

Using Video Modeling with Voice-over Instruction to Train Public School Staff to Implement a Preference Assessment

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Abstract The identification of putative reinforcers is a critical component of programming for individuals with disabilities. A multiple stimulus without replacement preference assessment is one option for identifying putative reinforcers; however, staff must be trained on the steps necessary to conduct the assessment for it to be useful in practice. This study examined the effectiveness of using video modeling with voice-over instruction (VMVO) to train two public school staff to conduct this assessment. Results demonstrate that VMVO was effective in training, producing generalized responding, maintenance, and high social validity ratings.

This article is based on a thesis submitted by the first author, under the supervision of the second author, at Caldwell University in partial fulfillment for the requirements of the Master of Arts in Applied Behavior Analysis.

Implications for practice:

1. Video modeling with voiceover instruction (VMVO) trained public school staff to implement a multiple-stimulus without replacement preference assessment in two sessions.
2. Training consisting of VMVO and a simulated consumer lead to generalized responding to an actual consumer.
3. The VMVO training produced staff trainee integrity that remained high up to 8 weeks after training.
4. The public school staff provided highly favorable ratings of the VMVO training.

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The majority of previous studies that have trained staff to conduct stimulus preference assessments (SPAs) used approaches that required the presence of another individual to deliver them (e.g., Lerman, Vorndran, Addison, & Contrucci Kuhn, 2004; Lerman, Tetreault, Hovanetz, Strobel, & Garro, 2008). However, there has been a recent interest in evaluating training procedures that reduce the need to have a staff trainer present for all aspects of training. One procedure, video modeling (VM), involves showing a video demonstrating a skill or target behavior with the expectation that the viewers will imitate the demonstrated behavior, and does not require the presence of a staff trainer while staff trainees view videos. Voice-over instruction is often included to increase the saliency of certain aspects of the video, and several recent studies have evaluated the use of VM with voiceover (VMVO) to train staff to implement SPAs (e.g., Deliperi, Vladescu, Reeve, Reeve, & DeBar, 2015; Lipschultz, Vladescu, Reeve, Reeve, & Dipsey, 2015). These studies were conducted in centers or clinics for individuals with autism spectrum disorder (ASD). As such, the feasibility and acceptability of VMVO within a public school setting is unclear. Staff working in public school settings, compared with counterparts working in centers or clinics for individuals with ASD, may face additional contingencies and operate in an environment that places less emphasis on techniques based on the principles of behavior. These potential variables make the evaluation of training procedures in the public school setting important.

Therefore, the purposes of the current study were to (a) evaluate the effectiveness of VMVO to train two public school staff to correctly implement a multiple-stimulus without replacement (MSWO) SPA with a simulated consumer, (b)

assess if staff trainee responding generalized to actual consumers and across stimuli, (c) determine if these skills maintain up to 8 weeks after training, and (d) assess social validity data to determine if this training method is viewed favorably by staff trainees.

Method

Participants

Peter and Molly served as staff trainees. Both were employees of a public elementary school and had no known experience with SPAs. Peter, a 48-year-old male, was the Vice Principal of the school. Peter had no experience working with individuals with ASD, but indicated a desire to begin working directly with these students. Molly, a 42-year-old female, was a paraprofessional in a classroom serving students with ASD, and had 1-year experience working with students with ASD.

The first author served as the simulated consumer during the baseline, training, and maintenance sessions. During generalization sessions, two male students verified to receive special education services under the autism category served as the actual consumers. Child 1 was 6 years old and child 2 was 8 years old. Both children were selected to participate because of their educational verification, availability, and because their teachers felt they would benefit from a SPA.

Setting and Materials

Sessions took place in a conference room in a suburban public school. The room contained a table, chairs, and materials needed to conduct the sessions. Eight toys (a teddy bear, ball, Play-Doh™, Barbie™, car, puppet, Magna Doodle™, and robot) were present during sessions with the simulated consumer. The eight toys used during generalization sessions were selected based on a survey completed by the actual consumers' caregivers (item names are available from the second author). Separate laptop computers were used to record sessions and to show the training video.

Preference Assessment for Simulated and Actual Consumers

MSWO Assessment The task analysis for the MSWO preference assessment was similar to the procedures described by DeLeon and Iwata (1996). First, the staff trainee was to place all eight items in a horizontal array in front of the consumer with each item spaced about 5 cm apart, instruct the consumer to select an item (e.g., “pick one”), and provide the consumer 10 s to make a selection. If the consumer selected an item, the staff trainee provided 30 s of access to the selected item, recorded the consumer's response on the data sheet provided,

and rotated the remaining items by taking the item on the far left and moving it to the far right (or vice versa) and re-spacing the items. After 30 s, the selected item was removed and placed out of view. If the consumer did not select an item within 10 s of the instruction, the staff trainee was to rotate the items and re-present the direction. If the consumer did not make a selection on the second presentation or when only one item remained, the assessment was terminated. If the consumer made an attempt to select more than one item (simultaneously or consecutively), the staff trainee blocked the response and represented the trial. This sequence was repeated until all items had been selected or until the consumer did not make a selection. Following the assessment, the staff trainee was to calculate selection percentage for each item, list these items in rank-order, and use the results of those calculations to select an item they would use during subsequent teaching sessions.

