ASSESSING THE STIMULUS CONTROL OF OBSERVERS

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Thesis Prepared for the Degree of

MASTER OF SCIENCE

UNIVERSITY OF NORTH TEXAS

December 2009

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Kuhn, Robin Merritt. *Assessing the stimulus control of observers.* Master of Science (Behavior Analysis), December 2009, 127 pp., 15 figures, references, 18 titles.

The science of behavior analysis relies heavily on direct observation. Human observers are typically used to measure behavior in applied settings. Although the use of human observers is beneficial in many regards, it also presents challenges. Of primary concern is the extent to which the data generated by observers actually corresponds to the behavioral events of interest, and the implications this may have in terms of replication. This study assessed the effects that labels, definitions, and examples and non-examples of two different modalities had on observer accuracy, consistency, and agreement. Results showed that current practices in observer training may require refinement to ensure high observer accuracy, consistency, and agreement. Suggestions for how to improve the desired stimulus control of observers are provided.
ACKNOWLEDGEMENTS

To quote Isaac Newton, “If I have seen further it is only by standing on the shoulders of giants.” In that spirit, I would like to extend a heartfelt thank you to my advisor, for without his conceptual direction and facile shaping this research would not exist. Dr. Jesús Rosales-Ruiz, you are truly a giant. I would also like to express my sincerest appreciation to Dr. Shahla Ala’i-Rosales, for her many contributions to this thesis as well as her dedicated mentoring and friendship. You are an inspiration. And to Dr. Manish Vaidya, thank you for the generous and steadfast support you have shown me throughout my graduate training. I would also like to convey my sincerest gratitude to April Becker and Sarah Pinkleman for the assistance they provided. Additionally, I would like to thank the entire Department of Behavior Analysis. The education and support of the faculty and graduate cohort has prepared me for this final endeavor. And last I would like to thank my husband and my parents, whose continuous encouragement has been infinite and invaluable.
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INTRODUCTION

The field of applied behavior analysis relies heavily on direct observation. Given the practical difficulties in mechanizing the measurement of behavior in applied settings, human observers are often used to measure and record behavior. The use of human observers is ideal in many respects. Human observers provide the flexibility necessary to measure a wide range of socially significant behaviors, which vary along a number of dimensions, and occur among diverse populations and in a variety of settings (Hartmann, 1982). However, the use of human observers also presents challenges.

With respect to using human observers, of primary concern is the extent to which the data generated by observers actually corresponds to the behavioral events of interest. As Baer, Wolf, and Risley (1968) point out, “If humans are observing and recording the behavior under study, then any change may represent a change only in their observing and recording responses, rather than in the subject's behavior” (p. 93). Hence, the need for explicit measures of observer behavior is paramount. The measurement practices used to measure the behavior of observers, as well as any other measurement practices, must be evaluated in terms of the following three criteria: reliability, reproducibility, and pragmatism (Simkins, 1969). Reliability refers to the consistency with which repeated measurement of a phenomenon under the same observation conditions produces the same results. Reproducibility refers to whether the measurement criterion is explicit enough for other independent investigators to replicate the experiment and the results obtained. Pragmatism refers to the extent to which the measurement procedures aid in the establishment of systematic functional relations that can be demonstrated reliably.
According to Hawkins and Dotson (1973), “If the experimental effects reported in the behavioral analysis (or any other scientific) literature cannot be relied upon to represent real phenomena, many of our research and programming activities could be a wasted effort” (p. 364). This is a pragmatic concern, and one that is valid. Thankfully it is also a concern that has not been overlooked. Since the 1970s, a fair amount of experimental and methodological literature has attempted to identify the variables necessary to ensure that the data generated by observers actually represents the behavioral phenomena being measured (Bass, 1987; O’Leary, Kent, & Kanowitz (1975); Kazdin, 1977; Mash & McElwee, 1974; Reid, 1970; Repp, Nieminen, Olinger, & Brusca, 1988; Romanczyk, Kent, Diament, & O’Leary, 1973; Wildman, Erickson, & Kent (1975). For the purposes of this study, recommendations for how to train observers and how to define behavior are particularly relevant.

Perhaps one of the most detailed descriptions of an observer training method is provided by Reid (1982) in a book edited by Hartmann entitled *Using Observers to Study Behavior*. Reid recommends that observers memorize the observation manual, receive instruction with respect to data collection techniques, obtain graduated exposure to training videos or role play segments that represent all of the behaviors to be recorded, and receive regular feedback immediately after recording to review and discuss both errors and corrects. Reid suggests that training and feedback continue until observers “demonstrate repeated, near perfect accuracy” (p. 42). Reid also suggests using tests to evaluate the observer’s grasp of the code.

Several others have described methods of training observers that use one or more of the components outlined by Reid (1982). For example, Hawkins and Dobes
(1977) suggest that, “the common practice in preparing observers for recording experimental data is to provide extensive guided experience in the recording of the behaviors in which the experimenter is interested, with a more experienced observer recording the same behaviors as a less experienced observer, and giving frequent feedback on the accuracy with which his recording matches that of the most experienced observer. The training is usually continued until the data of the novice closely matches that of the experienced observer, as indicated by high reliability scores“ (p. 170). This method of training, congruent with the training procedure outlined by Reid (1982), avails observers with the opportunity to create implicit definitions and recording rules. This is problematic in terms of replication, since the implicit guidelines observers are using to record behavior are not explicitly stated in the codes and definitions reported in publications.

In discussing the need for explicit behavioral definitions, Hawkins and Dobes (1977) state, “the varying topography of the response, the absence of a uniform definition of the response in the culture (whether verbal or not), or the complexity of the environmental context for the response is such that only a complex verbal definition can adequately specify the behavior to be recorded” (p. 168). These authors assert that for behavioral definitions to function as intended they should be objective, clear, and complete. Objective definitions refer only to that which is observable, clear definitions use unambiguous language, and complete definitions delineate the entire movement cycle of the behavior of interest and specify what is included and excluded for recording purposes. To assess the extent to which explicit definitions effect observer recording, Hawkins and Dobes (1977) conducted an investigation wherein observers recorded
behavior from definitions borrowed from the published literature on applied behavior analysis in education. In some instances the observers were allowed to form implicit definitions by discussing the definitions with another observer. In other instances the observers were not able to develop implicit definitions. The results of their study showed that when observers were able to develop implicit definitions agreement scores across observer pairs were much different than agreement scores within observer pairs. The authors attributed the difference to the varied implicit definitions determined by each pair. Also, the experimenters compared observer recording when objective, clear and complete definitions were used to observer recording generated from vague definitions. Results showed that objective, clear, and complete behavioral definitions yielded higher interobserver agreement scores.

Unfortunately, Hawkins and Dobes’ (1977) recommendation for defining behavior objectively, clearly, and completely is a practice that has yet to be widely adopted. For example, in a recent study by McIver, Brown, Pfeiffer, Dowda, and Pate (2009), definitions provided in the behavioral code frequently used the label of the behavior in the definition as well as ambiguous terms. For example, climbing was described as “climbing, hanging”; crawl was described as “crawling”; and peer engagement was described as “peer is actively engaged in the activity in which the child is participating and no adults are engaged” (pp. 14-16). Though shared culture and history with respect to the terms used in the definitions may allow for some degree of recording accuracy, consistency and agreement, there is an increased likelihood of variable recording based on these descriptions alone. Implicit definitions would be required to obtain acceptable agreement scores for the items listed in McIver et al.’s behavioral code. Evidence that
the authors concur with this interpretation is evidenced by the 8-week training course
observers were required to participate in prior to collecting data for this study. The
training procedure involved providing written tests to ensure observer understanding of
the behavioral code, conducting training sessions from video as well as in vivo training,
and conducting sessions during which the observers and an expert observer both
recorded occurrences of behavior following which interobserver agreement was
assessed. Additionally, the observers used in the study had over 150 hours experience
recording behavior from direct observation.

The purpose of this experiment was to study the effects that label, definitions,
and examples and non-examples of two different modalities had on observer accuracy,
observer consistency, and interobserver agreement.
METHOD

Participants and Sessions

Seven undergraduate students enrolled in courses at the University of North Texas served as participants for this experiment. Participants included five women and two men ranging in age from 18 to 45. Participants were recruited using flyers distributed during courses in behavior analysis. Selection of participants was dependent on available time and lack of experience with direct observation and recording of behavior. Participants were told that they would be observing and recording behavior with the purpose of improving the methods by which observers and staff are trained.

Each participant was scheduled to attend a minimum of four sessions and a maximum of eight sessions each week for up to nine consecutive weeks. Each session lasted between 15 and 35 minutes. The days and times of sessions varied dependent upon each participant’s availability. Three of the participants attended at least two sessions weekly. Participant 1 went one week without attending sessions; Participant 3 went two weeks without attending sessions; and Participant 5 went three weeks without attending sessions.

Participants earned $5.00 for every session attended. Earnings were distributed at the culmination of the study. Compensation was not contingent upon performance. Every participant with the exception of Participant 7 completed between 27 and 35 sessions in total. Participant 1 completed 36 sessions, Participant 2 completed 47 sessions, Participant 3 completed 35 sessions, Participant 4 completed 41 sessions, and Participant’s 5 and 6 completed 46 sessions. Participant 7 was dismissed from the
study due to failure to comply with the observer protocol outlined during pre-training and completed only a portion of his first session.

Setting and Apparatus

All sessions were conducted in a laboratory located within Chilton Hall in the Department of Behavior Analysis at the University of North Texas. The room was approximately 12 feet by 10 feet and was furnished with two desks, a table, two to four chairs, a sofa, a filing cabinet, and a floor lamp. There were also three computers in the room, a laptop and two desktops. The apparatus consisted of one Macintosh® desktop computer with a 24-inch screen equipped with PowerPoint®, a keyboard, a mouse, paper data sheets, paper quizzes, and pencils.

During all sessions the window blinds were drawn and the overhead fluorescent lights were off to reduce glare on the computer screen. The room was lit by a floor lamp and a ceiling light that illuminated the desk at which the participants sat. The experimenter was present during all sessions and sat approximately 5 feet behind the participant throughout the session. The purpose of the experimenter’s presence was to prepare the presentations, administer quizzes, monitor the participants, and address any technical difficulties that might arise. For 23% of the sessions, secondary observers were present during the initial and final portions of the session to observe and take data on the consistency with which the experimenter prepared the apparatus and interacted with the participants.

Measurement

Dependent Variables

The dependent variables assessed in this study include observer consistency, observer accuracy, and interobserver agreement.
Observer Consistency

Observer consistency refers to the extent to which the numbers reported by a participant during one observation session are the same as or similar to the numbers reported during the next observation session during which the observation conditions have not changed. To calculate observer consistency, the lower number of occurrences of behavior recorded was divided by the higher number of occurrences recorded during two consecutive sessions of the same condition. The resulting number was multiplied by 100 to obtain a consistency percentage. For each condition, an average consistency percentage across all sessions in the condition was obtained by totaling the session-to-session percentages of consistency within each condition and dividing by the number of sessions in the condition.

Observer Accuracy

Observer accuracy refers to the extent to which the numbers reported by a participant during one observation session are the same as or similar to an established standard number of occurrences of behavior reported during the same observation session. An established standard number of occurrences of each behavior was obtained by having the experimenter and two additional observers (graduate students in behavior analysis - one with extensive experience and one with limited experience recording behavior from direct observation) score each video clip independently and then together to discuss discrepancies. Discussion involved identifying instances of non-agreement and was followed by the experimenter teaching the discrimination of what was an example and what was a non-example as dictated by the behavioral definition. After all discrepancies were identified and resolved, each observer again
scored the clips independently. This process was repeated until greater than 95% accuracy was obtained.

To calculate observer accuracy, the number of occurrences recorded by the participant was divided by the established standard number of occurrences. The resulting figure was multiplied by 100 to obtain an accuracy percentage. For each condition an average accuracy percentage across all sessions in a condition was obtained by totaling the percentages of accuracy within each condition and dividing by the number of sessions in that condition.

*Interobserver Agreement*

Interobserver agreement refers to the extent to which the number of occurrences reported by one participant is the same as or similar to the number of occurrences reported by another participant during similar observation conditions. To calculate interobserver agreement, the lower number of occurrences of behavior scored by a participant during the last session of a condition was divided by the higher number of occurrences of behavior scored by another participant during the last session of the same condition. The resulting figure was multiplied by 100 to obtain an agreement percentage.

