Use and Implementation of Preference Assessments by Special Educators

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Abstract

Stimulus preference assessments are used to identify preferred stimuli that can be utilized to increase responding (DeLeon & Iwata, 1996) and may be important in special education settings. Researchers have extensively evaluated preference assessments (e.g., Fisher et al., 1992; Graff & Ciccone, 2002; Graff & Karsten, 2012a) and trained various professionals in preference assessment methodology (e.g., Higgins et al., 2017; Lavie & Sturmey, 2002; Pence et al., 2012); however, preference assessments appear to be uncommon in special education (Graff & Karsten, 2012b). Additionally, there is limited research training special educators to collect and analyze preference assessment data and implement the results in a subsequent teaching session. The purposes of this study were to identify current preference assessment practices of special educators and to evaluate the effects of remote BST on training special educators to conduct an MSWO, collect and analyze the data, and implement the results in brief teaching sessions. Our results suggest few special educators implement preference assessments and remote BST was effective for all three special educators in acquiring MSWO skills.

Keywords: remote training, behavioral skills training, multiple stimulus without replacement, special educators

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Table of Contents

List of Figures

List of Tables

Use and Implementation of Preference Assessments by Special Educators

Reinforcement is a basic behavioral principle that is often used to address a variety of socially significant issues as reinforcement increases the future probability of behavior (Skinner, 1938). Reinforcement is often used to increase skill acquisition and alternative behaviors to reduce problem behaviors (e.g., Carr & Durand, 1985; Tiger et al., 2008; Zarcone et al., 1993). Behavior analysts have used reinforcement to address a variety of socially significant behaviors including language and communication skills (e.g., Bourret et al., 2004), social skills (e.g., Krantz & McClannahan, 1998), community safety skills (e.g., Page et al., 1976), and vocational skills (e.g., Lattimore et al., 2006). Additionally, reinforcement has been used in the assessment and treatment of a variety of problem behaviors such as aggression (e.g., Iwata et al., 1982/1994), self-injury (e.g., DeLeon et al., 2001), stereotypy (e.g., Ahearn et al., 2007), and property destruction (e.g., Fisher et al., 1998). Reinforcement for both skill acquisition and behavior reduction require the identification of a reinforcer, which is a stimulus delivered contingent on a target response to increase the likelihood of the target behavior occurring again in the future (Ferster & Parrott, 1968).

The identification of a reinforcer is often a two-step process. First, clinicians conduct preference assessments (Wacker et al., 1985). Preference assessments are observation or trial-based evaluations used by practitioners to identify preferred stimuli (e.g., Chazin & Ledford, 2016). These assessments objectively assess the preference of stimuli such as social interactions (e.g., Morris & Vollmer, 2019), tangible items (e.g., DeLeon & Iwata, 1996), edible items (e.g., Fisher et al., 1992), and preferred treatments (e.g., Hanley et al., 2005). A variety of preference assessment methods have been developed and researched within behavior analysis including the paired stimulus (PS; Fisher et al., 1992), multiple stimulus with (MSW; Chazin &

Ledford, 2016) and without replacement (MSWO; DeLeon & Iwata, 1996), single stimulus (SS; Pace et al., 1985), and free operant (FO; Roane et al., 1998) preference assessments. Each preference assessment has strengths and weaknesses (Roane et al., 1998). For example, an MSWO is an efficient assessment which produces a hierarchy of preferred items but is not ideal for individuals who engage in problem behavior following the removal of a stimulus as removal of a stimulus may evoke problem behavior (Kang et al., 2010; O'Reilly et al., 2017; Tung et al., 2017). The results from preference assessments provide general information related to learner preference (i.e., FO, SS, and MSW) or generate a hierarchy of preferred stimuli (i.e., PS and MSWO).

Second, to validate a preferred stimulus serves as a reinforcer, clinicians should conduct a reinforcer assessment (Mason et al., 1989; Paclawsky & Vollmer, 1995). There are several ways to conduct reinforcer assessments in which stimuli are presented in isolation or simultaneously based on different reinforcement schedules (i.e., concurrent, multiple, progressive ratio) to determine whether responding increases. To access the stimulus, an individual engages in a response such as a microswitch (Ivancic & Bailey, 1996) or simple request (Pace et al, 1985). Progressive-ratio schedule reinforcer assessments can also evaluate whether stimuli continue to function as reinforcers at different work requirements (e.g., the learner would first complete one card touch, then two card touches, then four card touches, and so forth; DeLeon et al., 1997). Thus, reinforcer assessments evaluate whether a stimulus will function as a reinforcer by directly evaluating the effects of contingent stimulus delivery on subsequent patterns of responding (Ivancic, 2000).

