchange system.

Although Johnny has demonstrated that he really enjoys group activities, he has lately begun biting his fellow students. He seems to pick on Stephen the most. As if this weren’t enough, Johnny has begun pinching his teacher during one-on-one instruction. After he engages in one of these behaviors, he yells, “It hurts!” and starts laughing.

A behavior analyst has conducted a structured interview as part of a functional behavior assessment. The teacher and parents’ responses indicate that the function of Johnny’s aggressive behaviors is to seek attention. However, the analyst needs to directly assess the behavior.

Possible Strategies

- Event recording
- Interval recording

Assignment

1. Read the STAR Sheet Overview and the STAR Sheets for the strategies listed above.
2. Operationally define the problem behavior.
3. Select the most appropriate observation method from the possible strategies listed above to measure the behavior.
   a. Explain why you chose this method.
   b. Explain how you would use this method to measure the problem behavior.
Background

Student: Alex
Age: 16
Grade: 10th

Scenario

Alex has been diagnosed with a learning disability. He reads at an eighth-grade level. Although he is a star athlete, he is not very popular with his classmates. He does not cause much trouble in class, but he rarely finishes his work or turns in homework. He seems to have the capacity to do the work, but gets by with C's. Mr. Cashman, Alex’s math teacher, spoke to Alex one day about these concerns, to which Alex responded, “I don’t need to work hard. In a few years, I’ll be set because I’m going to be a pro baseball or basketball player.”

Mr. Cashman often lets students work together to finish assignments. During math instruction, Alex works with another student on independent seat-work. One day, Alex looked at *Sports Illustrated* for thirteen minutes instead of helping with the assignment. When his partner asked him to lend a hand, Alex said, “Man, I don’t get this stuff. Just help me out.” The student continued working. When Mr. Cashman noticed what was going on, he told Alex to put the magazine away and to get to work. Alex complied, but five minutes later he got out the magazine again. On another day, Alex fell asleep and had to be woken up by his partner. Alex frequently asks to go to the bathroom. Each time Mr. Cashman lets him go.

Mr. Cashman needs to determine the amount of time that Alex spends off-task during class.

Possible Activities

- Duration recording
- Interval recording

Assignment

1. Read the STAR Sheet Overview and the STAR Sheets for the strategies listed above.
2. Operationally define the target behavior.
3. Operationally define a replacement behavior.
4. Select the most appropriate observation method from the possible strategies listed above to measure the behaviors.
   a. Explain why you chose this method.
   b. Explain how you would use this method to measure the problem behavior.
Background

Student: Howard
Age: 8
Grade: 3rd

Scenario

Howard is showing significant signs of reading and math difficulty. Ms. Anderson—a first-year teacher—has referred him to the office six times in four months for “insubordination.”

When the bell rings, Ms. Anderson instructs the class to begin working on the math problems on the chalkboard. Instead, Howard begins to talk loudly about the rims on his dad’s car. Another student, Davis, comments, “Aw, your daddy has a hooperie and those rims are wack.” Howard responds, “Well, at least we have a car. I saw you waiting for the bus.” Other students begin to laugh, and Davis tells Howard to shut up. At this time Ms. Anderson intervenes, telling the students to quiet down. She reprimands Howard and Davis, tells them to go sit down, and reminds them of their assignment. She then returns to her desk. Howard and Davis continue to discuss their parents’ cars. After a moment, Ms. Anderson again reprimands them for talking. Howard then sharpens his pencil, gets a new piece of paper, and walks back to his seat using the longest route possible. After about fifteen minutes, the students appear to have finished their math problems and Ms. Anderson begins class. After class, Ms. Anderson looks at Howard’s paper and realizes that he only completed a few questions.

Howard has several behaviors that Ms. Anderson feels are contributing to his incomplete work, but she is most concerned about him starting his assignments when told to do so. So, the next week, Ms. Anderson collects event data on Howard’s appropriate and inappropriate comments and latency data on how long it takes him to begin his work each day (see next page).

Assignment

1. Do you agree with Ms. Anderson’s data collection choices? Explain your answers.
2. Complete the forms below by calculating the latency and frequency of Howard’s behaviors. Next, analyze Howard’s data.
   a. Are Ms. Anderson’s concerns about Howard’s latency behavior justified? Why or why not?
   b. Are Ms. Anderson’s concerns about Howard’s inappropriate comments justified? Why or why not?
3. Based on the scenario above, do you think there is other information that Ms. Anderson should collect? If so, list the behaviors that she might want to measure and explain possible data collection methods.
Latency Recording Form

Student: Howard
Date: 12/1/xx - 12/5/xx

Class/Teacher: Math/ Ms. Anderson
Observer: Ms. Anderson

Target behavior: After the class is told to begin solving the math problems on the board, Howard delays beginning his assignment for 60 seconds or longer.