To assess interobserver agreement, participants were arranged into dyads for the purpose of comparison. Participants who were exposed to the same conditions in the same order while scoring the same behavior were compared. The dyads changed depending upon the behavior being scored.
Observer Agreement

To assess the agreement of the recording behavior of the participants, the experimenter repeatedly counted the number of occurrences of each behavior reported by each participant during a session until two consecutive counts resulted in the same number. Observer agreement was calculated by dividing the smaller total number of occurrences counted by the larger total number of occurrences counted and multiplying by 100 to obtain a percentage of observer agreement. Observer agreement was 99%.

Procedural Fidelity

Procedural fidelity was assessed by having secondary observers, fellow graduate students in behavior analysis, conduct a checklist to ensure that tasks related to computer calibration and independent variable implementation were performed during each session. Observers were asked to check a box to indicate that an item had been performed, to leave the box blank if an item had not been performed, and to write N/A if it was not applicable. For example, if the experimenter asked the participant to sign in the observer was to check the corresponding box; if the participant was not told to sign in the box was to go unchecked; and if the participant was already signed in because they had back-to-back sessions the observer was to write in N/A. Procedural fidelity was measured by dividing the smaller number of agreements and disagreements obtained for each sampled checklist and multiplying by 100 to obtain a percentage. Procedural fidelity was 99%.
Procedure

During the initial meeting with each participant, eligibility was confirmed, consent was obtained, contact information was exchanged, and scheduling was arranged. If time allowed, the first session was conducted during this initial meeting.

General Procedures

At the beginning of every session, the participant was greeted and asked to put away their belongings and sign in on the sign in sheet. At this time the experimenter answered any questions the participant had related to the study. Next the participant was invited to sit down and get comfortable. After the participant was comfortable, the participant was ready to begin viewing the presentations. Presentations were in PowerPoint® format. Each presentation consisted of between 7 and 16 slides depending upon the behavior being recorded. Three behaviors were recorded during this study: child eye contact; descriptive praise; and creating a learning opportunity.

During each session, there were three recording blocks. During every recording block a presentation was shown. Each presentation was self-paced, included between 7 and 16 slides, and culminated with the participant recording the frequency of occurrence of one of the three behaviors from a 5-minute long video clip embedded within the presentation. The order in which the presentations for each behavior were provided during a session was random. At the beginning of each presentation the experimenter told the participant the start time to record on the data sheet. The video clip shown for each behavior was scored repeatedly throughout the duration of the study. After the participant had finished advancing through a presentation and had recorded occurrences of the behavior, the experimenter told the participant the stop time to
record on the data sheet. In between presentations the experimenter prepared the next presentation, an activity lasting approximately one minute in duration. Following the last of the three presentations, the experimenter asked the participant to sign the bottom of the data sheet and hand it in, answered any questions the participant had, and reviewed scheduling. If the participant was immediately scheduled for another session, the experimenter asked the participant to gather their belongings and leave the room for five minutes. If the participant was not immediately scheduled for another session, the experimenter asked the participant to gather their belonging and sign out. The experimenter then dismissed the participant.

Pre-training

The purpose of pre-training was to familiarize each participant with the PowerPoint presentations. During pre-training, the participant viewed an introductory presentation which taught the participant how to advance through presentations using the mouse, how to answer questions by clicking on ‘yes’ or ‘no’ buttons, how to play the video clips and then return to the presentation using the escape key on the keyboard, and how to record data on the data sheet. Participants did not record behavior during pre-training and were not exposed to any of the video clips used throughout subsequent sessions. Each participant was required to demonstrate competency in advancing through the pre-training presentation independently prior to beginning the label condition. All subjects except one (Participant 7) were able to do so on the first try.

Label Condition

The presentation during the label condition consisted of 7 slides. The first slide presented during the label condition stated, “You will be recording (e.g., child eye
contact).” If descriptive praise or creating a learning opportunity was to be recorded that label would be presented in place of child eye contact. After the participant clicked on that screen, the next slide told the participant to “Please prepare your pencil and data sheet.” After clicking on the screen the following slide asked: “Is your pencil and data sheet ready?” After the participant clicked on that screen, “Get comfortable” appeared on the next slide. After the clicking on that screen the next slide directed the participant to “Click on the image when you are ready to begin scoring.” After the participant clicked on that screen, a slide appeared that contained no text, only an image that when clicked on filled the screen and played a five-minute video from which the participant was to record the designated behavior. After the video clip had ended and the participant had finished recording behavior, the participant pushed the escape key on the keyboard and then clicked on the black portion of the screen to advance to the next slide. The final slide asked the participant to “Please tell the experimenter you are done.”

Definition Condition

The presentations during the definition condition consisted of 10 slides, although when the competency quiz was presented the presentation consisted of 11 slides. Either 3 or 4 of the slides respectively were new, whereas the other 7 slides were identical to slides viewed during the label condition. The first slide presented during the definition condition stated, “You will be recording (e.g. child eye contact).” If descriptive praise or creating a learning opportunity was to be recorded that label would be presented in place of child eye contact. After the participant clicked on that screen, the next slide presented the behavioral definition for the behavior labeled on the first slide.
**Child Eye Contact Definition**

“Child eye contact’ is defined as the child’s eyes meeting the therapist’s eyes or face. Do not count instances where it is hard to tell whether the child is looking at the therapist or at an object or activity. ‘Child eye contact’ begins either when the child turns his/her head in the direction of the therapist so that his/her face becomes oriented toward the therapist’s face, or when the child moves his/her eyeballs toward the therapist’s face and ends when the child’s and therapist’s eyes no longer meet.”

**Descriptive Praise Definition**

“Descriptive praise’ is defined as the therapist saying a statement of approval such as “good” or “great” accompanied by a statement that specifies the child’s behavior or an aspect of the child’s behavior the therapist approves of such as “writing” or “listening.” To count as ‘descriptive praise’ the specifying statement of approval must be delivered within 3 seconds of the child’s behavior being specified. ‘descriptive praise’ begins when the therapist says a specifying statement of approval and ends when the therapist changes the topic.”

**Creating a Learning Opportunity Definition**

“Creating a learning opportunity’ is defined as the therapist presenting an item or activity to which the child can respond by reaching toward an item, saying something in respect to the item or activity, or exhibiting any other behavior related to the item or activity such as singing, taking turns, etc. Count instances where the therapist presents the object by moving it to another location within reach of the child or pauses so the child can respond. ‘Creating a learning opportunity’ begins when the therapist presents an
item or activity to the child and ends when the item or activity is removed or the child responds.”

   After clicking on the slide with the definition, the following slide read: “Do you understand the definition?” with the words YES and NO in boxes underneath the question. The participant was required to answer the question by clicking either the YES or NO box to continue advancing through the presentation. If the participant clicked YES, a slide that read “Please prepare your pencil and data sheet” was presented. If the participant clicked NO (though no participants did during the duration of this study), the next slide instructed the participant to “Ask the experimenter for help. After obtaining help click the resume button below.” Beneath this text was a box reading RESUME. After the participant clicked the RESUME button, the next slide told the participant to “Please prepare your pencil and data sheet.” The following slide asked: “Is your pencil and data sheet ready?” After the participant clicked on that screen, “Get comfortable.” appeared on the next slide. After the clicking on that screen the next slide directed the participant to “Click on the image when you are ready to begin scoring.” After the participant clicked on that screen, a slide appeared that contained no text, only an image that when clicked on filled the screen and played a five-minute video from which the participant was to record the designated behavior. After the video clip had ended and the participant had finished recording, the participant pushed the escape key on the keyboard and then clicked on the black portion of the screen to advance to the next slide. The final slide asked the participant to “Please tell the experimenter you are done.”
If the participant was required to take a competency quiz during the session, the slide the participant was shown after clicking to answer the question “Do you understand the definition?” stated, “Please ask the experimenter for a quiz.” At this time the experimenter presented the participant with the quiz, scored the quiz after the participant completed it, and gave feedback, when needed, regarding incorrect responses in an effort to teach the relevant discrimination. After receiving any necessary feedback, the participant returned to the presentation and clicked on the screen to continue advancing through it. The remainder of the slides were the same as those shown when no quiz was administered.

The quiz consisted of a sheet of paper with six statements followed by the words ‘TRUE’ and ‘FALSE’. There were two statements for each of the three components of the behavioral definition, one true and one false. At the top of the quiz were instructions that stated, “Please read the statement about (e.g. child eye contact) and circle true if you believe the statement is accurate and false if you believe the statement is inaccurate.” If the quiz was being administered for descriptive praise or creating a learning opportunity, that label would be presented in place of child eye contact.

If the participant correctly identified all six statements as either true or false, he/she immediately continued advancing through the presentation and was not required to retake the quiz during future sessions. If the participant incorrectly identified any statements, he/she received immediate feedback regarding the statement(s) incorrectly identified prior to advancing through the presentation. The participant was also required to retake the quiz during subsequent sessions until all six statements were correctly identified during two consecutive sessions. There were two versions of the quiz for each
behavioral definition. The only difference between the two quizzes was the order in which the questions were presented.

Written Condition

The presentation during the written condition consisted of 14 slides, 4 new and 10 viewed during the definition condition. The first slide presented during the written condition stated, “You will be recording (e.g. child eye contact)”. If descriptive praise or creating a learning opportunity was to be recorded, that label would be presented in place of child eye contact. After the participant clicked on that screen, then next slide presented the behavioral definition for the behavior labeled on the first slide. After clicking on the slide with the definition, the following slide read: “Do you understand the definition?” with the words YES and NO in boxes underneath the question. The participant was required to answer the question by clicking either the YES or NO box to continue advancing through the presentation. After clicking to answer the question the next slide stated, “Get ready for written examples of (e.g. child eye contact).” If descriptive praise or creating a learning opportunity was to be recorded that label would be presented in place of child eye contact. The next slide displayed written examples. (Four written examples were provided for child eye contact, five written examples were provided for descriptive praise, and seven written examples were provided for creating a learning opportunity.) For example, if child eye contact was the behavior the participant was to record, the slide stated: “Examples of ‘child eye contact’: the child looks at the therapist when she says ‘tickle’ so the therapist will tickle him; the child looks at the therapist just before she throws the ball to him; the child looks at the therapist when the therapist gives him an instruction; the child looks at the therapist while eating a snack
she just gave him." After reading the examples, the participant clicked on the slide. The next slide asked the participant to “Get ready for written non-examples of (e.g. child eye contact).” If descriptive praise or creating a learning opportunity was to be recorded that label would be presented in place of child eye contact. (Four written non-examples were provided for child eye contact, five written non-examples were provided for descriptive praise, and seven written non-examples were provided for creating a learning opportunity. After clicking on that slide, the following slide presented written non-examples. For instance, if child eye contact was the behavior to be recorded, the slide read, “Non-examples of ‘child eye contact’: the child looks at a cup of milk the therapist is holding near her face; the therapist praises the child for looking at her, but it is hard to tell if he is looking at her eyes or face or at the hat she is holding near her face; the therapist praises the child for looking at him but only the back of the child’s head is visible; the child appears to look at the therapist’s eyes or face but because of the angle it is hard to tell if he is looking at her or the object in her hand.” After reading the non-examples and clicking on the slide, the following slide requested that the participant “Please prepare your pencil and data sheet.” After clicking on the screen the following slide asked: “Is your pencil and data sheet ready?” After the participant clicked on that screen, “Get comfortable” appeared on the next slide. After the clicking on that screen the next slide directed the participant to “Click on the image when you are ready to begin scoring.” After the participant clicked on that screen, a slide appeared that contained no text, only an image that when clicked on filled the screen and played a five-minute video from which the participant was to record the designated behavior. After the video clip had ended and the participant had finished recording behavior, the
participant pushed the escape key on the keyboard and then clicked on the black portion of the screen to advance to the next slide. The final slide asked the participant to “Please tell the experimenter you are done.”