While both preference and reinforcer assessments aim to identify stimuli that can be programmed to increase behavior, a preference assessment identifies preference of stimuli,

whereas a reinforcer assessment determines if stimuli function as reinforcers to increase appropriate responding. Although reinforcer assessments validate a stimulus functions as a reinforcer, it is unclear how often reinforcer assessments are used within clinical settings or schools. That is, reinforcer assessments involve direct systematic evaluations repeated across sessions to validate a stimulus functions as a reinforcer (Ivancic, 2000), which may be time consuming in clinical settings such as schools in which there are numerous competing contingencies. Several studies have demonstrated that high-preferred stimuli identified via preference assessments often function as reinforcers (Fisher, 1992; Pace et al., 1985; Rush et al., 2005) and some high-preferred stimuli continue to function as reinforcers under larger work requirements (Roscoe et al., 1999). Given the likely infrequent use of reinforcer assessments and that high-preferred stimuli often function as reinforcers, it is important that researchers identify the most effective way to train educators to identify high-preferred stimuli using formal preference assessments such that effective stimuli are identified for skill acquisition and behavior reduction programming.

Preference assessments have been evaluated extensively within the behavior analytic research (e.g., Fisher et al., 1992; Graff & Ciccone, 2002; Graff & Karsten, 2012a). Additionally, researchers have trained various professionals to conduct preference assessments such as direct support staff (e.g., Higgins et al., 2017), educators (e.g., Higgins et al., 2017; Lavie & Sturmey, 2002; Pence et al., 2012), and behavior technicians (e.g., Roscoe & Fisher, 2008), suggesting a wide variety of professionals can be trained to conduct preference assessments. For example, Lavie and Sturmey (2002) used behavioral skills training (BST) to train three paraeducators to conduct PS preference assessments with children with autism. The training package included instructions, a video model, rehearsal, and feedback. BST sessions ended when the paraeducators

could conduct the PS preference assessment at 85% accuracy for two consecutive sessions. All participants met mastery criteria within 80 min, demonstrating BST could be used to train paraeducators efficiently. Similarly, Lerman et al. (2008) used group BST to train 18 special educators to conduct PS and MSWO preference assessments during a 5-day in-service training. Their training package included lecture-style instruction, video modeling, role-play, and specific feedback. Following training, all participants gained the skills necessary to complete the preference assessments and maintained the skills 4 weeks later in follow-up. Both Lavie and Sturmey and Lerman et al. demonstrated that special educators with various backgrounds can be trained to effectively conduct preference assessments.

Although researchers have demonstrated special educators are able to implement preference assessments, it is unclear the extent to which they are currently implemented in practice. Graff and Karsten (2012b) surveyed 406 professionals within behavior analysis, psychology, and special education to determine the use of preference assessments across disciplines. The survey results suggested 97% of behavior analysts were familiar with preference assessments either through their coursework or in-service training compared to 73% of psychologists and 48% of special educators. Of the 48% of special educators who had training experience with preference assessments, 50% indicated they received the training as part of their coursework, and 50% indicated they received training during an in-service training day through their district. Additionally, survey results suggested that 17% of special educators conduct preference assessments at least one per month, 30% conduct preference assessments less than once a month, and 53% never conduct preference assessments. Overall, survey results suggest that staff in other disciplines, such as special education, have little training and knowledge of

preference assessments and are less likely to use preference assessments to identify high-preferred stimuli to program as reinforcers.

The use of preference assessments may be particularly useful within special education as they are an efficient and systematic method to objectively assess preference (Chazin & Ledford, 2016). The results of preference assessments can then be used to increase appropriate behaviors (e.g., Canella et al., 2005) and decrease problem behavior (e.g., DeLeon & Iwata, 1996). If a stimulus functions as a reinforcer for a student, the student should allocate more responding to target behaviors that will gain access to the reinforcer such as on-task behavior (e.g., Canella et al., 2005; Jones et al., 2014; Karsten & Carr, 2009; Wallace et al., 2006). Additionally, several preference assessments generate a hierarchy of stimuli. Having several high-preferred stimuli that can be used during programming is important as students' preferences can change across time (Fisher et al., 1992). Thus, it is possible that providing students with a variety of high-preferred items will likely increase a student's appropriate classroom behavior, decrease problem behavior, and increase their willingness to participate in classroom activities (Canella et al., 2005; DeLeon & Iwata, 1996).