Replacement behavior: After the class is told to begin solving the math problems on the board, Howard will start his assignment within 60 seconds.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time Howard was instructed to begin work</th>
<th>Time behavior was initiated</th>
<th>Latency</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/1/xx</td>
<td>8:35:00 am</td>
<td>8:35:33 am</td>
<td></td>
</tr>
<tr>
<td>12/2/xx</td>
<td>8:35:09 am</td>
<td>8:37:14 am</td>
<td></td>
</tr>
<tr>
<td>12/3/xx</td>
<td>8:36:01 am</td>
<td>8:36:29 am</td>
<td></td>
</tr>
<tr>
<td>12/4/xx</td>
<td>8:35:02 am</td>
<td>8:36:33 am</td>
<td></td>
</tr>
<tr>
<td>12/5/xx</td>
<td>8:36:30 am</td>
<td>8:37:14 am</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average</td>
</tr>
</tbody>
</table>
Event Recording Form

Student: **Howard**

Date: **12/1/xx - 12/5/xx**

Class/ Teacher: **Math/ Ms. Anderson**

Observer: **Ms. Anderson**

Target behavior: *After the class is told to begin solving the math problems on the board, Howard talks with his peers about topics other than the lesson.*

Replacement behavior: *After the class is told to begin solving the math problems on the board, Howard will work quietly and make only lesson-appropriate comments.*

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Tally (Appropriate Comments)</th>
<th>Total</th>
<th>Rate</th>
<th>Tally (Inappropriate Comments)</th>
<th>Total</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/1/xx</td>
<td>8:35-8:50</td>
<td>/</td>
<td></td>
<td></td>
<td>### ###</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/2/xx</td>
<td>8:35-8:50</td>
<td>##</td>
<td></td>
<td></td>
<td>### ##</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/3/xx</td>
<td>8:35-8:50</td>
<td>#</td>
<td></td>
<td></td>
<td>###</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/4/xx</td>
<td>8:35-8:50</td>
<td>/</td>
<td></td>
<td></td>
<td>### ### ###</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/5/xx</td>
<td>8:35-8:50</td>
<td>###</td>
<td></td>
<td></td>
<td>### ### ###</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average</td>
<td></td>
<td></td>
<td>Average</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Background

Student: Rachel
Age: 17
Grade: 11th

Scenario

Mr. Smith co-teaches an inclusive biology course at Hamilton High School with Mrs. Patel, a special education teacher. Because the students have a wide range of reading abilities, one of the teachers frequently reads a paragraph from the text aloud and then asks listening comprehension questions. During this question-and-answer period, students are required to raise their hands and wait to be called on.

Rachel, a new transfer student, frequently talks to peers and writes notes to friends during this activity. When she does respond to questions, she blurts out the answer without waiting to be called on. Though her answers are always correct, the teachers are frustrated with her behavior. Mr. Smith reprimands her several times before sending her to the office. Upon being sent to the office for the fourth time, Rachel complained, “You’re always picking on me!” Mr. Smith spent the next two minutes explaining how fair he is with his students. Concerned about this pattern of behavior, Mrs. Patel has collected the following data (see next page).

Assignment

1. Do you agree with Mrs. Patel’s data collection choices for each target behavior? Explain your answers.
2. Complete the forms below by calculating Rachel’s rate of calling out and her occurrences of off-task behavior. Analyze Rachel’s data.
   a. Are the teachers’ concerns about Rachel’s calling-out behavior justified? Why or why not?
   b. Are the teachers’ concerns about Rachel’s off-task behavior justified? Why or why not?
3. For each behavior listed below, identify an alternate method of data collection and explain how Mrs. Patel would collect the data.
   a. Calling-out behavior
   b. Off-task behavior
Event Recording Form

Student: **Rachel**  
Date: 2/11/xx - 2/15/xx

Class/ Teacher: **Biology 7th period/ Smith, Patel**

Observer: **Mrs. Patel**

Target behavior: During reading and comprehension activities, Rachel blurts out answers to questions without waiting to be called on.

Replacement behavior: During reading and comprehension activities, Rachel will wait to be called on before answering a question.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Tally (Blurt out)</th>
<th>Total</th>
<th>Rate</th>
<th>Tally (Waiting to be called on)</th>
<th>Total</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/11/xx</td>
<td>2:15-2:25</td>
<td>///</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/12/xx</td>
<td>2:16-2:26</td>
<td>///</td>
<td>///</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/13/xx</td>
<td>2:16-2:26</td>
<td>//</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/14/xx</td>
<td>2:15-2:25</td>
<td>/// /</td>
<td>///</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/15/xx</td>
<td>2:17-2:27</td>
<td>/// / /</td>
<td>///</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Average

---

http://iris.peabody.vanderbilt.edu
Interval Recording Form

Student: Rachel  Date: 2/11/xx

Class/ Teacher: Biology 7th period Smith/Patel  Observer: Mrs. Patel

Time/ length of observation: 2:15–2:25 pm  Length of interval: 10 seconds

Problem behavior: Rachel is talking to friends and writing notes during reading and comprehension activities.

Desired behavior: During reading and comprehension activities, Rachel will look at assignments, write class notes (when necessary) and make appropriate comments (questions and answers) related to topic, use the assigned materials, and follow teacher directions.

Codes: + problem behavior did occur during some portion of the interval (off-task—talking to friends, writing notes)
— problem behavior did not occur (listening, answering when called on, etc.)