**Video Condition**

The presentation during the video condition consisted of 16 slides, 6 new and 10 viewed during the definition condition. The first slide presented during the video condition stated, “You will be recording (e.g., child eye contact).” If descriptive praise or creating a learning opportunity was to be recorded that label would be presented in place of ‘child eye contact’. After the participant clicked on that screen, then next slide presented the behavioral definition for the behavior labeled on the first slide. After clicking on the slide with the definition, the following slide read: “Do you understand the definition?” with the words YES and NO in boxes underneath the question. The participant was required to answer the question by clicking either the YES or NO box to continue advancing through the presentation. After clicking to answer the question the next slide stated, “Get ready for video examples of (e.g. child eye contact).” If descriptive praise or creating a learning opportunity were to be recorded that label would be presented in place of child eye contact. The next slide displayed video examples. (Four video examples were provided for child eye contact, five video examples were provided for descriptive praise, and seven video examples were provided for creating a learning opportunity.) After clicking on that slide, the next slide instructed the participant to “Click on each image to watch each video example. Hit escape when you are done watching each clip.” After the participant clicked on that slide the following slide displayed images that when clicked on played short, full screen
videos. For example, if child eye contact was the behavior the participant would be recording, the slide stated: “Examples of ‘child eye contact’:' and showed four still images of a therapist with a child. When the participant clicked on the image in the top left quadrant of the screen a video of the therapist modeling the word “tickle”, the child looking at the therapist, and the therapist tickling the child played. When the participant clicked on the image in the top right quadrant of the screen a video of the therapist saying “Good job, good job, write on the paper” with the child looking at the therapist when she says “write on the paper” played. After clicking on the image in the bottom left quadrant of the screen, the participant saw a video of the therapist with a ball saying “catch” and the child looking at her as he approached. When the image in the bottom right quadrant of the screen was clicked on, a video showing the child eating a snack while looking at the therapist who said “yummy, yummy” played. After the participant clicked on each of the images and watching each of the video examples the next slide and asked the participant to “Get ready for video non-examples of (e.g. child eye contact).” (Four video non-examples were provided for child eye contact, five video non-examples were provided for descriptive praise, and seven video non-examples were provided for creating a learning opportunity.) After clicking on that slide, the next slide stated, “Click on each image to watch each video non-example. Hit escape when you are done watching each clip.” After clicking on that slide, the next slide displayed images that when clicked on played as short, full screen videos. For example, if child eye contact was the behavior to be recorded, the slide stated “Non-examples of ‘child eye contact’:' and showed four still images of a therapist with a child. When the participant clicked on the image in the top left quadrant of the screen, a video showing
the therapist offering the child milk and modeling the word ‘milk’ while the therapist looked at the milk, the camera, and around the room. When the participant clicked on the image in the top right quadrant of the screen a video played of a child laying on the floor with his back to the camera while the therapist said “There’s looking at my eyes for on.” The image in the bottom left quadrant, when clicked on, played a video of the therapist holding a hat near her face and modeling the word “hat” before saying “there’s looking at my eyes for a hat” while the child looked at the hat and perhaps the therapist, but it was hard to tell if he ever looked at her eyes or face. When the participant clicked on the image in the bottom right quadrant of the screen a video showing the child looking at a cheeto the therapist holds up just before she hands him the cheeto and says “cheeto, good job”. After viewing all of the video non-examples and clicking on the black portion of the screen, the following slide requested that the participant “Please prepare your pencil and data sheet.” After clicking on the screen the following slide asked: “Is your pencil and data sheet ready?” After the participant clicked on that screen, “Get comfortable” appeared on the next slide. After the clicking on that screen the next slide directed the participant to “Click on the image when you are ready to begin scoring.” After the participant clicked on that screen, a slide appeared that contained no text, only an image that when clicked on filled the screen and played a five-minute video from which the participant was to record the designated behavior. After the video clip had ended and the participant had finished recording behavior, the participant pushed the escape key on the keyboard and then clicked on the black portion of the screen to advance to the next slide. The final slide asked the participant to “Please tell the experimenter you are done.”
Design

A combination multi-element/multiple baseline design was utilized. The multi-element component of the design was used to compare the effects of written examples and non-examples to video examples and non-examples. The multiple baseline component of the design allowed each participant to remain in the definition condition for creating a learning opportunity until the participant had been exposed to both the written condition and video condition for child eye contact and descriptive praise. Once it had been determined whether the participant’s recording behavior was more accurate during the written condition or the video condition, the condition during which the participant was most accurate was implemented first for ‘creating a learning opportunity’. If similar accuracy was obtained during both the written condition and the video condition, the condition implemented first for creating a learning opportunity was chosen at random but was balanced across participants.

Each participant remained the label condition for 6 consecutive sessions. During the definition, written, and video conditions the participants remained in the condition until their data was stable. Data was considered stable when the number of occurrences recorded deviated by no more than three occurrences across three consecutive sessions. Figures 1 through 6 illustrate the design and the sequence of conditions for each participant. Introduction of the written and video conditions following the definition condition was counterbalanced across participants.
RESULTS

Figures 1 through 6 show the number of occurrences of behavior recorded by each participant for each of the three behaviors (child eye contact, descriptive praise, and creating a learning opportunity). In each graph, the circles represent the number of occurrences counted by the participant whereas the line represents the established standard number of occurrences. The open circles during the definition condition indicate the sessions during which a competency quiz was administered.

Participant 1

Figure 1 shows the recording behavior of Participant 1 for child eye contact (top graph), descriptive praise (middle graph), and creating a learning opportunity (bottom graph).

Label Condition

For child eye contact, Participant 1 recorded between 13 and 18 more occurrences than the established standard (7 occurrences). The number of occurrences recorded ranged from 20 to 25 and with no trend visible. For descriptive praise, the number of occurrences recorded by Participant 1 was variable. The number of occurrences recorded deviated between 1 and 5 occurrences from the established standard (10 occurrences) and ranged from 0 to 12. During the first session for descriptive praise 0 occurrences were recorded and 12 occurrences were recorded in the second session. A decreasing trend began during the second session and ended during the fifth session when 4 occurrences were recorded, followed by a jump up to 9 occurrences in the sixth session. For creating a learning opportunity, Participant 1 recorded between 29 and 38 fewer occurrences than the established standard (41
The number of occurrences recorded ranged from 3 to 12. During the first session 3 occurrences were recorded and increased to 12 by the fifth session. During the sixth session 9 occurrences were recorded.

**Definition Condition**

For child eye contact, Participant 1 recorded between 2 and 4 more occurrences than the established standard (7 occurrences) in contrast to between 20 and 25 more occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 9 to 11 with no trend visible. For descriptive praise, Participant 1 recorded between 2 and 4 fewer occurrences than the established standard (10 occurrences) in contrast to a deviation of between 1 and 5 occurrences from the established standard recorded during the label condition. The number of occurrences recorded ranged from 6 to 8 with no trend visible. For creating a learning opportunity, Participant 1 recorded between 26 and 32 fewer occurrences than the established standard (41 occurrences) in contrast to between 29 and 38 fewer occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 9 to 15 with no visible trend.

**Written Condition**

For child eye contact, Participant 1 recorded between 3 and 4 fewer occurrences than the established standard (7 occurrences) in contrast to between 2 and 4 more occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged between 4 and 5 with no visible trend. For descriptive praise, Participant 1 recorded between 4 and 5 fewer occurrences than the established standard (10 occurrences) in contrast to between 2 and 4 fewer
occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged from 5 to 6 with no visible trend. For creating a learning opportunity, Participant 1 recorded between 33 and 35 fewer occurrences than the established standard (41 occurrences) in contrast to between 29 and 38 fewer occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged from 6 to 8 with a slight increasing trend visible throughout the condition. The increasing trend began during the first session when 6 occurrences were recorded and ended during the last session when 8 occurrences were recorded.

Video Condition

For child eye contact, Participant 1 recorded between 1 and 3 fewer occurrences than the established standard (7 occurrences) in contrast to between 3 and 4 fewer occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 4 to 6 with no trend visible. For descriptive praise, Participant 1 recorded 5 fewer occurrences than the established standard (10 occurrences) in contrast to between 4 and 5 fewer occurrences than the established standard recorded during the written condition. The number of occurrences recorded was 5 with no visible trend. For creating a learning opportunity, Participant 1 recorded between 32 and 36 less occurrences than the established standard (41 occurrences) in contrast to between 33 and 35 fewer occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 5 to 9 with no visible trend.
Participant 2

Figure 2 shows the recording behavior of Participant 2 for child eye contact (top graph), descriptive praise (middle graph), and creating a learning opportunity (bottom graph).

Label Condition

For child eye contact, Participant 2 recorded between 6 and 18 more occurrences than the established standard (7 occurrences). The number of occurrences recorded ranged from 13 to 25. During the first session 25 occurrences were recorded, beginning a decreasing trend that ended during the third session when 14 occurrences were recorded. During the fourth session 17 occurrences were recorded, beginning another decreasing trend that ended during the sixth session when 13 occurrences were recorded. For descriptive praise, the number of occurrences recorded by Participant 2 was variable. The number of occurrences recorded deviated between 2 and 3 occurrences from the established standard (10 occurrences). During the first session 8 occurrences were recorded, beginning an increasing trend that ended during the third session when 13 occurrences were recorded. Throughout the final four sessions of the condition the number of occurrences recorded was 13. For creating a learning opportunity, Participant 2 recorded between 24 and 30 fewer occurrences than the established standard (41 occurrences). The number of occurrences recorded ranged from 11 to 17. During the first session, 11 occurrences were recorded beginning an increasing trend that ended during the third session when 17 occurrences were recorded. During the final four sessions the number of occurrences recorded was around 16.
Definition Condition

For child eye contact, Participant 2 recorded between 0 and 6 more occurrences than the established standard (7 occurrences) in contrast to between 16 and 18 more occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 7 to 13. An increasing trend began during the first session when 13 occurrences were recorded and ended during the fifth session when 7 occurrences were recorded. Another increasing trend began during the fifth session and ended in the seventh session when 10 occurrences were recorded. During the last three sessions, 10 occurrences were recorded. For descriptive praise, Participant 2 recorded between 0 and 3 more occurrences than the established standard (10 occurrences) in contrast to a deviation of between 2 and 3 occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 10 to 13 with no visible trend. For creating a learning opportunity, Participant 2 recorded between 26 and 30 fewer occurrences than the established standard (41 occurrences) in contrast to between 24 and 30 fewer occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 11 to 15 with no visible trend.

Written Condition

For child eye contact, Participant 2 recorded between 1 and 3 more occurrences than the established standard (7 occurrences) in contrast to between 0 and 6 more occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged between 8 and 10 with no visible trend. For descriptive praise, Participant 2 recorded between 1 and 3 fewer occurrences than the
established standard (10 occurrences) in contrast to between 2 and 3 less occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged between 7 and 9 with no visible trend. For creating a learning opportunity, Participant 2 recorded between 24 and 30 less occurrences than the established standard (41 occurrences) the same as between 24 and 30 occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged between 10 and 17. During the first session, 15 occurrences were recorded and 17 occurrences were recorded in the second session. A decreasing trend that began during the second session ended during the seventh session when 10 occurrences were recorded. An increasing trend that began during the seventh session ended when 12 occurrences were recorded during the twelfth session.

*Video Condition*

For child eye contact, Participant 2 recorded between 1 and 2 more occurrences than the established standard (7 occurrences) in contrast to between 1 and 3 more occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 8 to 9 with no visible trend. For descriptive praise, the number of occurrences recorded by Participant 2 was variable. The number recorded deviated from the established standard (10 occurrences) by between 1 and 3 occurrences in contrast to between 1 and 3 fewer occurrences than the established standard recorded during the written condition. The number of occurrences of descriptive praise recorded ranged from 7 to 11. A slight decreasing trend began during the first session when 11 occurrences were recorded and ended during the fifth session when 7 occurrences were recorded. During the sixth session 8
occurrences were recorded. For creating a learning opportunity, Participant 2 recorded between 26 and 30 less occurrences than the established standard (41 occurrences) in contrast to 24 and 30 less occurrences than the established standard recorded during both the definition and written conditions. The number of occurrences recorded ranged from 11 to 15 with no visible trend.

Participant 3

Figure 3 shows the recording behavior of Participant 3 for child eye contact (top graph), descriptive praise (middle graph), and creating a learning opportunity (bottom graph).