Given the limited number of special educators familiar with preferences assessments and the infrequency of their use (Graff & Karsten, 2012b), it is unclear how special educators identify preferred stimuli. It is possible that educators rely on unstructured methods to assess preference (Emery et al., 2013). Unstructured preference assessments determine preference indirectly (e.g., questionnaires and verbal testimonials) and have been demonstrated to identify stimuli that are not reinforcing (Fisher et al., 1992; Jones et al., 2014; Karsten & Carr, 2009; Wallace et al., 2006) and stimuli that may not correspond to a student's actual preference (Northrup, 2000). Additionally, stimuli identified for programming may be based on proximity,

convenience, or what is socially appropriate (Emery et al., 2013) rather than stimuli that are high preferred or those that function as reinforcers. Thus, the use of more structured, direct preference assessments (e.g., MSWO, PS) may be beneficial within special education settings as direct preference assessments are more likely to identify stimuli that will function as reinforcers (Cannella et al., 2013).

One preference assessment that may be beneficial within special education is an MSWO (DeLeon & Iwata, 1996). During an MSWO, stimuli (e.g., five to seven items) are presented in an array to the student. The student is asked to select one or to pick their favorite. Following stimulus selection, the student is given access to the selected stimulus for a brief time. Following access, the selected stimulus is removed and then the array is presented again without the selected stimulus. This continues until all stimuli have been selected or no choice is made. The MSWO might be beneficial in special education as it generates a hierarchy of preferred stimuli (Chazin & Ledford, 2016). MSWOs are also efficient preference assessments in that they take very little time conduct, meaning the MSWO can be conducted frequently to assess a learner's preference shifts and special educators can use the results across a variety of educational environments (Hanley et al., 2011).

Although researchers have evaluated training special educators, there are notable gaps in the current behavior analytic literature base regarding training special educators to conduct preference assessments, which may affect long-term implementation of preference assessments. First, there is limited literature evaluating the generalization of preference assessment implementation to students in the natural environment, so it is unclear whether the results obtained would also occur in the presence of students (Leman et al., 2008; Roscoe & Fisher, 2008). Second, it is unclear whether training has been developed for special educators around

translating preference assessment results into practice. That is, typically special educators are trained to implement the methods of a specific preference assessment (e.g., Higgins et al., 2017; Lavie & Sturmey, 2002; Roscoe & Fisher, 2007), which is an important skill. However, for preference assessments to be fully adopted within special education settings, individuals must know how to collect data and use those results in their programming. Thus, trainings focusing on preference assessments with special educators should focus on conducting a preference assessment, collecting data, analyzing the results, and using the results such that special educators can use and implement the results of preference assessments within their classrooms. Given the importance of preference assessments within special education, the purposes of this study were to identify current preference assessment practices of special educators and to evaluate the effects of remote BST on training special educators to conduct an MSWO, collect and analyze the data, and implement the results in brief teaching sessions.

Study 1

The purpose of Study 1 was to identify current preference assessment practices within special education, common methods used to identify preferred stimuli, and the frequency with which preference is assessed within special education.

Method

Participants

Special education teachers and paraprofessionals participated in Study 1. Participants accessed the survey through an advertisement posted by the researcher in Facebook groups (e.g., SPED Google Classroom, Self-Contained SpEd, Autism Teachers Unite). We received 123 responses. Thirty-five responses were incomplete. Therefore, we included and analyzed the data for 88 responses.