Simulated Data To ensure all staff trainees had the opportunity to calculate results (in situations where they might not have collected data, e.g., during baseline) and ensure exposure to various completed data sheets, three different calculation sheets were used depicting the results of three mock MSWO sessions (available from second author). One data sheet consisted of results that showed each item being selected in the same order across administrations. The second data sheet contained results in which items were chosen in random order across administrations. The third data sheet contained data from sessions that were terminated early due to no selection being made. The staff trainees were given one of these three possible completed data sheets in random order during the first three sessions to ensure exposure to all data sheets. After that, the data sheets were chosen by random selection.

Assessment Scripts for Simulated Consumers During each session, the simulated consumer engaged in typical responses during four trials and atypical responses during four trials. Typical responses consisted of selecting an item within 10 s of the instruction being given. Atypical responses consisted of selecting more than one item simultaneously, selecting more than one item consecutively, not selecting an item within 10 s of the instruction being given, and not selecting an item at all. The typical and atypical responses were randomly assigned to occur across trials during each session. In addition, the simulated consumer also exhibited inappropriate behavior (e.g., saying “no” when the staff trainee attempted to remove the item, engaging in stereotypy and inappropriate toy play) during four randomly assigned typical and atypical trials.

Design, Measurement, and Interobserver Agreement

We used a concurrent multiple baseline across participants design. The dependent variable was the percentage of

opportunities implemented correctly by the staff trainees on the 13-step task analysis (list of steps and definitions are available from the second author). The percentage was calculated for each session by dividing the number of correct responses by the number of total opportunities to engage in a correct response and multiplying by 100. All sessions were scored from video. One to two sessions were conducted per day, 1 to 5 days per week.

A second observer scored 100 % of sessions for each staff trainee. During each trial of a session, we scored if data collectors agreed or disagreed about the implementation of each step of the MSWO. Trial-by-trial interobserver agreement (IOA) was calculated by dividing the total number of agreements by the total number of agreements plus disagreements and multiplying by 100. The mean interobserver agreement scores were 100 % for Peter and 98 % (range 92 to 100 %) for Molly.

Procedure

Baseline During baseline, the experimenter provided the staff trainees with a timer, pencil, bin containing eight toys, and a folder containing brief written instructions (a data sheet). Staff trainees were told, “Using the materials provided do your best to conduct an MSWO preference assessment.” If, at any time during the session, the staff trainee did not engage in a correct response for 1 min, the session was terminated. At the end of each session, staff trainees were handed a completed data sheet containing the simulated results of three mock MSWO sessions, a calculator, and the following instruction, “Using the materials provided, do your best to calculate the results and complete the data sheet.” Feedback was not given and questions were not answered during any part of the session. Separate single session probes were conducted to evaluate the staff trainees’ performance in conducting an MSWO with an actual consumer using toys and edibles.

VMVO During VMVO, staff trainees viewed a video (17 min, 13 s) depicting each step necessary to conduct an MSWO assessment and the experimenter conducting a complete MSWO assessment with a simulated consumer. The first part of the video was filmed from a third person point-of-view and showed the experimenter modeling each MSWO component. Voiceover instruction was added to provide a detailed description of each MSWO step (script is available from second author). The video then demonstrated an experimenter running a full MSWO session of eight trials with a simulated consumer. No voice-over instruction was used in this portion of the video. The simulated consumer engaged in atypical responses during four trials, typical responses during four trials, and problem behaviors (e.g., stereotypy). The second part of the video, filmed from first person point-of-view with voice-over instruction, portrayed an instructor demonstrating

each step necessary to calculate a selection percentage for each item, create a rank-order list of the items, and select an item to be used during subsequent teaching.

Within 1 min of viewing the video, staff trainees were given the materials necessary to conduct an MSWO assessment and given the instruction, “Using the materials provided do your best to conduct an MSWO preference assessment.” Following the session, staff trainees were given a calculation sheet depicting the results of three mock MSWO sessions with simulated data and a calculator and given the instruction, “Using the materials provided, do your best to calculate the results and complete the data sheet.” VMVO continued until the staff trainees achieved 90 % correct responding for two consecutive sessions. Feedback was not provided.

Generalization and Follow-up Following mastery, single session probes were conducted with an actual consumer using procedures identical to baseline. Staff trainees did not have access to the video, and feedback was not provided.

Follow-up consisted of single session probes with a simulated consumer and toys with procedures identical to baseline. These probes were conducted 4 and 8 weeks following mastery for Molly and Peter, respectively.