*Label Condition*

For child eye contact, Participant 3 recorded between 0 and 10 more occurrences than the established standard (7 occurrences). The number of occurrences recorded ranged from 7 to 17. During the first session 7 occurrences were recorded, beginning an increasing trend that ended during the third session when 17 occurrences were recorded. During sessions four through six around 13 occurrences were recorded. For descriptive praise, Participant 3 recorded between 3 and 4 fewer occurrences than the established standard (10 occurrences). The number of occurrences recorded ranged from 6 to 7 with no visible trend. For creating a learning opportunity, Participant recorded between 30 and 33 less occurrences than the established standard (42 occurrences). The number of occurrences recorded ranged from 8 to 11 with no visible trend.
**Definition Condition**

For child eye contact, the number of occurrences recorded by Participant 3 was variable. The number recorded deviated from the established standard (7 occurrences) by between 0 and 1 occurrence(s) in contrast to between 0 and 10 more occurrences than the established standard recorded during the label condition. The number of occurrences of eye contact recorded ranged from 6 to 8. During all sessions the number of occurrences recorded was around 7 with no visible trend. For descriptive praise, Participant 3 recorded between 2 and 4 fewer occurrences than the established standard (10 occurrences) in contrast to between 3 and 4 fewer occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 6 to 8 with no visible trend. For creating a learning opportunity, Participant 3 recorded between 28 and 31 fewer occurrences than the established standard (41 occurrences) in contrast to between 30 and 33 fewer occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 11 to 13 with no visible trend.

**Written Condition**

For child eye contact, Participant 3 recorded 3 fewer occurrences than the established standard (7 occurrences) in contrast to deviation of between 0 and 1 occurrence(s) from the established standard during the definition condition. The number of occurrences recorded was 4 with no visible trend. For descriptive praise, Participant 3 recorded 4 fewer occurrences than the established standard (10 occurrences) in contrast to between 2 and 4 fewer occurrences than the established standard recorded during the definition condition. The number of occurrences recorded was 6 with no
visible trend. For creating a learning opportunity, Participant 3 recorded between 28 and 29 fewer occurrences than the established standard (41 occurrences) in contrast to between 28 and 31 fewer occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged between 12 and 13 with no visible trend.

**Video Condition**

For child eye contact, Participant 3 recorded between 0 and 1 fewer occurrences than the established standard (7 occurrences) in contrast to 3 fewer occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 6 to 7 with no visible trend. For descriptive praise, Participant 3 recorded 4 fewer occurrences than the established standard (10 occurrences) the same as during the written condition where 4 fewer occurrences than the established standard were recorded. The number of occurrences recorded was 6 with no visible trend. For creating a learning opportunity, Participant 3 recorded between 29 and 30 fewer occurrences than the established standard (41 occurrences) in contrast to between 28 and 29 fewer occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 11 to 12 with no visible trend.

**Participant 4**

Figure 4 shows the recording behavior of Participant 4 for child eye contact (top graph), descriptive praise (middle graph), and creating a learning opportunity (bottom graph).
Label Condition

For child eye contact, Participant 4 recorded between 5 and 15 more occurrences than the established standard (7 occurrences). The number of occurrences recorded ranged from 12 to 22. During the first session 22 occurrences were recorded beginning a decreasing trend that ended during the third session when 12 occurrences were recorded. Another decreasing trend began during the fourth session when 15 occurrences were recorded and end during the sixth session when 12 occurrences were recorded. For descriptive praise, the number of occurrences recorded by Participant 4 was variable. The number of occurrences recorded deviated between 1 and 3 occurrences from the established standard (10 occurrences) and ranged from 9 to 13 with no visible trend. For creating a learning opportunity, Participant 4 recorded between 26 and 27 fewer occurrences than the established standard (41 occurrences). The number of occurrences recorded ranged from 14 to 15 with no visible trend.

Definition Condition

For child eye contact, Participant 4 recorded between 0 and 3 more occurrences than the established standard (7 occurrences) in contrast to between 5 and 15 more occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 7 to 10 with no visible trend. For descriptive praise, Participant 4 recorded between 1 and 3 fewer occurrences than the established standard (10 occurrences) in contrast to deviation between 0 and 3 occurrences from the established standard recorded during the label condition. The number of occurrences recorded ranged from 7 to 9 with no visible trend. For creating a learning opportunity, Participant 4 recorded between 26 and 31 fewer occurrences than
the established standard (41 occurrences) in contrast to between 26 and 27 fewer occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 10 to 15 with no visible trend.

**Written Condition**

For child eye contact, the number of occurrences recorded by Participant 4 was variable. The number of occurrences recorded deviated between 0 and 2 occurrences from the established standard (7 occurrences) in contrast to between 0 and 3 more occurrences than the established standard recorded during the definition condition. The number of occurrences of child eye contact recorded ranged from 5 to 8. A slight increasing trend began during the first session when 5 occurrences were recorded and ended when 7 occurrences were recorded during the sixth session. For descriptive praise, Participant 3 recorded between 0 and 3 fewer occurrences than the established standard (10 occurrences) in contrast to between 1 and 3 fewer occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged from 7 to 10 with no visible trend. For creating a learning opportunity, Participant 3 recorded between 24 and 25 fewer occurrences than the established standard (41 occurrences) in contrast to between 26 and 31 fewer occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged between 16 and 17 with no visible trend.

**Video Condition**

For child eye contact, Participant 4 recorded between 0 and 1 more occurrences than the established standard (7 occurrences) in contrast to deviation of between 0 and 2 occurrences than the established standard recorded during the written condition. The
number of occurrences recorded ranged from 7 to 8 with no visible trend. For descriptive praise, Participant 4 recorded between 1 and 2 fewer occurrences than the established standard (10 occurrences) in contrast to between 0 and 3 fewer occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 8 to 9 with no visible trend. For creating a learning opportunity, Participant 4 recorded between 20 and 26 fewer occurrences than the established standard (41 occurrences) in contrast to between 24 and 25 fewer occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 15 to 21 with no visible trend.

Participant 5

Figure 5 shows the recording behavior of Participant 5 for child eye contact (top graph), descriptive praise (middle graph), and creating a learning opportunity (bottom graph).

Label Condition

For child eye contact, Participant 5 recorded between 16 and 22 more occurrences than the established standard (7 occurrences). The number of occurrences recorded ranged from 23 to 29. A bouncy decreasing trend is visible during the first 5 sessions of the condition. For descriptive praise, Participant 5 recorded between 2 and 6 more occurrences than the established standard (10 occurrences). The number of occurrences recorded ranged from 12 to 16 with no visible trend. For creating a learning opportunity, Participant 5 recorded between 34 and 36 fewer occurrences than the established standard (41 occurrences). The number of occurrences recorded ranged from 5 to 7 with no visible trend.
Definition Condition

For child eye contact, Participant 5 recorded between 10 and 14 more occurrences than the established standard (7 occurrences) in contrast to between 16 and 22 more occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 17 to 21 with no visible trend. For descriptive praise, Participant 5 recorded between 1 and 2 more occurrences than the established standard (10 occurrences) in contrast to between 2 and 6 more occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 11 to 12 with no visible trend. For creating a learning opportunity, Participant 5 recorded between 11 and 22 fewer occurrences than the established standard (41 occurrences) in contrast to between 34 and 36 fewer occurrences than the established standard recorded during the label condition. The number of occurrences recorded ranged from 19 to 30. In first session 5 occurrences were recorded increasing to 7 occurrences recorded during the third session. During the fourth through sixth sessions around 7 occurrences were recorded.

Written Condition

For child eye contact, Participant 5 recorded between 1 and 2 more occurrences than the established standard (7 occurrences) in contrast to between 10 and 14 more occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged from 8 to 9 with no visible trend. For descriptive praise, Participant 5 recorded between 1 and 2 more occurrences than the established standard (10 occurrences) as during the definition condition. The number of occurrences recorded ranged from 11 to 12 with no visible trend. For creating a learning
opportunity, Participant 5 recorded between 13 and 22 fewer occurrences than the established standard (41 occurrences) in contrast to between 11 and 22 fewer occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged between 19 and 28 with no visible trend.

**Video Condition**

For child eye contact, Participant 5 recorded between 0 and 7 more occurrences than the established standard (7 occurrences) in contrast to between 1 and 2 more occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 7 to 14. During the first session, 14 occurrences were recorded decreasing to around 8 occurrences throughout the second through sixth sessions. For descriptive praise, the number of occurrences recorded by Participant 5 was variable. The number recorded deviated between 1 and 2 occurrences from the established standard (10 occurrences) in contrast to between 1 and 2 more occurrences than the established standard recorded during the written condition. The number of occurrences of descriptive praise recorded ranged from 8 to 11 with no visible trend. For creating a learning opportunity, Participant 5 recorded between 23 and 26 more occurrences than the established standard (41 occurrences) in contrast to between 13 and 22 fewer occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 26 to 29 with no visible trend.
Participant 6

Figure 1 shows the recording behavior of Participant 6 for child eye contact (top graph), descriptive praise (middle graph), and creating a learning opportunity (bottom graph).

Label Condition

For child eye contact, Participant 6 recorded between 17 and 28 more occurrences than the established standard (7 occurrences). The number of occurrences recorded ranged from 24 to 35. During the first session, 35 occurrences of child eye contact were recorded decreasing to 24 occurrences recorded in the third session. During session four through six the number of occurrences recorded was around 26.

For descriptive praise, the number of occurrences recorded by Participant 6 was variable. The number of occurrences recorded deviated between 1 and 21 from the established standard (10 occurrences) and ranged from 9 to 31. In the first session, 31 occurrences were recorded decreasing to 9 occurrences recorded in the third session. An increasing trend begins during the third session and ends during the sixth session when 20 occurrences were recorded. For creating a learning opportunity, Participant 6 recorded between 9 and 20 fewer occurrences than the established standard (41 occurrences). The number of occurrences recorded ranged from 21 to 36. During the first session, 22 occurrences were recorded increasing to 36 occurrences recorded in the fourth session. A decreasing trend began during the fourth session and ended during the sixth session when 21 occurrences were recorded.
**Definition Condition**

For child eye contact, Participant 6 recorded between 1 and 7 more occurrences than the established standard (7 occurrences) in contrast to between 17 and 28 occurrences more than the established standard recorded during the label condition. The number of occurrences recorded ranged from 8 to 14. During the first session, 14 occurrences were recorded decreasing to 8 occurrences during the third session. During session three through eight around 8 occurrences were recorded. A slight increasing trend began during the eighth session and ended in the tenth session when 11 occurrences were recorded. During the tenth through the twelfth sessions around 11 occurrences were recorded. For descriptive praise, Participant 6 recorded between 1 and 2 fewer occurrences than the established standard (10 occurrences) in contrast to deviation of between 1 and 21 from the established standard recorded during the label condition. The number of occurrences recorded ranged from 7 to 19 with no visible trend. For creating a learning opportunity, the number of occurrences recorded by Participant 6 was variable. The number of occurrences recorded deviated between 1 and 24 occurrences from the established standard in contrast to between 9 and 20 fewer occurrences than the established standard recorded during the label condition. The number of occurrences of creating a learning opportunity recorded ranged from 17 to 42. During the first session 36 occurrences were recorded and 42 occurrences were recorded in the second session. A decreasing trend that began during the second session ended during the fifteenth session when 17 occurrences were recorded. During the sixteenth session 17 occurrences were also recorded, increasing to 22 during the twenty-first session and then back to 21 during the twenty-third session.
Written Condition

For child eye contact, Participant 3 recorded between 3 and 4 more occurrences than the established standard (7 occurrences) in contrast to between 1 and 7 more occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged from 10 to 11 with no visible trend. For descriptive praise, Participant 6 recorded between 1 and 2 fewer occurrences than the established standard (10 occurrences) in contrast to between 1 and 2 fewer occurrences than the established standard recorded during the definition condition. The number of occurrences recorded ranged from 8 to 9 with no visible trend. For creating a learning opportunity, Participant 6 recorded between 9 and 11 fewer occurrences than the established standard (41 occurrences) in contrast to deviation between 1 and 24 occurrences from the established standard recorded during the definition condition. The number of occurrences recorded ranged from 30 to 35 with no visible trend.

Video Condition

For child eye contact, Participant 6 recorded between 1 and 3 more occurrences than the established standard (7 occurrences). The number of occurrences recorded ranged from 8 to 10. During the first session 10 occurrences were recorded decreasing to 8 occurrences recorded in the fifth session. For descriptive praise, Participant 6 recorded between 2 and 4 fewer occurrences than the established standard (10 occurrences) in contrast to between 1 and 2 fewer occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 6 to 8 with no visible trend. For creating a learning opportunity, Participant 6 recorded between 9 and 22 fewer occurrences than the established standard (41
occurrences) in contrast to 9 and 11 fewer occurrences than the established standard recorded during the written condition. The number of occurrences recorded ranged from 19 to 32 with no visible trend.