Note: Used partial interval recording

<table>
<thead>
<tr>
<th>Interval</th>
<th>Behavior</th>
<th>Interval</th>
<th>Behavior</th>
<th>Interval</th>
<th>Behavior</th>
<th>Interval</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+</td>
<td>16</td>
<td>+</td>
<td>31</td>
<td>—</td>
<td>46</td>
<td>+</td>
</tr>
<tr>
<td>2</td>
<td>+</td>
<td>17</td>
<td>+</td>
<td>32</td>
<td>—</td>
<td>47</td>
<td>+</td>
</tr>
<tr>
<td>3</td>
<td>+</td>
<td>18</td>
<td>+</td>
<td>33</td>
<td>—</td>
<td>48</td>
<td>—</td>
</tr>
<tr>
<td>4</td>
<td>+</td>
<td>19</td>
<td>+</td>
<td>34</td>
<td>—</td>
<td>49</td>
<td>—</td>
</tr>
<tr>
<td>5</td>
<td>+</td>
<td>20</td>
<td>+</td>
<td>35</td>
<td>—</td>
<td>50</td>
<td>—</td>
</tr>
<tr>
<td>6</td>
<td>—</td>
<td>21</td>
<td>+</td>
<td>36</td>
<td>—</td>
<td>51</td>
<td>+</td>
</tr>
<tr>
<td>7</td>
<td>+</td>
<td>22</td>
<td>+</td>
<td>37</td>
<td>—</td>
<td>52</td>
<td>+</td>
</tr>
<tr>
<td>8</td>
<td>+</td>
<td>23</td>
<td>—</td>
<td>38</td>
<td>+</td>
<td>53</td>
<td>+</td>
</tr>
<tr>
<td>9</td>
<td>+</td>
<td>24</td>
<td>—</td>
<td>39</td>
<td>—</td>
<td>54</td>
<td>+</td>
</tr>
<tr>
<td>10</td>
<td>—</td>
<td>25</td>
<td>—</td>
<td>40</td>
<td>+</td>
<td>55</td>
<td>+</td>
</tr>
<tr>
<td>11</td>
<td>—</td>
<td>26</td>
<td>—</td>
<td>41</td>
<td>—</td>
<td>56</td>
<td>+</td>
</tr>
<tr>
<td>12</td>
<td>—</td>
<td>27</td>
<td>+</td>
<td>42</td>
<td>+</td>
<td>57</td>
<td>+</td>
</tr>
<tr>
<td>13</td>
<td>+</td>
<td>28</td>
<td>+</td>
<td>43</td>
<td>+</td>
<td>58</td>
<td>+</td>
</tr>
<tr>
<td>14</td>
<td>+</td>
<td>29</td>
<td>+</td>
<td>44</td>
<td>+</td>
<td>59</td>
<td>+</td>
</tr>
<tr>
<td>15</td>
<td>+</td>
<td>30</td>
<td>+</td>
<td>45</td>
<td>+</td>
<td>60</td>
<td>+</td>
</tr>
</tbody>
</table>

TOTAL/ % occurrences

TOTAL/ % nonoccurrences
What a STAR Sheet is...

A STAR (STrategies And Resources) Sheet provides you with a description of a well-researched strategy that can help you solve the case studies in this unit.

Data collection can serve as a way to gather evidence to help improve student behavior. Teachers should choose a data collection method that provides the most accurate picture of student performance in the classroom. When they select a data collection method, teachers can refer to the flowchart below:

Adapted from Alberto & Troutman (2006).

Regardless of the data collection system implemented, students sometimes behave differently if they know they are being observed or when a new person is in the classroom. Some ways to reduce this reactivity are to observe other students as well so that the target student does not feel like he or she is being singled out, to practice observing a few times so that the student gets used to the observer before official data collection begins, and to try to be discrete to reduce the likelihood that the student will notice that he or she is being observed.

Resources


http://iris.peabody.vanderbilt.edu
What a STAR Sheet is...

A STAR (STRategies And Resources) Sheet provides you with a description of a well-researched strategy that can help you solve the case studies in this unit.

What It Is

Frequency or event recording is a way to measure the number of times a behavior occurs within a given period.

What the Research and Resources Say

- Event recording can be used if the goal is to increase or decrease how often the behavior(s) occur (Special Connections, n.d.).
- Event recording is best for behaviors with a distinct beginning and end (Cooper, Heron, & Heward, 2007).
- Event recording has been used in classrooms to measure behaviors such as:
  - Task initiations and protests to task demands (Dibley & Lim, 1999)
  - Inappropriate sitting and littering (Wheatley et al, 2009)
  - Correct and incorrect academic responses (Heckaman, Alber, Hooper & Heward, 1998)
  - Tardiness (Johnson-Gros, Lyons, & Griffin, 2008)
- Teachers have used event recording to measure their own behaviors, such as:
  - Praise statements (Kalis, Vannest, & Parker, 2007)
  - Response opportunities provided to students (Moore, Partin, Robertson, Maggin, Oliver, & Wehby, 2010)
- Event recording is best for behaviors that occur with enough time in between to distinguish between the end of one response and the onset of another (Cooper, Heron, & Heward, 2007).