Survey Instrument and Procedures

We developed a 23-question survey in Qualtrics to identify motivational and behavioral struggles in the classroom, strategies commonly used to address motivational and behavioral struggles, and use of preference assessments (Appendix A). The survey included questions on (a) demographics (i.e., current role within special education, student demographics, grades taught, behavior analytic coursework, and behavior analytic certification), (b) motivational strategies (i.e., motivational issues, behavioral issues, and strategies used to increase motivation and decrease problem behavior), (c) preference assessments (i.e., use of preference assessments, frequency of preference assessment use, individual vs. group preference, type of preference assessments, use of student preference in guiding classroom instruction, and contingent reinforcement), and (d) research interest (i.e., whether the special educator would be interested in learning more about preference assessments or participating in a research study, and had access to a personal computer with video and audio capabilities). The final question was a blank space where respondents could leave their email if they were interested in participating in a research study.

The survey was posted to 21 Facebook groups between April 7, 2021 and May 25, 2021 such that the survey was publicly available to all group members. Given the nature of Facebook groups, it is unknown how many times the survey was shared or the number of individuals who contacted the survey post. The survey closed on May 25, 2021, and the last response was received on May 24, 2021. The survey was open for 49 days.

Results

Table 1 depicts the demographics of special educators. Seventy-four (84.1%) respondents were special educators, nine (10.2%) were paraprofessionals, and five (5.7%) indicated they had

been special educators in the past but were currently in different roles within special education (e.g., school psychologist, special education coordinator). Thirty-two (36.4%) respondents taught Pre-Kindergarten, 49 (55.7%) taught grades K-5, 23 (26.1%) taught grades 6-8, 23 (26.1%) taught grades 9-12, six (6.8%) taught transitional programs for ages 18-21. Given the nature of special education, many respondents taught more than one age group, thus percentages add to more than 100%. Eighty-eight (100%) respondents taught students with special needs (e.g., autism spectrum disorder, Down Syndrome, cerebral palsy, fetal alcohol syndrome). Forty-nine (55.7%) respondents indicated they had taken coursework in behavior analysis. Coursework included introduction to behavior analysis, principles of behavior analysis, conceptual foundations of behavior analysis, ethics for behavior analysis, behavioral assessments and behavior change procedures, measurement and experimental design in behavior analysis, organizational behavior management, and experimental analysis of behavior. Five (5.7%) respondents indicated they were credentialed through the Behavior Analyst Certification Board. Two (2.3%) indicated they were Registered Behavior Technicians, and three (3.4%) indicated they were Board Certified Behavior Analysts.

Table 2 depicts the data for questions related to motivational strategies. Of the 88 respondents, 81 (92.0%) indicated they struggle or sometimes struggle with motivation in their classrooms, and 79 (89.8%) indicated they struggle with problem behavior. Forty-one (46.6%) respondents indicated they use fidget toys, 39 (44.3%) use brain breaks, and 39 (44.3%) use token economies, sticker charts 35 (39.8%), calm down zones 28 (31.8%), notes home 27 (30.7%), other 27 (30.7%), classroom economy 21 (23.9%), class meetings 17 (19.3%), Go Noodle 15 (17%), seat signals 14 (15.9%), Class Dojo 11 (12.5%), team table points 7 (8%), fill a jar 6 (6.8%), and call backs 5 (5.7%) to increase motivation. Sixty-seven (76.1%) respondents

indicated they use fidget toys, 67 (76.1%) use brain breaks, and 55 (62.5%) use calm down zones, token economies 37 (42%), sticker charts 33 (37.5%), notes home 33 (37.5%), other 33 (37.5%), Go Noodle 28 (31.8%), class meetings 20 (22.7%), seat signals 13 (14.8%), Class Dojo 8 (9.1%), fill a jar 7 (8%), call backs 6 (6.8%), and team table points 4 (4.5%) to decrease problem behavior.

Table 3 depicts use of preference assessments. Of the 88 respondents, 48 (54.5%) respondents indicated they have implemented some type of preference assessment in their classroom, 83 (94.3%) indicated student preference guides their instruction, and 65 (73.9%) indicated they use contingent reinforcement in their classrooms. Twenty (22.7%) respondents reported using indirect preference assessments (e.g., rating form, questionnaire), and 69 (78.4%) reported asking the individual or the individual's parents. Nine (10.2%) respondents reported conducting a PS, seven (8%) an MSWO, nine (10.2%) an MSW, 15 (17%) an FO, and four (4.5%) an SS. Three respondents reported other preference assessments including social observations, "would you rather games," and the Reinforcer Assessment for Individuals with Severe Disabilities (Fisher et al., 1996). Given educators can use more than one method to assess student preference, percentages add to more than 100. Of the 48 respondents who indicated they have implemented a preference assessment, three (6.3%) indicated they assess preference daily, three (6.3%) weekly, seven (14.6%) monthly, 21 (43.8%) yearly, and 14 (29.2%) as needed. Thirty-six (75%) respondents indicated they assess individual preference, two (4.2%) indicated they assess group preference, and 10 (20.8%) indicated they asses both individual and group preference.