Figures 7 through 12 show the average percentage of accuracy obtained by each participant during each condition for each of the three behaviors. The top graph in each figure shows average accuracy percentage obtained for child eye contact, the middle graph in each figure shows the average accuracy percentage obtained for descriptive praise, and the bottom graph in each figure show the average accuracy percentage obtained for creating a learning opportunity. Percentages over 100 indicate that the participant scored a greater number of occurrences than the established standard, whereas percentages under 100 indicate that the participant recorded fewer occurrences than the established standard. The first bar in each graph represents the accuracy percentage obtained by the participant and the second bar in each graph represents the established standard number of occurrences.

Participant 1

The average accuracy percentage obtained by Participant 1 for child eye contact during the label condition was 312% as compared to 291% during the definition condition. During the video condition the average accuracy percentage dropped to 74% and fell to 68% in the written condition. Participant 1 was most accurate while recording occurrences of child eye contact during the video condition.

The average accuracy percentage obtained by Participant 1 for descriptive praise during the label condition was 68% as compared to 65% during the definition condition. During the written condition the average accuracy percentage dropped to 52% and fell
to 50% in the video condition. Participant 1 was most accurate while recording occurrences of descriptive praise during the label condition.

The average accuracy percentage obtained by Participant 1 for creating a learning opportunity during the label condition was 19% as compared to 30% during the definition condition. During the written condition the average accuracy percentage fell to 18% and was also 18% during the video condition. Participant 1 was most accurate while recording occurrences of descriptive praise during the definition condition.

Participant 2

The average accuracy percentage obtained by Participant 2 for child eye contact was 250% during the label condition as compared to 140% during the definition condition. During the written condition the average accuracy percentage fell to 126% and was also 126% during the video condition. Participant 2 was most accurate while recording occurrences of child eye contact during both the written and video conditions.

The average accuracy percentage obtained by Participant 2 for descriptive praise was 120% during the label condition as compared to 117% during the definition condition. During the video condition the average accuracy percentage dropped to 80% and then increased to 83% in the written condition. Participant 2 was most accurate while recording occurrences of descriptive praise during the both the definition and written conditions.

The average accuracy percentage obtained by Participant 2 for creating a learning opportunity was 36% during the label condition as compared to 31% during the definition condition. Accuracy remained at 31% throughout the written and video conditions.
conditions. Participant 2 was most accurate while recording occurrences of creating a learning opportunity during the label condition.

Participant 3

The average accuracy percentage obtained by Participant 3 for child eye contact was 177% during the label condition as compared to 100% during the definition condition. During the video condition the average accuracy percentage fell to 97% and then dropped to 57% in the written condition. Participant 3 was most accurate while recording occurrences of child eye contact during the video condition.

The average accuracy percentage obtained by Participant 3 for descriptive praise was 67% during the label condition as compared to 70% during the definition condition. During the written condition the average accuracy percentage fell to 60% and was also 60% during the video condition. Participant 3 was most accurate while recording occurrences of descriptive praise during the definition condition.

The average accuracy percentage of Participant 3 for creating a learning opportunity was 24% during the label condition as compared to 27% during the definition condition. During the video condition the average accuracy increased to 28% and then increased to 32% in the written condition. Participant 3 was most accurate while recording occurrences of descriptive praise during the written condition.

Participant 4

The average accuracy percentage obtained by Participant 4 for child eye contact during the label condition was 207% as compared to 122% during the definition condition. During the written condition the average accuracy percentage dropped to
88% and then increased to 104% in the video condition. Participant 4 was most accurate while recording occurrences of child eye contact during the video condition.

The average accuracy percentage obtained by Participant 4 for descriptive praise was 110% during the label condition as compared to 78% during the definition condition. During the video condition the average accuracy percentage increased to 80% and then increased to 83% in the written condition. Participant 4 was most accurate while recording occurrences of descriptive praise during the label condition.

The average accuracy obtained by Participant 4 for creating a learning opportunity was 36% during the label condition as compared to 30% during the definition condition. During the video condition the average accuracy percentage increased to 40% and then increased to 43% during the written condition. Participant 4 was most accurate while recording occurrences of descriptive praise during the written condition.

Participant 5

The average accuracy percentage obtained by Participant 5 for child eye contact was 356% during the label condition as compared to 282% during the definition condition. During the video condition the average accuracy percentage decreased to 131% and then decreased to 124% in the written condition. Participant 5 was most accurate while recording occurrences of child eye contact during the written condition.

The average accuracy percentage obtained by Participant 5 for descriptive praise was 142% during the label condition as compared to 118% during the definition condition. During the written condition the average accuracy percentage fell to 112%
and then dropped to 98% in the video condition. Participant 5 was most accurate while recording occurrences of descriptive praise during the video condition.

The average accuracy percentage obtained by Participant 5 for creating a learning opportunity was 16% during the label condition as compared to 57% during the definition condition. During the written condition the average accuracy percentage increased to 60% and then increased to 67% in the video condition. Participant 5 was most accurate while recording occurrences of descriptive praise during the video condition.

Participant 6

The average accuracy percentage obtained by Participant 6 for child eye contact was 395% during the label condition as compared to 139% during the definition condition. During the written condition the average accuracy percentage increased to 149% and then decreased to 129% during the video condition. Participant 6 was most accurate while recording occurrences of child eye contact during the written condition.

The average accuracy obtained by Participant 6 for descriptive praise was 183% during the label condition as compared to 80% during the definition condition. During the video condition the average accuracy percentage fell to 76% and then increased to 84% in the written condition. Participant 6 was most accurate while recording occurrences of descriptive praise during the written condition.

The average accuracy obtained by Participant 6 for creating a learning opportunity was 70% during the label condition as compared to 58% during the definition condition. During the video condition the average accuracy percentage increased to 66% and then increased to 80% in the written condition. Participant 6 was
most accurate while recording occurrences of descriptive praise during the written condition.

Figures 9 and 10 show the average percentage of consistency obtained by each participant during each condition. In Figure 7, the top graph shows Participant 1’s average consistency percentages, the middle graph and bottom graphs show average consistency percentages for Participant’s 2 and 3 respectively. In Figure 8, the top graph shows Participant 4’s average consistency percentages, the middle graph and bottom graphs show the average consistency percentages for Participant’s 5 and 6 respectively. The first bar in each graph represents child eye contact, the second bar represents descriptive praise, and the final bar represents creating a learning opportunity.

Participant 1

Average consistency of occurrences of child eye contact recorded by Participant 1 was 85% during the label condition as compared to 91% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 9 percentage points. Average consistency during the written condition was 100% as compared to 86% during the video condition. Participant 1 was most consistent while recording occurrences of child eye contact during the written.

Average consistency of occurrences of descriptive praise recorded by Participant 1 was 51% during the label condition as compared to 90% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 2 percentage points. Average consistency during the written condition was 92% as compared to 100% during the video condition. Participant 1 was
most consistent while recording occurrences of descriptive praise during the video condition.

Average consistency of occurrences of creating a learning opportunity recorded by Participant 1 was 73% during the label condition as compared to 89% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 6 percentage points. Average consistency during the written condition was 95% and was also 85% during the video condition. Participant 1 was most consistent while recording occurrences of descriptive praise during the written condition.

Participant 2

Average consistency of occurrences of child eye contact recorded by Participant 2 was 81% during the label condition as compared to 89% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 1 percentage point. Average consistency during the written condition was 90% and was also 95% during the video condition. Participant 2 was most consistent while recording occurrences of child eye contact during the video condition.

Average consistency of occurrences of descriptive praise recorded by Participant 2 was 92% during both the label condition and the definition condition. In comparing the definition condition to the written condition, average consistency decreased by 3 percentage points. Average consistency during the written condition was 89% and was 90% during the video condition. Participant 2 was most consistent while recording occurrences of descriptive praise during the both the label and definition conditions.
Average consistency of occurrences of creating a learning opportunity recorded by Participant 2 was 83% during the label condition as compared to 93% during the definition condition. In comparing the definition condition to the written condition, average consistency decreased by 4 percentage points. Average consistency during the written condition was 89% and was 91% during the video condition. Participant 2 was most consistent while recording occurrences of descriptive praise during the definition condition.

Participant 3

Average consistency of occurrences of child eye contact recorded by Participant 3 was 90% during the label condition as compared to 94% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 6 percentage points. Average consistency during the written condition was 100% and was 96% during the video condition. Participant 3 was most consistent while recording occurrences of child eye contact during the written condition.

Average consistency of occurrences of descriptive praise recorded by Participant 3 was 97% during the label condition as compared to 93% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 7 percentage points. Average consistency during the written condition was 100% and was also 100% during the video condition. Participant 3 was most consistent while recording occurrences of descriptive praise during both the written and video conditions.

Average consistency of occurrences of creating a learning opportunity recorded by Participant 3 was 92% during the label condition as compared to 96% during the
definition condition. In comparing the definition condition to the written condition, average consistency increased by 2 percentage points. Average consistency during the written condition was 98% and was also 98% during the video condition. Participant 3 was most consistent while recording occurrences of descriptive praise during both the written and video conditions.

Participant 4

Average consistency of occurrences of child eye contact recorded by Participant 4 was 82% during the label condition as compared to 93% during the definition condition. In comparing the definition condition to the written condition, average consistency decreased by 8 percentage points. Average consistency during the written condition was 85% and was 92% during the video condition. Participant 4 was most consistent while recording occurrences of child eye contact during the definition condition.

Average consistency of occurrences of descriptive praise recorded by Participant 4 was 87% during the label condition as compared to 92% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 1 percentage point. Average consistency during the written condition was 93% and was 87% during the video condition. Participant 4 was most consistent while recording occurrences of descriptive praise during the written condition.

Average consistency of occurrences of creating a learning opportunity recorded by Participant 4 was 96% during the label condition as compared to 90% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 5 percentage points. Average consistency during the
written condition was 95% and was 93% during the video condition. Participant 4 was most consistent while recording occurrences of descriptive praise during the written condition.

Participant 5

Average consistency of occurrences of child eye contact recorded by Participant 5 was 91% during the label condition as compared to 89% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 7 percentage points. Average consistency during the written condition was 96% and was 81% during the video condition. Participant 5 was most consistent while recording occurrences of child eye contact during the written condition.

Average consistency of occurrences of descriptive praise recorded by Participant 5 was 87% during the label condition as compared to 97% during the definition condition. In comparing the definition condition to the written condition, average consistency did not change. Average consistency during the written condition was 97% and was 87% during the video condition. Participant 5 was most consistent while recording occurrences of descriptive praise during both the definition and written conditions.

Average consistency of occurrences of creating a learning opportunity recorded by Participant 5 was 91% during the label condition as compared to 92% during the definition condition. In comparing the Definition Condition to the written condition, average consistency increased by 1 percentage point. Average consistency during the written condition was 93% and was 97% during the video condition. Participant 5 was
most consistent while recording occurrences of descriptive praise during the video condition.

Participant 6

Average consistency of occurrences of child eye contact recorded by Participant 6 was 89% during the label condition as compared to 90% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 8 percentage points. Average consistency during the written condition was 98% and was 95% during the video condition. Participant 6 was most consistent while recording occurrences of child eye contact during the written condition.

Average consistency of occurrences of descriptive praise recorded by Participant 6 was 68% during the label condition as compared to 97% during the definition condition. In comparing the definition condition to the written condition, average consistency did not change. Average consistency during the written condition was 97% and was 88% during the video condition. Participant 6 was most consistent while recording occurrences of descriptive praise during both the definition and written conditions.

Average consistency of occurrences of creating a learning opportunity recorded by Participant 6 was 92% during the label condition as compared to 91% during the definition condition. In comparing the definition condition to the written condition, average consistency increased by 4 percentage points. Average consistency during the written condition was 95% and was 87% during the video condition. Participant 6 was most consistent while recording occurrences of descriptive praise during the written condition.
Figure 11 shows the percentage of agreement obtained by each participant dyad during each condition. The top graph shows agreement percentages with respect to child eye contact, the middle graph and bottom graphs show agreement percentages for descriptive praise and creating a learning opportunity respectively. The first bar in each graph represents the label condition, the second bar represents the definition condition, the third bar represents the written condition and the final bar represents the video condition.