Tips for Implementation

- Comparing event or frequency data across observations allows teachers to determine whether the behavior is increasing, decreasing, or showing no change. For this reason, it is helpful if the observation periods are the same length.
- To discretely document the number of times a behavior occurs (i.e., the frequency), try one of the following procedures:
  - Place tally marks on paper.
  - Put a piece of masking tape on your arm and place tally marks on the tape.
  - Purchase a small, inexpensive handheld tally counter.
  - Put a handful of small items such as pennies or paperclips in one pocket and move one item to the other pocket each time the behavior occurs. Add the items to determine how many times the behavior occurred.
• When it is not possible to observe the student’s behavior for the same length of time for each observation period, calculate the rate of the behavior for each observation and compare across observations. To calculate the rate of a behavior, use the following steps.
  1. Note the time the observation begins.
  2. Record each occurrence of the behavior.
  3. Note the time the observation ends.
  4. Calculate the length of time for the observation.
  5. Calculate the rate by counting the total number of times the behavior occurred and dividing by the length of the observation.
## Event Recording Form

Student: _______________________________

Class/ Teacher: _________________________ Observer: ______________________________

Time/ Length of Observation: ____________________________________________________

Behavior: ____________________________________________________________________

**Instructions:** Make a mark each time the behavior occurs. To calculate rate\(^1\), divide the total number of occurrences by the length of the observation.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time started</th>
<th>Time ended</th>
<th>Total time</th>
<th>Tally</th>
<th>Total occurrences</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/14</td>
<td>Ex.: 8:30 am</td>
<td>Ex.: 8:45 am</td>
<td>15 min.</td>
<td>### ### ### ///</td>
<td>18</td>
<td>18/15 min. = 1.2/min.</td>
</tr>
</tbody>
</table>

Additional comments:

\(^1\) If the observation periods are the same length, rate calculations might not be necessary.
• When using event recording for academic skills, count both correct and incorrect responses for a more complete evaluation of learning. Evaluating only correct responses can be misleading, especially if incorrect responses increase over time or are more frequent than correct responses.

Keep In Mind

• The teacher’s actions might influence a student’s behavior. For example, if a teacher asks a student to respond ten times during one lesson, but only three times during another, the frequency data will reflect that action rather than the student’s behaviors.

• It may be appropriate to count the subcomponents of a complex task instead of the completion of the task itself. For example, if the desired behavior is to complete ten double-digit multiplication problems during independent seat-work, the teacher might give each problem three tally marks—one for completing the ones digit column, one for completing the tens digit column, and one for completing the problem.

• Event recording provides more accurate information than does interval recording (described on Page 18).

Resources


http://iris.peabody.vanderbilt.edu
What a STAR Sheet is...

A STAR (STrategies And Resources) Sheet provides you with a description of a well-researched strategy that can help you solve the case studies in this unit.

What It Is

Interval recording is a method of documenting whether a behavior occurred during a brief time periods (e.g., 10 seconds), referred to as intervals. At the end of each of these intervals, the observer records whether or not a behavior has occurred. There are two types of interval recording:

- **Whole-interval recording** – yields data on the total duration of the behavior. When utilizing whole-interval recording, an observer indicates whether the behavior occurred for the entire interval.
  
  **Example:** A student worked on an assignment for an entire thirty-second interval.

- **Partial-interval recording** – yields data on the proportion of the observation period that the behavior occurred. 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 for fifteen seconds of a thirty-second interval.

What the Research and Resources Say

- 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 (Cooper, Heron, & Heward, 2007; Special Connections, n.d.).
The table below highlights research using both whole- and partial-interval recording.

<table>
<thead>
<tr>
<th>Behavior Studied</th>
<th>Type of Data Measurement</th>
<th>Interval Length</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>On task: Sitting at desk, working on assignment quietly, asking for help appropriately</td>
<td>Whole interval</td>
<td>30 second</td>
<td>Wood, Umbreit, Liaupsin, &amp; Gresham, 2007</td>
</tr>
<tr>
<td>Appropriate play with computers, books, toys; passivity; stereotypical behaviors</td>
<td>Whole interval</td>
<td>5 second</td>
<td>Longano &amp; Greer, 2006</td>
</tr>
<tr>
<td>Off-task behavior</td>
<td>Partial interval</td>
<td>5 second</td>
<td>Tincani, Ernsbarger, Harrison, &amp; Heward, 2005</td>
</tr>
<tr>
<td>Problem behaviors: Verbal refusal statements, aggression, destruction</td>
<td>Partial interval</td>
<td>10 second</td>
<td>Peterson, Frieder, Smith, Quigley, &amp; Van Norman, 2009</td>
</tr>
<tr>
<td>On task: Sitting in seat; eye contact while talking to teacher</td>
<td>Partial interval</td>
<td>10 second</td>
<td>Haydon, Mancil, &amp; Van Loan, 2009</td>
</tr>
<tr>
<td>Teacher behaviors: Disciplinary actions</td>
<td>Partial interval</td>
<td>10 second</td>
<td>Grskovic, Hall, Montgomery, Vargas, Zentall, &amp; Belfiore, 2004</td>
</tr>
</tbody>
</table>

**Tips for Implementation**

- Consider using a prompt to signal the beginning and end of intervals, such as:
  - Audio recording with beeps (headphones should be used!)
  - Electronic device that vibrates
  - Cellphone apps

- To use the interval recording method, use the steps outlined below:
  1. Schedule the observation period at times during which the behavior is most likely to occur. Typically, observations last between ten minutes and an hour, although it is more accurate and less burdensome to use shorter periods.
  2. Divide the observation period into equal intervals. These intervals are usually between five and fifteen seconds long.
     a. Whole interval: Record with an “x,” plus sign, or check-mark if the behavior occurred throughout the duration of 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 0.
     b. 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 sign or 0.
  3. 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.
**Interval Recording Form**