Discussion

The purpose of the survey was to gain some additional insight into the use of preference assessments by special educators. Overall, our data suggest the majority of special educators struggle with motivation and problem behavior (e.g., disruptions, aggression, self-injury, property destruction) in the classroom. Additionally, few special educators implement preference assessments. Of the special educators who had conducted preference assessments, indirect methods (e.g., interviews, asking the individual) were most commonly used.

Although 65 (73.9%) special educators noted they use contingent reinforcement in their classroom, the most common strategies used to increase motivation and decrease problem behavior were fidget toys, token economies, brain breaks, and calm down zones. It is unclear from our survey results how these strategies are used. Thus, it is difficult to say whether these strategies align with best practices for increasing appropriate behavior and decreasing problem behavior such as providing noncontingent access or access to preferred items contingent on appropriate behavior and not problem behavior. For example, fidget toys are often used following a target behavior to decrease the behavior from escalating (Grogan, 2012). Therefore, it may be important to determine how these strategies are implemented to determine whether they have the intended effect (i.e., increasing motivation or decreasing problem behavior).

The majority of special educators indicated preference guides their instruction and they use contingent reinforcement; however, only 24 (27.3%) have conducted a direct preference assessment (i.e., FO, MSW, MSWO, PS, and SS) in their classroom. Given our results, it is unclear how preference guides instruction or how contingent reinforcement is used in classroom settings. Furthermore, the majority of special educators who had conducted a preference assessment used indirect methods. Researchers have demonstrated that both verbal testimonials

and surveys may provide limited predictive accuracy (King, 2016; Northrup, 2000). That is, learners may verbally identify stimuli as preferred, but those items may not function as a reinforcer and produce behavior change (i.e., false positive). Additionally, if surveys are used, learners may omit possible preferred items not listed on the surveys. Therefore, it is possible that items identified within special education settings are not functioning as reinforcers.

Graff and Karsten (2012b) suggested there may be a lack of formal training in special education on the use and benefits of preference assessments. Our data may support this assertion. That is, our data suggest that special educators still rely on indirect preference assessments to identify preferred stimuli. Additionally, when preference assessments are used, whether direct or indirect, they are conducted infrequently, which may not align with best practices given frequent shifts in preference (DeLeon et al., 2001). Interestingly, of the five respondents who were credentialed through the Behavior Analyst Certification Board, three (i.e., one Registered Behavior Technician and two Board Certified Behavior Analysts) indicated they use direct preference assessments such as the MSWO and FO preference assessments. Although the number of credentialed individuals is small within this current study, it makes sense that those credentialed would implement direct preference assessments as preference assessments are incorporated into education and requirements for becoming credentialed through the Behavior Analyst Certification Board (Behavior Analyst Certification Board, 2017); however, it would be interesting to determine whether this finding is consistent across other special educators who are also credentialed through the Behavior Analyst Certification Board as not all conducted preference assessments. Overall, our survey data may suggest the need for more directed training on the use of direct preference assessments and their benefits within special education.

Study 2

The purpose of Study 2 was to evaluate the effects of remote BST on training special educators to conduct an MSWO, collect and analyze the data, and implement the results in brief teaching sessions.

Method

Participants

Three special educators participated in the current study and were recruited through the Qualtrics survey conducted in Study 1. The experimenter reviewed all survey responses and considered all respondents who indicated they would be interested in participating in a research study and included their contact information for inclusion in the study. Specifically, respondents were required to have (a) limited experience conducting preference assessments and (b) access to a personal computer with internet, video, and audio capabilities. Respondents who had previously conducted an MSWO and those who did not have access to a computer with internet, video, and audio capabilities were excluded from the study.

Carrol was a special education teacher who taught elementary- and middle-school students and had no experience with preference assessments. Molly was a special education teacher who taught elementary-school students and had limited experience with preference assessments. Molly had not seen or conducted a preference assessment; however, she was enrolled in an introductory course in behavior analysis at the time of the study. Racheal was a special education teacher who taught middle-school students and had no experience with preference assessments.