Interobserver Agreement

Agreement percentages for Participant’s 1 and 3 ranged from 67% to 80% while recording child eye contact. For descriptive praise, agreement percentages ranged from 78% to 100%. For Participant’s 1 and 5, agreement percentages ranged from 50% to 84% for child eye contact, 45% to 64% for descriptive praise, and 30% to 67% for creating a learning opportunity. Agreement percentages for Participant’s 3 and 5 ranged from 35% to 78% while recording child eye contact. For descriptive praise, agreement percentages ranged from 50% to 60%. For Participant’s 2 and 4, agreement percentages ranged from 78% to 92% for child eye contact and from 58% to 100% for descriptive praise. Agreement percentages for Participant’s 2 and 6 ranged from 52% to 100% while recording child eye contact. For descriptive praise, agreement percentages ranged from 65% to 100%. For Participant’s 4 and 6, agreement percentages ranged from 48% to 88% for child eye contact, from 55% to 100% for descriptive praise, and from 48% to 67% for creating a learning opportunity. Agreement percentages for Participant’s 2 and 5 ranged from 40% to 52% while recording creating a learning opportunity. For Participant’s 3 and 4, agreement percentages for creating a learning
opportunity ranged from 71% to 92%. Agreement percentages for Participant’s 3 and 6 ranged from 40% to 52% for creating a learning opportunity.
DISCUSSION

This experiment analyzed the stimulus control of observers’ recording generated by four conditions: the label of the behavior, the definition of the behavior, video examples and non-examples of the behavior, and written examples and non-examples of the behavior. The results show that although some of these conditions were helpful in improving the accuracy, consistency, and agreement of observers, the conditions were not enough to achieve the desired stimulus control meant by the observation code. These results suggest that the common practices for training observers need to be refined to ensure that the behavior recorded by the observers is actually the behavior intended by the experimenter.

The purpose of the label condition was to evaluate the stimulus control the label of each of the three behaviors had over the participant’s recording behavior before any training. With the exception of perhaps creating a learning opportunity, it was expected that participants would demonstrate fairly similar recording for child eye contact and descriptive praise because these labels were more likely to have comparable stimulus control as the one operating in the cultural at large. This was the case for descriptive praise, where the recording behavior of participants was closest in accuracy to that intended by the experimenter (80%). However, the average accuracy percentage obtained for child eye contact (40%) was low. This might be due to an exclusion rule for the recording of child eye contact. The behavioral definition, used to establish the standard number of occurrences of child eye contact, contained criterion that excluded observers from recording occurrences where it was hard to tell whether the child was looking at the therapist or at an object or activity. With respect to creating a learning
opportunity, the average accuracy percentage of 34% was also low. This is not especially surprising given the complexity and scope of the behaviors included in creating a learning opportunity, and the different meaning the label may have in ordinary language as compared to within the specialized culture of autism intervention. Observer agreement during the label condition was relatively low and was fairly similar across behaviors. Average agreement for child eye contact was 67%, for descriptive praise was 66%, and for creating a learning opportunity was 59%. Consistency percentages, however, fell within the range of what is generally considered acceptable yet were also fairly similar across behaviors. Average consistency was 86% for child eye contact, was 80% for descriptive praise, and was 88% for creating a learning opportunity. In summary, when the label was provided average accuracy percentages obtained for all three behaviors were different and unacceptable, average agreement percentages obtained for all three behaviors were similar and unacceptable, and average consistency percentages obtained for all three behaviors were similar and acceptable.

Behavior analysts have long recognized that labels are often insufficient in controlling the desired recording behavior of observers, largely because the stimulus control of the labels is unknown. In an effort to teach the desired stimulus control, experimenters use behavioral definitions. Behavioral definitions should describe behavior in physical dimensions so observers are able to identify particular instances for the purpose of measurement. According to Hawkins and Dobes (1977), behavioral definitions are to be objective, clear, and complete. The behavioral definitions utilized in this experiment followed Hawkins and Dobes’ guidelines for defining behavior.
However, the results of this experiment show that defining behavior in the manner suggested in the guidelines was not enough to produce generally acceptable levels of observer accuracy and interobserver agreement, although improvements in accuracy, agreement, and consistency were noted.

When participants were presented with the behavioral definition, the average accuracy percentage for child eye contact jumped to 70%, an increase of 30 percentage points from when only the label was provided. This suggests that the definition was effective in teaching observers some of the relevant aspects of the behavior. In contrast, the accuracy percentages for descriptive praise (77%) and creating a learning opportunity (39%) only improved by 6 and 5 percentage points respectively. This may mean that either the definitions for descriptive praise and creating a learning opportunity did not provide new information pertaining to the relevant aspects of the behavior, or that although the definitions did provide new information, the new information provided did not exert the intended stimulus control over the observer’s recording behavior.

Regarding observer agreement, percentages still fell below generally acceptable levels, although improvements were noted across all behaviors. The average agreement percentage across all behaviors when the definition was provided was 68%, an increase of 4 percentage points from when the label alone was presented. Low agreement percentages across all behaviors suggest that the stimulus control provided by the behavioral definition was different for each of the participants. Observer consistency during the definition condition improved slightly across all behaviors. Average consistency was 92% when the definition was provided, an increase of 7 percentage points from when only the label was presented. Higher consistency percentages across
all behaviors during this condition as compared to the label condition suggest that the definitions did function to make explicit or clarify some aspect of what was to be recorded, but not necessarily that which was intended by the experimenter.

Behavior analysts have also long recognized that behavioral definitions are not enough to control the desired recording behavior of observers and that examples and non-examples are needed to limit and expand the scope of the behavioral definition. Examples should illustrate instances of the behavior that may not be obvious from the behavioral definition alone. Non-examples should describe non-occurrences of the behavior, as well as events that may resemble occurrences of the behavior but do not entirely fit the definition. As suggested by Hawkins (1982), the examples and non-examples used in this experiment were selected from “actual events that can be observed in the situation in which the code is to be used so that they will be the most relevant” (p. 28). However, the results of this experiment show that using relevant examples and non-examples that were situation and child specific was not enough to produce generally acceptable levels of observer accuracy and consistency, and interobserver agreement. For all three behaviors, introduction of either written examples and non-examples or video examples and non-examples resulted in mixed effects.

When presented with examples and non-examples of either modality, the recording behavior in some participants became more accurate, in other participants became less accurate, and no changes were seen in others depending upon the behavior being recorded and the order in which the examples and non-examples of each modality were presented. Across observers and behaviors there were 19 instances where increases in observer accuracy were seen, 10 instances where
decrements in observer accuracy were noted, and in 7 instances there was no change in observer accuracy following the presentation of examples and non-examples. Improvements in accuracy were fairly equally distributed across both modalities of examples and non-examples as well as across order of presentation. Improvements in accuracy were generally more substantial with video examples and non-examples than with written examples and non-examples, however improvements were fairly equally distributed across both modalities of examples and non-examples as well as across orders of presentation. Decreases in accuracy were more frequent with written examples and non-examples than video examples and non-examples. Instances during which no change was seen following the presentation of examples and non-examples were equally distributed across the two modalities. However, it is important to note that because the content was the same across both forms of examples and non-examples, no change in accuracy was expected for the 5 instances where examples and non-examples of one modality were presented following examples and non-examples of the other modality.

Altogether, presentation of examples and non-examples did not have a significant impact on the overall accuracy percentage obtained for any of the three behaviors. At the end of the experiment, average observer accuracy was 77% for child eye contact, 75% for descriptive praise, and 45% for creating a learning opportunity.

When presented with examples and non-examples of either modality, interobserver agreement increased in some participant dyads, decreased in other dyads, and no changes were seen in other dyads depending upon the behavior being recorded and the order in which the examples and non-examples of each modality were
presented. Across participants and behaviors, there were 17 instances where increases in agreement occurred, 15 instances where decreases in agreement were observed, and 4 instances where no change in agreement was noted when examples and non-examples were presented. Improvements in agreement were more frequent when video examples and non-examples were provided and when participants were recording child eye contact and descriptive praise, yet were equally distributed across the two orders of presentation. Decreases in agreement were more frequent with written examples and non-examples, and were fairly equally distributed across the two orders of presentation. More decrements in agreement were observed for creating a learning opportunity than for the other two behaviors. All instances where no change in agreement was seen occurred when examples and non-examples of one modality were presented following examples and non-examples of the other modality.

Altogether, presentation of examples and non-examples did not have a significant impact on the overall percentage of interobserver agreement obtained for child eye contact or creating a learning opportunity, however the presentation of video examples and non-examples improved agreement for descriptive praise. At the end of the experiment, average interobserver agreement was 75% for child eye contact, 82% for descriptive praise, and 51% for creating a learning opportunity.

When presented with examples and non-examples of either modality, the recording behavior in some participants became more consistent, in other participants became less consistent, and no changes were seen in others depending upon the behavior being recorded and the order in which the examples and non-examples of each modality were presented. Across participants and behaviors there were 21
instances where consistency increased, 12 instances where consistency decreased, and 3 instances where consistency did not change following the presentation of examples and non-examples. Improvements in observer consistency were fairly equally distributed across orders of presentation, yet were more frequent when written examples and non-examples were provided. Also, the largest differences were observed following the presentation of written examples and non-examples. Decrements in observer consistency were also fairly equally distributed across behaviors, however decreases in consistency were more frequent when video examples and non-examples were provided as compared to when written examples and non-examples were provided. In 3 instances, examples and non-examples did not change consistency. The majority of instances where no change in consistency was observed occurred when examples and non-examples of one modality were presented following examples and non-examples of the other modality.

Altogether, presentation of examples and non-examples did not have a significant impact on the overall percentage of observer consistency obtained for child eye contact, descriptive praise, or creating a learning opportunity. At the end of the experiment, average observer consistency was 95% for child eye contact, 94% for descriptive praise, and 94% for creating a learning opportunity.

As the results of this experiment show, the presentation of behavioral definitions and examples and non-examples were generally not enough to produce acceptable levels of observer accuracy and interobserver agreement. This suggests that additional observer training must accompany presentation of the definition and examples and non-examples. Although there are several methods of training observers, Hawkins and
Dobes (1977) have noted that most training procedures include guided instruction. Guided instruction allows the observer trainee and an expert observer the opportunity to discuss recording discrepancies. According to Hawkins and Dobes (1977) the “extensive guided experience” typically used in observer training procedures results in “observers record[ing] data by an implicit definition rather than by the explicit one.” The observer training procedures used in this study did not avail the observers this opportunity, and for good reason. Although implicit definitions may facilitate high levels of interobserver agreement and perhaps accuracy, the use of implicit definitions presents considerable drawbacks. Hawkins and Dobes (1977) noted three implications of recording from implicit as opposed to explicit definitions: (a) difficulty replicating studies for which the measurement and training procedures are not explicitly described; (b) increased likelihood of subjective and erroneous data generated from implicit definitions; and (c) questionable validity of results reported from potentially erroneous data. These implications are without doubt significant.

With respect to replication, since the implicit guidelines observers use to record behavior are not explicitly stated in the codes and definitions reported in publications, the chances of other laboratories being able to replicate a given study with high fidelity is unlikely. Furthermore, high levels of interobserver agreement do not necessarily reflect high levels of observer accuracy. It is probable that the established accuracy standard one lab arrives at using implicit definitions would not match the established accuracy standard of another lab trying to replicate the study, as it is unlikely both labs would form the same implicit definitions. As Hawkins and Dobes (1977) pointed out, this
situation creates the potential that erroneous data could result from the use of implicit definitions.

Although Hawkins and Dobes (1977) are correct in suggesting that objective, clear, and complete definitions are necessary, the results of this study showed that more is needed. But what else is needed? In order to answer this question it might be helpful to first consider exactly what skills observers must have in their repertoires. When presented with a behavioral definition and it’s accompanying examples and non-examples, observers must be able to appropriately record all instances of the behavior and abstain from recording any non-instances of the behavior. That is, the definition and examples and non-examples should provide the basis for identifying novel instances of behavior. This suggests that observer training should follow along the lines of teaching a concept. According to Keller and Schoenfeld (1950), concepts are defined as discrimination between classes as well as generalization within a class. This is precisely what is desired from behavioral definitions. Markle (1975) offers procedures that seem promising for this endeavor. The initial step to teaching a concept involves specifying the critical and variable attributes. Once identified, these attributes can be referred to when constructing a behavioral definition designed to generate the stimulus control intended by the experimenter. The next step involves creating examples and non-examples that represent the full array of critical and variable attributes to delimit the scope of the behavior. By systematically combining the critical and variable attributes to develop examples and non-examples, a minimal rational set is formed. The minimal rational set consists of the smallest number of examples and non-examples needed to teach the concept of the behavior. Then, novel examples and non-examples must be
used to test the generality or scope of the concept and the observer’s ability to operationalize the discrimination. Only when the observer is able to accurately and consistently identify all novel examples and non-examples should observer begin recording. By using this approach to teach the concept of a behavior, we may be able to standardize observer training.