Student: **Merrit**  
Date: **9/26/XX**

Class/Teacher: **Ms. Knowles**  
Observer: **Mr. Fisk**

Time/Length of Observation: **10 mins.**  
Length of Interval: **10 secs.**

Target Behavior: **Merrit engages in off-task behavior (e.g., daydreaming, walks around classroom during independent seatwork)**

**Codes:** Example: ✓ or + for occurrence of behavior; 0 or – for non-occurrence of behavior

<table>
<thead>
<tr>
<th>Interval</th>
<th>Behavior</th>
<th>Interval</th>
<th>Behavior</th>
<th>Interval</th>
<th>Behavior</th>
<th>Interval</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>✓</td>
<td>16</td>
<td>✓</td>
<td>31</td>
<td>☐</td>
<td>46</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>✓</td>
<td>17</td>
<td>✓</td>
<td>32</td>
<td>☐</td>
<td>47</td>
<td>☐</td>
</tr>
<tr>
<td>3</td>
<td>☐</td>
<td>18</td>
<td>☐</td>
<td>33</td>
<td>✓</td>
<td>48</td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>☐</td>
<td>19</td>
<td>☐</td>
<td>34</td>
<td>✓</td>
<td>49</td>
<td>✓</td>
</tr>
<tr>
<td>5</td>
<td>✓</td>
<td>20</td>
<td>✓</td>
<td>35</td>
<td>☐</td>
<td>50</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>☐</td>
<td>21</td>
<td>☐</td>
<td>36</td>
<td>✓</td>
<td>51</td>
<td>☐</td>
</tr>
<tr>
<td>7</td>
<td>✓</td>
<td>22</td>
<td>✓</td>
<td>37</td>
<td>✓</td>
<td>52</td>
<td>☐</td>
</tr>
<tr>
<td>8</td>
<td>☐</td>
<td>23</td>
<td>✓</td>
<td>38</td>
<td>☐</td>
<td>53</td>
<td>✓</td>
</tr>
<tr>
<td>9</td>
<td>✓</td>
<td>24</td>
<td>✓</td>
<td>39</td>
<td>☐</td>
<td>54</td>
<td>✓</td>
</tr>
<tr>
<td>10</td>
<td>✓</td>
<td>25</td>
<td>☐</td>
<td>40</td>
<td>✓</td>
<td>55</td>
<td>☐</td>
</tr>
<tr>
<td>11</td>
<td>☐</td>
<td>26</td>
<td>☐</td>
<td>41</td>
<td>☐</td>
<td>56</td>
<td>☐</td>
</tr>
<tr>
<td>12</td>
<td>☐</td>
<td>27</td>
<td>✓</td>
<td>42</td>
<td>☐</td>
<td>57</td>
<td>☐</td>
</tr>
<tr>
<td>13</td>
<td>✓</td>
<td>28</td>
<td>✓</td>
<td>43</td>
<td>☐</td>
<td>58</td>
<td>☐</td>
</tr>
<tr>
<td>14</td>
<td>☐</td>
<td>29</td>
<td>✓</td>
<td>44</td>
<td>✓</td>
<td>59</td>
<td>✓</td>
</tr>
<tr>
<td>15</td>
<td>☐</td>
<td>30</td>
<td>☐</td>
<td>45</td>
<td>✓</td>
<td>60</td>
<td>☐</td>
</tr>
</tbody>
</table>

**TOTAL**  
30

\[
\frac{\frac{5}{60} \times \frac{100}{60}}{30} = 50\%
\]
• Only one behavior at a time should be observed when using whole-interval recording, due to the necessity of observing during the entire interval. 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.

• If an observer is not sure whether the behavior occurred (e.g., a student walks behind a bookshelf or room divider where he or she cannot be seen), the inability to observe should be documented on the observation form, rather than attempting to guess what is occurring.

• Because whole-interval recording requires the observer’s constant attention, it can be difficult to observe and record simultaneously. When using whole-interval recording, you might need to alternate intervals during which you observe and record (e.g., observe for ten seconds, record for five second, observe for ten seconds, record for five seconds). This gives you time to record your observation before the next observation interval. (Note: Whole-interval recording is not practical if the teacher is the observer.

Keep In Mind

• Interval recording provides an estimate 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.

The graphic below illustrates this tendency.

- If you need an accurate measure of the rate of behavior, event recording should be used. Interval recording does not provide this type of data.
- The shorter the intervals, the more accurate the recording.

http://iris.peabody.vanderbilt.edu
Resources


What a STAR Sheet is...

A STAR (STrategies And Resources) Sheet provides you with a description of a well-researched strategy that can help you solve the case studies in this unit.

What it is...

**Duration recording** is a method of documenting how long a student engages in a specified behavior.

What the Research and Resources Say...

- Duration recording is appropriate for behaviors that have a distinct beginning and end 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) (Alberto & Troutman, 2006; Cooper, Heron, & Heward, 2007).
- The table below highlights research using duration recording.