Social Validity

Following the completion of the study, staff trainees were given a modified Treatment Acceptability Rating Form-Revised (TARF-R; Reimers & Wacker, 1988) questionnaire that consisted of ten statements. Staff trainees were asked to rate these statements using a five-point Likert scale, with higher scores indicating higher levels of acceptability (e.g., 1 = Strongly Disagree; 5 = Strongly Agree).

Procedural Integrity

A trained observer scored procedural integrity (i.e., the experimenter presented the training video in its entirety, provided the staff trainees with all materials to conduct a session, provided no other training components prior to or following the staff trainee’s viewing of the video) from video for 100 % of VMVO sessions for each staff trainee. The total number of implemented steps was divided by the total number of steps and multiplied by 100 to achieve a percentage. Mean procedural integrity was 100 % for both Peter and Molly.

Results

Figure 1 depicts the percentage of opportunities implemented correctly by staff trainees while implementing the MSWO SPA. During baseline, Peter and Molly demonstrated performance below the mastery criterion during all sessions.

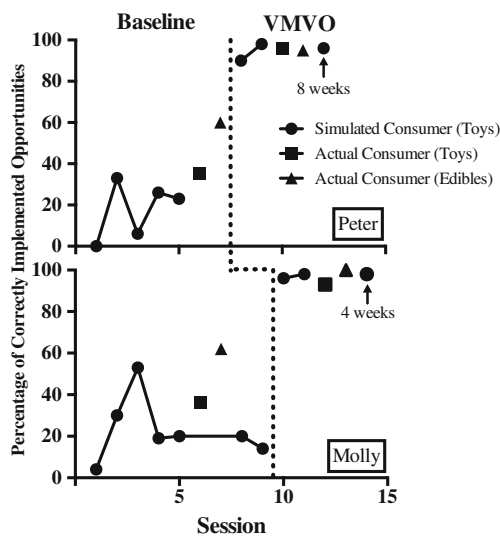


Fig. 1 Percentage of opportunities implemented correctly by the staff trainees during baseline, VMVO, and maintenance

Following the introduction of VMVO, Peter and Molly met the mastery criterion in two training sessions. Both staff trainees also demonstrated performance levels close to 100 % during post-training generalization probes with an actual consumer using both toys and edibles. Both staff trainees demonstrated mastery-level responding during follow-up sessions.

On the TARF-R, the staff trainees indicated that they were satisfied with the training ($M = 5$), that they enjoyed training using VMVO ($M = 5$), and would recommend using VMVO for future training ($M = 5$). They also indicated that they felt they could accurately conduct an MSWO preference assessment after VMVO training ($M = 4.5$, range 4–5), and that they believe VMVO is an effective way to learn a new skill ($M = 4.5$, range 4–5).

Discussion

The current study trained two public school staff to conduct an MSWO preference assessment with a simulated consumer and calculate the results of three mock sessions using VMVO. In addition, the staff trainees demonstrated generalized responding to sessions with actual consumers, their performance maintained up to 8 weeks, and they provided favorable TARF-R ratings.

We did not provide performance-based feedback, but staff trainees were required to watch the training video multiple times. This procedural element in and of itself may have functioned as feedback, and resulted in the staff trainees comparing their performance to the video. As an alternative, it may be worth evaluating the usefulness of arranging VMVO as a prelude to performance-based feedback similar to Giannakakos, Vladescu, Kisamore, and Reeve (2016).

We conducted sessions with simulated consumers to expose the staff trainees to typical and a variety of atypical responses

they may encounter when administering the MSWO preference assessment. Although the staff trainees successfully demonstrated generalized responding to actual consumers involving sessions with novel stimuli (i.e., toys and edibles), we only collected single pre- and post-VMVO generalization probes. The staff trainees' baseline performance during these probes was noticeably higher than their performance with the simulated consumer. This pattern of responding was likely observed because the actual consumers did not engage in atypical responses, as did the simulated consumer. Future studies should conduct additional sessions with actual consumers to capture the exact nature of staff trainee performance under this context.

The inclusion of two staff trainees and the staggering of two data points across these individuals weaken the demonstration of experimental control. Future studies could include additional trainees and collect additional data to better capture patterns of performance following the introduction of VMVO. Although we included three types of simulated data to ensure all trainees had the opportunity to calculate results and expose them to several examples of consumer responding, more complex patterns of responding that may be observed in practice (e.g., position biased responding) were not included and should be in future evaluations.

Future research should determine if the presence of the experimenter exerts control on the viewer's attention to training videos. If experimenters are not present during the viewing, attention to the video and the effectiveness of this approach may be reduced. Future studies should also evaluate the relative effectiveness of training approaches. For example, the creation of a self-instruction package (e.g., Graff & Karsten, 2012) may be less effortful than creating training videos. Studies could compare these training approaches to determine relative efficiency and acceptability.

Compliance with Ethical Standards

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Conflict of Interest All authors declare they have no conflict of interest.

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