Although standardized observer training would be beneficial in terms of replication, it would require, however, that not only the definitions and examples and non-examples used in a study be presented in the publication but also a complete description of the training procedures. These procedures should be delineated to such an extent that they could be replicated, along with all other aspects of the study. This will ensure that should differences in findings could not be attributed to differences in observer recordings, especially since interobserver agreement is usually the only measure of observer recording reported.

That said, the importance of measuring observer accuracy, observer consistency, as well as interobserver agreement cannot be overstated. The results of this study illustrate that, although observer accuracy and consistency, and interobserver agreement, are all related, they may also be independent. For example, across all behaviors the average consistency percentages were generally acceptable (80% or above) throughout all conditions of this experiment. However, average accuracy percentages were less than 80% across all conditions for all behaviors with the exception of the video condition for child eye contact. This means that although the participants were recording the same behaviors across sessions, they were not recording the behavior intended by the experimenter. High consistency percentages are
therefore only useful measures once high accuracy percentages have been achieved. The same may be true for interobserver agreement. Two observers may record the same number of occurrences of a behavior, but if that behavior is not the one intended by the experimenter as delineated in the behavioral definition, or if the observers are recording the same different number of occurrences across days, then the interobserver agreement percentage is not particularly useful. These results suggest that it may be advantageous for experimenters to first train accuracy to generally acceptable levels while monitoring consistency and agreement, and then train consistency to generally acceptable levels if needed. Once all observers are recording accurately and consistently, high interobserver agreement should follow.
Figure 1. This figure shows the number of instances of child eye contact, descriptive praise, and creating a learning opportunity recorded by Participant 1 across consecutive sessions throughout the label condition, the definition condition, the written condition, and the video condition. The line represents the established standard number of occurrences, the closed dots represent the number of instances recorded by Participant 1, and the open circles denote the sessions during which a quiz was administered.
Figure 2. This figure shows the number of instances of child eye contact, descriptive praise, and creating a learning opportunity recorded by Participant 2 across consecutive sessions throughout the label condition, the definition condition, the written condition, and the video condition. The line represents the established standard number of occurrences, the closed dots represent the number of instances recorded by Participant 2, and the open circles denote the sessions during which a quiz was administered.
Figure 3. This figure shows the number of instances of child eye contact, descriptive praise, and creating a learning opportunity recorded by Participant 3 across consecutive sessions throughout the label condition, the definition condition, the written condition, and the video condition. The line represents the established standard number of occurrences, the closed dots represent the number of instances recorded by Participant 3, and the open circles denote the sessions during which a quiz was administered.
Figure 4. This figure shows the number of instances of child eye contact, descriptive praise, and creating a learning opportunity recorded by Participant 4 across consecutive sessions throughout the label condition, the definition condition, the written condition, and the video condition. The line represents the established standard number of occurrences, the closed dots represent the number of instances recorded by Participant 4, and the open circles denote the sessions during which a quiz was administered.
Figure 5. This figure shows the number of instances of child eye contact, descriptive praise, and creating a learning opportunity recorded by Participant 5 across consecutive sessions throughout the label condition, the definition condition, the written condition, and the video condition. The line represents the established standard number of occurrences, the closed dots represent the number of instances recorded by Participant 5, and the open circles denote the sessions during which a quiz was administered.
Figure 6. This figure shows the number of instances of child eye contact, descriptive praise, and creating a learning opportunity recorded by Participant 6 across consecutive sessions throughout the label condition, the definition condition, the written condition, and the video condition. The line represents the established standard number of occurrences, the closed dots represent the number of instances recorded by Participant 6, and the open circles denote the sessions during which a quiz was administered.
Figure 7. These graphs show the average percentage of observer accuracy obtained by Participant 1 for child eye contact, descriptive praise, and creating a learning opportunity throughout the label condition, definition condition, written condition, and video condition. The first column in each graph represents Participant 1’s average accuracy percentage and the second column represents the established standard average accuracy percentage.
Figure 8. These graphs show the average percentage of observer accuracy obtained by Participant 2 for child eye contact, descriptive praise, and creating a learning opportunity throughout the label condition, definition condition, written condition, and video condition. The first column in each graph represents Participant 2’s average accuracy percentage and the second column represents the established standard average accuracy percentage.
Figure 9. These graphs show the average percentage of observer accuracy obtained by Participant 3 for child eye contact, descriptive praise, and creating a learning opportunity throughout the label condition, definition condition, written condition, and video condition. The first column in each graph represents Participant 3's average accuracy percentage and the second column represents the established standard average accuracy percentage.
Figure 10. These graphs show the average accuracy percentage obtained by Participant 1 for child eye contact, descriptive praise, and creating a learning opportunity throughout the label condition, definition condition, written condition, and video condition. The first column in each graph represents Participant 4’s average accuracy percentage and the second column in each graph represents the established standard average accuracy percentage.
Figure 11. These graphs show the average accuracy percentage obtained by Participant 5 for child eye contact, descriptive praise, and creating a learning opportunity during the label condition, definition condition, written condition, and video condition. The first column in each graph represents Participant 5’s average accuracy percentage and the second column represents the established standard average accuracy percentage.
Figure 12. These graphs show the average accuracy percentage obtained by Participant 6 for child eye contact, descriptive praise, and creating a learning opportunity during the label condition, definition condition, written condition, and video condition. The first column in each graph represents Participant 6’s average accuracy percentage and the second column represents the established standard average accuracy percentage.
Figure 13. These graphs show the average percentage of observer consistency obtained by Participants 1-3 for child eye contact, descriptive praise, and creating a learning opportunity throughout the label condition, definition condition, written condition, and video condition. The top graph presents average consistency percentages for Participant 1, the middle graph presents average consistency percentages for Participant 2, and the bottom graph presents average consistency percentages for Participant 3. The numbers beneath the columns in each graph represent the order the participant progressed through each condition. The first bar in each graph represents child eye contact, the second bar represents descriptive praise, and the final bar represents creating a learning opportunity.
Figure 14. These graphs show the average percentage of observer consistency obtained by Participants 4-6 for child eye contact, descriptive praise, and creating a learning opportunity throughout the label condition, definition condition, written condition, and video condition. The top graph presents average consistency percentages for Participant 4, the middle graph presents average consistency percentages for Participant 5, and the bottom graph presents average consistency percentages for Participant 6. The numbers beneath the columns in each graph represent the order the participant progressed through each condition. The first bar in each graph represents child eye contact, the second bar represents descriptive praise, and the final bar represents creating a learning opportunity.
Figure 15. These graphs show the percentage of interobserver agreement obtained by each Participant Dyad for child eye contact, descriptive praise, and creating a learning opportunity throughout the label condition, definition condition, written condition, and video condition. The participants in each dyad progressed through all conditions in the same order. The white bar in each graph represents the label condition, the light gray bar represents the definition condition, the dark gray bar represents the written condition, and the black bar represents the video condition.
APPENDIX A
POWERPOINT PRESENTATIONS
You will be recording 'child eye contact'.

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.

Click on the image when you are ready to begin scoring.
Please tell the experimenter you are done.
You will be recording 'child eye contact'.

'child eye contact' is defined as the child's eyes meeting the therapist's eyes or face.

Do not count instances where it is hard to tell whether the child is looking at the therapist or at an object or activity.

'child eye contact' begins either when the child turns his/her head in the direction of the therapist so that his/her face becomes oriented toward the therapist's face, or when the child moves his/her eyeballs toward the therapist's face and ends when the child's and therapist's eyes no longer meet.

Do you understand the definition?

YES  NO

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.
Click on the image when you are ready to begin scoring ‘child eye contact’.

Ask the experimenter for help.
After obtaining help click the resume button below.

RESUME

Please tell the experimenter you are done.
You will be recording 'child eye contact'.

'child eye contact' is defined as the child's eyes meeting the therapist's eyes or face.

Do not count instances where it is hard to tell whether the child is looking at the therapist or at an object or activity.

'child eye contact' begins either when the child turns his/her head in the direction of the therapist so that his/her face becomes oriented toward the therapist's face, or when the child moves his/her eyeballs toward the therapist's face and ends when the child's and therapist's eyes no longer meet.

Do you understand the definition?

YES  NO

Please ask the experimenter for a quiz.

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?
Get comfortable.

Click on the image when you are ready to begin scoring ‘child eye contact’.

Please tell the experimenter you are done.

Ask the experimenter for help.

After obtaining help, click the resume button below.
You will be recording ‘child eye contact’.

‘child eye contact’ is defined as the child’s eyes meeting the therapist’s eyes or face.

To count as ‘child eye contact’ there must be a clear line of vision possible between child and therapist with no objects obstructing vision at eye level.

‘child eye contact’ begins either when the child turns his/her head in the direction of the therapist so that his/her face becomes oriented toward the therapist’s face, or when the child moves his/her eyeballs toward the therapist’s face and ends when the child’s and therapist’s eyes no longer meet.

Do you understand the definition?

YES   NO

Examples of ‘child eye contact’:

- the child looks at the therapist when she says “tickle” so the therapist will tickle him
- the child looks at the therapist just before she throws the ball to him
- the child looks at the therapist when the therapist gives him an instruction
- the child looks at the therapist while eating a snack she just gave him

Get ready for written examples of ‘child eye contact’.

Get ready for written non-examples of ‘child eye contact’.
Non-examples of ‘child eye contact’:

- the child looks at a cup of milk the therapist is holding near her face
- the therapist praises the child for looking at her, but it is hard to tell if he looking at her eyes or face or at the hat she is holding near her face
- the therapist praises the child for looking at him only the back of the child’s head is visible
- the child appears to look at the therapist’s eyes or face but because of the angle it is hard to tell if he is looking at her or the object in her hand

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.

Click on the image when you are ready to begin scoring.
Please tell the experimenter you are done.

Ask the experimenter for help.

After obtaining help click the resume button below.
You will be recording 'child eye contact'.

'child eye contact' is defined as the child's eyes meeting the therapist's eyes or face.

To count as 'child eye contact' there must be a clear line of vision possible between child and therapist unobstructed by object or activity.

'child eye contact' begins either when the child turns his/her head in the direction of the therapist so that his/her face becomes oriented toward the therapist's face, or when the child moves his/her eyeballs toward the therapist's face and ends when the child's and therapist's eyes no longer meet.

Do you understand the definition?

YES  NO

Get ready for video examples of 'child eye contact'.

Examples of 'child eye contact':

Click on each image to watch each video example.
Hit escape when you are done watching each clip.
Get ready for video non-examples of 'child eye contact'.

Click on each image to watch each video non-example.

Hit escape when you are done watching each clip.

Non-examples of 'child eye contact':

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.
Click on the image when you are ready to begin scoring.

Please tell the experimenter you are done.

Ask the experimenter for help.

After obtaining help click the resume button below.

RESUME
You will be recording 'descriptive praise'.

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.

Click on the image when you are ready to begin scoring.
Please tell the experimenter you are done.
You will be recording 'descriptive praise'.

'descriptive praise' is defined as the therapist saying a statement of approval such as "good" or "great" accompanied by a statement that specifies the child's behavior or an aspect of the child's behavior the therapist approves of such as "writing," "listening."

To count as 'descriptive praise' the specifying statement of approval must be delivered within 3 seconds of the child's behavior being specified.

'descriptive praise' begins when the therapist says a specifying statement of approval and ends when the therapist changes the topic.

Do you understand the definition?

YES  NO

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.
Click on the image when you are ready to begin scoring.

Please tell the experimenter you are done.

Ask the experimenter for help.
After obtaining help click the resume button below.

RESUME
You will be recording 'descriptive praise'.

'descriptive praise' is defined as the therapist saying a statement of approval such as "good" or "great" accompanied by a statement that specifies the child's behavior or an aspect of the child's behavior the therapist approves of such as "writing," "listening."

To count as 'descriptive praise' the specifying statement of approval must be delivered within 3 seconds of the child's behavior being specified.

'descriptive praise' begins when the therapist says a specifying statement of approval and ends when the therapist changes the topic.

Do you understand the definition?

YES  NO

Please ask the experimenter for a quiz.

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?
Get comfortable.

Click on the image when you are ready to begin scoring.

Please tell the experimenter you are done.

Ask the experimenter for help.

After obtaining help click the resume button below.

RESUME
You will be recording ‘descriptive praise’.