<table>
<thead>
<tr>
<th>Behavior Studied</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-task: Looking at the assignment, writing and asking questions related to the topic, using assigned materials, and following teacher directions</td>
<td>Ramsey, Jolivette, Patterson, &amp; Kennedy, 2010</td>
</tr>
<tr>
<td>Compliance to task demands</td>
<td>Wehby &amp; Hollahan, 2000</td>
</tr>
<tr>
<td>Academic writing tasks</td>
<td>Athens, Vollmer, &amp; St. Peter Pipkin, 2007</td>
</tr>
</tbody>
</table>

Tips for Implementation

- Consider using a digital stopwatch to increase the accuracy of duration recording. A wall clock or wristwatch can be used but may not be as accurate.
- To use the duration-recording method, follow the steps below:
  1. When the behavior begins, start the stopwatch.
  2. When the behavior ends, stop the stopwatch.
  3. Record the length of time that the behavior occurred.
  4. Repeat the above steps until the end of the observation period.
  5. Calculate the total duration by adding the duration of each episode during the observation period.

(Note: Some digital stopwatches will automatically calculate the total time.)
## STAR Strategy
### Duration Recording Form

Student: __________________________ Date: _____________________________  
Class/ Teacher: _____________________ Observer: __________________________  
Time/ Length of Observation: _____________________________________________  
Behavior: __________________________________________________________________

<table>
<thead>
<tr>
<th>Time Start</th>
<th>Time End</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example (digital stopwatch) 00:00</td>
<td>04:27</td>
<td>4 minutes, 27 seconds</td>
</tr>
<tr>
<td>Example (wall clock) 8:30</td>
<td>08:57</td>
<td>7 minutes</td>
</tr>
<tr>
<td>TOTAL/ AVERAGE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional comments:

http://iris.peabody.vanderbilt.edu
• Video or audio recordings may be used to collect duration data—and viewed or listened to later—if it is impractical to collect duration data during class.

• Consider collecting frequency data for the target behavior in combination with duration data to provide a more accurate picture of the student’s behavior. It is quite different for a student to engage in five episodes of screaming that last ten minutes each than to engage in one episode that lasts fifty-five minutes.

Keep In Mind

• You might also want to report duration data in terms of the average duration per observation period (total duration / number of occurrences) if the observation period is consistent. For example, the student has five minutes at the end of a class each day to work on his homework. The student works on his homework for a total of fifteen minutes across five days. To calculate the average duration the student worked on his homework, divide fifteen minutes by five days. The average is three minutes.

• If the observation periods vary in length (e.g., the class has twenty minutes in the library the first week of the month and fifteen minutes the second week of the month), the percentage of time the student engaged in the behavior can be calculated by dividing the total minutes of the behavior’s duration (e.g., 20 minutes) by the number of minutes in the observation period (e.g., 60 minutes) and multiplying by 100.
Resources


What a STAR Sheet is...

A STAR (STrategies And Resources) Sheet provides you with a description of a well-researched strategy that can help you solve the case studies in this unit.

What It Is

**Latency recording** is a method of documenting the time between when a direction is given and when the student complies.

What the Research and Resources Say

- 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 or ends (Cooper, Heron, & Heward, 2007; Special Connections, n.d.).
- The table below highlights research using latency recording.

<table>
<thead>
<tr>
<th>Behavior studied</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time delay between a statement/question and the student’s attempt to communicate</td>
<td>Mancil, Conroy, Nakao, &amp; Alter, 2006</td>
</tr>
<tr>
<td>Lapse between instructions and compliance with task</td>
<td>Lee et al., 2006</td>
</tr>
<tr>
<td>Time delay between being shown a word and pronouncing it</td>
<td>Bosman, Gompel, Vervloed, &amp; Van Bon, 2006</td>
</tr>
</tbody>
</table>

Tips for Implementation

- Consider using a digital stopwatch to increase the accuracy of latency recording. A wall clock or wrist watch can be used if a digital stopwatch is unavailable.
- To use the latency recording method, follow the steps below:
  1. Start the stopwatch when the prompt, directive, or instruction is provided.
  2. Stop the stopwatch when student complies.
  3. Record the number of seconds or minutes that elapsed between the end of the direction and the onset of the compliance.
  4. Repeat the above steps until the end of the observation period.
  5. Calculate the average latency of the behavior by dividing the total latency (e.g., 60 seconds) by the number of occurrences (e.g., 3 directions).
Latency Recording Form

Student: ___________________________ Date: ______________________________
Class/ Teacher: ______________________ Observer: ___________________________
Time/ Length of Observation: ______________________________________________
Behavior: ______________________________________________________________

<table>
<thead>
<tr>
<th>Time of request or cue</th>
<th>Time behavior was initiated</th>
<th>Latency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examples</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(regular clock) 11:30 am</td>
<td>11:35 am 05:49</td>
<td>5 minutes</td>
</tr>
<tr>
<td>(digital stopwatch) 00:00</td>
<td></td>
<td>5 minutes, 49 seconds</td>
</tr>
</tbody>
</table>

Total Latency

Number of Occurrences

\[
\frac{60}{3} = 20
\]

Average latency is 20 secs.

TOTAL/AVERAGE

http://iris.peabody.vanderbilt.edu
Keep In Mind

- When calculating average latency, it is easier to convert minutes to seconds. After you’ve performed your calculations, you can convert the data back into minutes if you prefer.