‘descriptive praise’ is defined as the therapist saying a statement of approval such as good or great accompanied by a statement that specifies the child’s behavior or an aspect of the child’s behavior the therapist approves of such as writing, quick, or quick writing.

To count as ‘descriptive praise’ the specifying statement of approval must be delivered within 3 seconds of the child’s behavior being specified.

‘descriptive praise’ begins when the therapist says a specifying statement of approval and ends when the therapist changes the topic.

Do you understand the definition?

YES  NO

Examples of ‘descriptive praise’:
• saying “Nice looking at it.” when the child looks at a book
• saying “Oh! That was a beautiful sentence!” to the child immediately after he says a longer sentence than usual
• saying “Playing, nice playing.” as the child plays with a toy
• saying “Thank you, dude. Double high fives, double high fives for being a good listener.” within three seconds after the child follows an instruction
• saying “That’s really good thinking.” right after the child gives a correct answer

Get ready for written examples of ‘descriptive praise’.

Get ready for written non-examples of ‘descriptive praise’.
Non-examples of ‘descriptive praise’:

- saying “Thank you.” to the child immediately after he gives a requested item
- saying “Alright! Beautiful!” to the child when he finishes drawing a nice shape
- saying “Oh, you knew it, there’s the same bears.” right after the child correctly matches the bears
- saying “You got two moons for counting so nicely.” to the child more than 3 seconds after the child stops counting
- saying “Whoa, you’re tossing the snake like it’s no big deal.” to the child within 3 seconds of his throwing the snake in the air

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.

Click on the image when you are ready to begin scoring.
Please tell the experimenter you are done.

Ask the experimenter for help.

After obtaining help click the resume button below.

RESUME
You will be recording 'descriptive praise'.

'descriptive praise' is defined as the therapist saying a statement of approval such as good or great accompanied by a statement that specifies the child's behavior or an aspect of the child's behavior the therapist approves of such as writing, quick, or quick writing.

To count as 'descriptive praise' the specifying statement of approval must be delivered within 3 seconds of the child's behavior being specified.

'descriptive praise' begins when the therapist says a specifying statement of approval and ends when the therapist changes the topic.

Do you understand the definition?

YES  NO

Get ready for video examples of 'descriptive praise'.

Click on each image to watch each video example.

Hit escape when you are done watching each clip.

Examples of 'descriptive praise':

[Images of example clips]
Get ready for video non-examples of 'descriptive praise'.

Click on each image to watch each video non-example.
Hit escape when you are done watching each clip.

Non-examples of 'descriptive praise':

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.
Click on the image when you are ready to begin scoring.

Please tell the experimenter you are done.

Ask the experimenter for help.

After obtaining help click the resume button below.
You will be recording 'creating a learning opportunity'.

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.

Click on the image when you are ready to begin scoring.
Please tell the experimenter you are done.
You will be recording 'creating a learning opportunity'.

'Creating a learning opportunity' is defined as the therapist presenting an item or activity to which the child can respond by reaching towards an item, saying something in response to the item or activity, or exhibiting any other behavior related to the item or activity such as singing, taking turns, etc.

Count instances where the therapist presents the object by moving it to another location within reach of the child or pauses so the child can respond.

'Creating a learning opportunity' begins when the therapist presents an item or activity to the child and ends either when the item or activity is removed or the child responds.

Do you understand the definition?

YES
NO

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.
Double click on the image when you are ready to begin scoring.

Ask the experimenter for help.

After obtaining help click the resume button below.

RESUME
You will be recording 'creating a learning opportunity'.

'Creating a learning opportunity' is defined as the therapist presenting an item or activity to which the child can respond by reaching towards an item, saying something in respect to the item or activity, or exhibiting any other behavior related to the item or activity such as singing, taking turns, etc.

Count instances where the therapist presents the object by moving it to another location within reach of the child or pauses so the child can respond.

'Creating a learning opportunity' begins when the therapist presents an item or activity to the child and ends either when the item or activity is removed or the child responds.

Do you understand the definition?

YES  NO

Please ask the experimenter for a quiz.

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?
Get comfortable.

Double click on the image when you are ready to begin scoring.

Ask the experimenter for help.

After obtaining help, click the resume button below.

RESUME
You will be recording ‘creating a learning opportunity’.

'Creating a learning opportunity' is defined as the therapist presenting an item or activity to which the child can respond by reaching towards an item, saying something in respect to the item or activity, or exhibiting any other behavior related to the item or activity such as singing, taking turns, etc.

Count instances where the therapist presents the object by moving it to another location within reach of the child or pauses so the child can respond.

'Creating a learning opportunity' begins when the therapist presents an item or activity to the child and ends either when the item or activity is removed or the child responds.

Do you understand the definition?

YES  NO

Examples of ‘creating a learning opportunity’:

- the therapist comments about a toy and the child acknowledges the statement by responding ‘yes’;
- the therapist holds up a red stacking ring and the child takes it andstacks it;
- the therapist says something for the child to repeat and the child says the same thing;
- the therapist gives the child an instruction and the child performs the instructed task;
- the therapist says ‘high five’ and holds up her hand and when the child does not give her five she ruffles his hair;
- the therapist holds out some items for the child to choose from and the child instead reaches for an item on the table;
- the therapist holds up a picture of a fireman and says ‘Who is this?’ and the child says ‘teacher’.

Get ready for written examples of ‘creating a learning opportunity’.

Get ready for written non-examples of ‘creating a learning opportunity’.
Non-examples of 'creating a learning opportunity':

- the therapist narrates her actions as she prepares paperwork and tasks and the child just smiles and watches
- the child says "it's in the street", the therapist says "it's in the corner", and the child repeats "it's in the street"
- as the child flips pages in a book the therapist mimics the child
- the child says "no", something inaudible, and then "no" again and the therapist says "yeah"
- as the child put a toy through a tunnel the therapist says "you're gonna put it through the hole" and when the toy fell the therapist says "bummer dude"
- while the child plays with beads around his waist the therapist says "very pretty... very clever too"
- the child says "can I go outside" and the therapist says

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.

Click on the image when you are ready to begin scoring.
Please tell the experimenter you are done.

Ask the experimenter for help.

After obtaining help click the resume button below.

RESUME
You will be recording ‘creating a learning opportunity’.

‘Creating a learning opportunity’ is defined as the therapist presenting an item or activity to which the child can respond by reaching towards an item, saying something in respect to the item or activity, or exhibiting any other behavior related to the item or activity such as singing, taking turns, etc.

Count instances where the therapist presents the object by moving it to another location within reach of the child or pauses so the child can respond.

‘Creating a learning opportunity’ begins when the therapist presents an item or activity to the child and ends either when the item or activity is removed or the child responds.

Do you understand the definition?

YES  NO

Get ready for video examples of ‘creating a learning opportunity’.

Examples of ‘creating a learning opportunity’:

Click on each image to watch each video example.

Hit escape when you are done watching each clip.
Get ready for video non-examples of 'creating a learning opportunity'.

Click on each image to watch each video non-example.
Hit escape when you are done watching each clip.

Non-examples of 'creating a learning opportunity':

Please prepare your pencil and data sheet.

Is your pencil and data sheet ready?

Get comfortable.
Click on the image when you are ready to begin scoring.

Please tell the experimenter you are done.

Ask the experimenter for help.
After obtaining help click the resume button below.

RESUME
BEHAVIORAL DEFINITIONS QUIZ: ‘child eye contact’

Instructions: Please read the statement about ‘child eye contact’ and circle true if you believe the statement is accurate and circle false if you believe the statement is inaccurate.

1. ‘child eye contact’ is defined as the therapist's eyes meeting the child's eyes or face.
   
   TRUE                       FALSE

2. ‘child eye contact’ should only be scored if the child moves his head in the direction of the therapist to orient towards the therapist’s face.
   
   TRUE                       FALSE

3. ‘child eye contact’ can begin with the child moving his head or his eye balls in the direction of the therapist's face.
   
   TRUE                       FALSE

4. If it is hard to tell that the child is looking at the therapist's eyes or face and not at an item or activity an instance of child eye contact should not be recorded.
   
   TRUE                       FALSE

5. ‘child eye contact’ is defined as the child’s eyes meeting the therapist’s eyes or face.
   
   TRUE                       FALSE

6. An instance of ‘child eye contact’ should be counted when it is hard to tell if the child is looking at the therapist or an object or activity.
   
   TRUE                       FALSE
BEHAVIORAL DEFINITIONS QUIZ: ‘descriptive praise’

Instructions: Please read the statement about ‘descriptive praise’ and circle true if you believe the statement is accurate and circle false if you believe the statement is inaccurate.

1. ‘descriptive praise requires a statement of approval always followed by a statement that specifies behavior.
   
   TRUE       FALSE

2. An instance of ‘descriptive praise’ ends when the therapist says another specifying statement of approval for the same instance of child behavior.
   
   TRUE       FALSE

3. To count as ‘descriptive praise’ the specifying statement of approval must be delivered within 3 seconds of the child’s behavior being specified.
   
   TRUE       FALSE

4. An instance of ‘descriptive praise’ ends when the therapist changes the topic.
   
   TRUE       FALSE

5. ‘descriptive praise’ requires a statement of approval and a statement that specifies behavior.
   
   TRUE       FALSE

6. To count as ‘descriptive praise’ the specifying statement of approval must be delivered within 5 seconds of the child’s behavior being specified.
   
   TRUE       FALSE
BEHAVIORAL DEFINITIONS QUIZ: ‘creating a learning opportunity’

Instructions: Please read the statement about ‘creating a learning opportunity’ and circle true if you believe the statement is accurate and circle false if you believe the statement is inaccurate.

1. ‘creating a learning opportunity’ is defined as the therapist presenting an item or activity to which the child may respond.
   
   TRUE                       FALSE

2. Do not count instances of ‘creating a learning opportunity’ where the therapist presents the object by moving it to another location within reach of the child or pauses so the child can respond.

   TRUE                       FALSE

3. ‘creating a learning opportunity’ ends either when the item or activity is removed or the child responds.

   TRUE                       FALSE

4. ‘creating a learning opportunity’ is defined as the therapist presenting an item or activity to which the child must respond.

   TRUE                       FALSE

5. ‘creating a learning opportunity’ ends only if the child responds.

   TRUE                       FALSE

6. Count instances of ‘creating a learning opportunity’ where the therapist presents the object by moving it to another location within reach of the child or pauses so the child can respond.

   TRUE                       FALSE
Date: ________________        Observer: ____________________________

Scoring Instructions: Each time you see an instance of the behavior mark a tally in the box.

<table>
<thead>
<tr>
<th>BEHAVIOR: ______________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session #: ______ Condition #: ______ Start Time: ______ Stop Time: ______ Total Session Length: ______</td>
</tr>
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</tbody>
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<td>Session #: ______ Condition #: ______ Start Time: ______ Stop Time: ______ Total Session Length: ______</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D
INTAKE QUESTIONNAIRE
PARTICIPANT OBSERVER INTAKE QUESTIONNAIRE

Participant Observer #: _______________________________ Date: __________________

Have you ever collected data from direct observation?

Circle one: YES NO

IF YES...

Where [in class, at a job, etc.] have you collected data?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

How long have you been collecting data and at what amount per week/month?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What behaviors have you previously collected data on?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What behavioral dimension(s) [frequency, duration, magnitude, etc.] have you collected data on?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What method(s) [interval, partial interval, momentary time sampling, etc.] have you used to collect data?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
APPENDIX E
PROCEDURAL FIDELITY CHECKLIST
PROCEDURAL CHECKLIST

ROOM
- Fluorescent lights off
- Dimmer & lamp on
- Blinds drawn
- Sign in sheet ready?
- Help log ready
- Data sheet & pencils prepared

COMPUTER
- Computer on & functioning properly
- All PPTs open & functioning properly
- All video files open & operational in PPTS
- Rest of desktop clear & unnecessary applications closed

OBSERVER INTERACTIONS: PRE-SESSION
- Ask participant to turn cell phone off & place under desk with rest of their belongings
- Ask participant to sign in on sign in log
- Ask participant if they have any questions
- Ask participant to sit down and get comfortable and begin PPT when ever they are ready

OBSERVER INTERACTIONS: POST-SESSION
- Ask participant to sign the bottom of their data sheet & hand it in
- Ask participant if they have any questions
- Review scheduling: Confirm date and time of next session
- Ask participant to sign out on sign out sheet
- Dismiss observer & allow them to obtain their belongings
REFERENCES