Resources


Level A, Case 1

Definition:

- **Event recording**—a way to measure the number of times a behavior occurs within a given period.
- **Interval recording**—a method of documenting whether a behavior occurred during a brief period, referred to as intervals.

Appropriateness of each strategy:

- **Event recording**—appropriate because Mark’s disruptive comments have a distinct beginning and end and do not occur so frequently that it is difficult to distinguish between episodes. Allows the observer to count the number of times Mark makes a disruptive comment.
- **Interval recording** (specifically partial interval recording)—appropriate because Mark’s comments are discrete and would not take up the entire interval. Allows the observer to count the number of intervals during which Mark makes a disruptive comment.

Level A, Case 2

Definition:

- **Interval recording**—a method of documenting whether a behavior occurred during a brief period, referred to as intervals.
- **Duration recording**—a method of documenting how long a student engages in a specified behavior.
- **Latency recording**—a method of recording that measures the time between when a teacher gives a direction and the student complies.

Appropriateness of each strategy for measuring out-of-seat behavior:

- **Interval recording**—This method allows you to estimate the percentage of time that Theresa is out of her seat. Because Theresa’s out-of-seat behaviors are discrete yet also last for a while, interval recording would be appropriate. Whole-interval recording would be more appropriate if Theresa is out of her seat for extending periods of time. Partial-interval recording would be more appropriate if Theresa is out of her seat for brief periods of time.
- **Duration recording**—This method allows you to measure the amount of time that Theresa is out of her seat.
- **Latency recording**—This is not an appropriate method for measuring out-of-seat behavior.
Appropriateness of each strategy for measuring procrastinating behavior:

- **Interval recording**—This is not an appropriate method for measuring procrastinating behavior.
- **Duration recording**—This is not an appropriate method for measuring procrastinating behavior.
- **Latency recording**—This method allows you to determine the amount of time between the teacher’s directive and Theresa’s compliance (e.g., getting her materials, starting to work).

**Level B, Case 1**

Operational definition of problem behavior:

- Johnny bites students during group activities and he pinches the teacher during one-on-one instruction.

Most appropriate method of measuring behavior:

- a. Event recording—Biting and pinching have discrete beginning and endings and are therefore easy to count. They are also serious behaviors that hurt other people, so it is imperative to get an accurate measure of these behaviors. Event recording is more accurate than interval recording.

- b. Accept any reasonable response.

Example: The teacher can observe Johnny during group activities and use a simple tally sheet to record each occurrence of biting. Because it is important to observe Johnny during the entire observation period so that an episode of biting or pinching is not missed, it might be helpful to recruit another staff member to assist with the observations. When working 1:1 with Johnny, the teacher could move a paper clip from one pocket to the other for each instance of pinching to allow for discrete documentation of each occurrence.

**Level B, Case 2**

Operational definition of target behavior:

- Alex engages in off-task behavior (i.e., reading magazines, sleeping, going to the bathroom) during independent seatwork with a partner.

Operational definition of replacement behavior:

- Alex will be on-task (i.e., working on his assignment) during independent seatwork with a partner.

Most appropriate method of measuring behavior:

- a. Duration recording—This method is appropriate to measure continuous or sustained off-task behaviors such as reading *Sports Illustrated*, sleeping, and leaving class to go to the restroom. Duration recording is appropriate because the concern is the amount of time Alex is off-task, how many times he reads *Sports Illustrated*, sleeps, or goes to the restroom.

- b. Accept any reasonable response.

Example: Mr. Cashman could start a digital stopwatch at the beginning of Alex’s off-task behavior and stop the stopwatch when the off-task behavior ends. He would repeat this process for each instance of off-task behavior. The digital timer will keep track of the total amount of time Alex is off-task.
Level C, Case 1

Do you agree with Ms. Anderson’s data collection choices? Explain your answer.

Accept reasonable responses on whether or not they agree.

Example: I agree that latency recording would be appropriate to determine how much time elapses between Ms. Anderson’s directive and Howard starting his work. I also agree that event recording is an appropriate method for keeping track of the number of inappropriate comments Howard makes. Ms. Anderson could use interval recording to document his comments, but it is less accurate than event recording.

Calculate the latency and frequency data. Analyze Howard’s data. Are Ms. Anderson’s concerns about Howard’s latency behavior justified? Why or why not?

Latency Data

<table>
<thead>
<tr>
<th>Date</th>
<th>Time Howard was instructed to begin work</th>
<th>Time behavior was initiated</th>
<th>Latency</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/1/xx</td>
<td>8:35:00 am</td>
<td>8:35:33 am</td>
<td>0:33 seconds</td>
</tr>
<tr>
<td>12/2/xx</td>
<td>8:35:09 am</td>
<td>8:37:14 am</td>
<td>2:05 minutes</td>
</tr>
<tr>
<td>12/3/xx</td>
<td>8:36:01 am</td>
<td>8:36:29 am</td>
<td>0:28 minutes</td>
</tr>
<tr>
<td>12/4/xx</td>
<td>8:35:02 am</td>
<td>8:36:33 am</td>
<td>1:31 minutes</td>
</tr>
<tr>
<td>12/5/xx</td>
<td>8:36:30 am</td>
<td>8:37:14 am</td>
<td>0:44 seconds</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td>1:04 seconds</td>
</tr>
</tbody>
</table>

Frequency Data

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Tally (Appropriate Comments)</th>
<th>Total</th>
<th>Rate</th>
<th>Tally (Inappropriate Comments)</th>
<th>Total</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/1/xx</td>
<td>8:35:40</td>
<td>//</td>
<td>1</td>
<td>1/15 min.</td>
<td>///</td>
<td>8</td>
<td>8/15 min.</td>
</tr>
<tr>
<td>12/2/xx</td>
<td>8:35:40</td>
<td>/</td>
<td>0</td>
<td>0/15 min.</td>
<td>/// /// /// /// / / / / / / / / /</td>
<td>12</td>
<td>12/15 min.</td>
</tr>
<tr>
<td>12/3/xx</td>
<td>8:35:40</td>
<td>//</td>
<td>2</td>
<td>2/15 min.</td>
<td>/// /// /// /// / / / / / / / / /</td>
<td>7</td>
<td>7/15 min.</td>
</tr>
<tr>
<td>12/4/xx</td>
<td>8:35:40</td>
<td>/</td>
<td>1</td>
<td>1/15 min.</td>
<td>///</td>
<td>9</td>
<td>9/15 min.</td>
</tr>
<tr>
<td>12/5/xx</td>
<td>8:35:40</td>
<td>/</td>
<td>0</td>
<td>0/15 min.</td>
<td>///</td>
<td>4</td>
<td>4/15 min.</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td>.8</td>
<td>.8/15 min.</td>
<td>Average</td>
<td>8</td>
<td>8/15 min.</td>
</tr>
</tbody>
</table>

Howard’s latency ranges from 28 seconds to 2:05 minutes with an average latency of 1:04 minutes. Given that his replacement behavior is to start work within 60 seconds of being told to, his delayed start time is not that problematic. While Ms. Howard might think that latency is a problem, the data show otherwise, and her concerns are unjustified. This underscores the importance of using data to make informed decisions about student behavior.
b. Howard’s appropriate comment use ranges from 0 to 2 comments per observation period (average of .8), while his inappropriate comment use ranges from 4 to 12 comments per observation period (average of 8). His behavior in this area is problematic and Ms. Howard’s concerns are justified.

Based on the scenario above, do you think there is other information that Ms. Anderson should collect? If so, list the behaviors and explain possible data collection methods.

Accept reasonable responses.

Example: Howard appears to spend a great deal of time out of his seat (e.g., taking the long way back to his desk from the pencil sharpener). Ms. Anderson may want to consider collecting duration data on his out-of-seat behavior. Similarly, Ms. Anderson could collect data on any of his off-task behaviors, using appropriate data collection methods.

Example: Many of Howard’s inappropriate comments are directed toward another student (Davis) who, in some instances, appears to initiate the inappropriate verbal interactions. Ms. Anderson might consider collecting event recording data on Davis’s appropriate and inappropriate comments and latency data on Davis’s work initiation.

Example: Because one of Ms. Anderson’s concerns listed in the scenario was Howard’s inability to complete his work, she might want to collect data on the number of problems that Howard completes every day. We realize that this type of data collection—permanent product—is not covered in the scope of this case study, but perceptive students may recognize the need for this information. It might prove useful to collect this information for Davis as well.

Example: A final consideration is that the math is too hard for Howard, which is why he engages in avoidance behavior (e.g., out-of-seat and inappropriate comments). It could also explain why he finishes so few problems. His teacher may want to assess Howard’s math skills.

Level C, Case 2

Do you agree with Mrs. Patel’s data collection choices? Which data collection method do you think is best to use with Rachel’s behavior? Explain your answers.

Accept reasonable responses.

Example: Rachel’s two problem behaviors were blurring out answers and off-task behavior (i.e., talking to friends, writing notes). Because Rachel’s blurring-out behavior is easy to count (it has a distinct beginning and ending), I agree that event recording is appropriate. Because there are several behaviors included in being off-task, I agree that interval recording is an appropriate choice.

Complete the forms by calculating the event and interval data. Analyze Rachel’s data. Are the teachers’ concerns about blurring out answers justified? Why or why not?

Event data for blurring out answers
a. Rachel waited to be called on between 0 and 2 times per class period (average of 1.2), while she blurted out between 2-6 times per class period (average of 4). Rachel blurts out far more frequently than she waits to be called on. Her teacher's concerns about this behavior are justified.

b. Rachel was off-task for 40 of the 60 intervals (67% of the time) and she was on-task for 20 of the 60 intervals (33% of the time). She is off-task twice as much as she is on-task; her teachers' concerns about this behavior are justified.

Identify an alternate method of data collection for each behavior below and explain how Mrs. Patel would collect the data. Accept reasonable responses.

a. Calling-out behavior

Example: When Rachel blurts out an answer, the latency of her response is too short. Therefore, another option to consider is using latency recording to measure the amount of time between when Mr. Smith asks a question and when Rachel answers.

b. Off-task behavior

Example: Mrs. Patel could have also collected duration data for the amount of time Rachel spent on- and off-task. This might give a more accurate measure of how much time she spends off-task, where interval recording provides an approximation of this data.