Trained graduate students from the Department of Applied Behavioral Science at the University of Kansas served as confederates and played the role of the learner during sessions.

Confederates used a detailed script and engaged in behaviors outlined in the script during the MSWO (e.g., selecting one item, refusing to select an item, swiping items) and teaching sessions (e.g., complying with instruction, not complying with instruction, completing instruction incorrectly). Participants were aware of the confederate's role and responded during session based on behavior in which the confederate engaged to simulate a remote preference assessment.

Setting and Materials

Sessions were conducted via Zoom, a web-based video conferencing software that allows for real-time communication, one to two times per day, two to four days a week. The participant, experimenter, and confederate were in separate locations during Zoom meetings and joined via a link, which the experimenter provided to all participants and confederates prior to the meeting. To protect the privacy of all parties and increase security of meetings, a unique meeting password was required to join the meetings. Session length varied based on condition. All sessions were recorded, and videos were uploaded to a Health Insurance Portability and Accountability (HIPAA)-compliant network to allow for post-session data collection and analyses.

Participant materials included brief written instructions on how to conduct, analyze, and implement the results of an MSWO (Appendix B); an MSWO data sheet (Appendix C); and two sets of five toy items (Molly and Racheal) or common household items (Carrol). The MSWO written instructions and data sheets were developed based on clinical protocols and research from the behavior-analytic literature (e.g., DeLeon & Iwata, 1996). Prior to the start of the study, the experimenter mailed the instructions, data sheets, and toy items to the participants.

Confederate materials included a matching set of toys (sent via mail) or common household items and 10 scripts outlining the behaviors in which to engage during the MSWO (see Appendix D for an example script) and teaching session (see Appendix E for an example script). Each MSWO script was composed of two iterations of the MSWO (i.e., 10 trials), typical responses (i.e., choosing one item), and atypical responses (i.e., problem behavior, not choosing an item, or choosing two items). Atypical responses were programmed randomly across and within scripts during 40% of trials. Not selecting an item on the second presentation occurred during 40% of sessions to allow participants to experience ending the assessment when a confederate did not select an item on the second presentation. Each teaching session script was composed of 10 teaching trials. Five typical responses (i.e., complying with the task) and five atypical responses (e.g., not complying with the task or completing the task incorrectly) were programmed randomly across trials.

Dependent Variable, Measurement, and Interobserver Agreement

Trained data collectors recorded data for each step of each skill (i.e., implementing an MSWO, analyzing MSWO data, and implementation of MSWO results). The dependent variables were the number of correct and incorrect steps. A *correct step* was scored when the participant engaged in the step correctly within the specified time frame and order. An *incorrect step* was scored when the participant completed a step incorrectly within the specified time frame, performed a step out of order, or omitted a step. Following each session, the percentage of correct steps was calculated by dividing the number of correct steps by the number of total steps and multiplying by 100.

A second, independent observer collected data for 37% of sessions for Carrol, 33% for Molly, and 33% for Racheal. Interobserver agreement was calculated by dividing the total

number of agreements by the number of agreements plus disagreements and multiplying by 100. An *agreement* was defined as each observer scoring the same behavior on each skill (e.g., both observers scoring correct on the same step). Mean agreement was 98.1% (range, 91.7%-100%) for Carrol, 95% (range, 81%-100%) for Molly, and 99% (range, 95%-100%) for Racheal.

General Procedure

Prior to the start of all sessions, the experimenter selected a script and shared it with the confederate. Scripts were chosen in a quasi-random order using a number generator to ensure exposure to a variety of possible learner responses during sessions. The experimenter provided the participant with brief written instructions on how to conduct the MSWO, analyze the results, and implement the results of the MSWO during a teaching session. Participants were given 15 min to read the instructions immediately before each session. Following 15 min or the participant indicating readiness (e.g., “Ok, I’m ready.”), the session was started. At the end of each session, the experimenter thanked the participant for their time.

Baseline

Following access to the written instructions, the experimenter asked the participant to complete the MSWO, analyze the MSWO data, and program the results in a brief teaching session. Regardless of responding, no feedback was given to participants during or following implementation of the skill. Additionally, the experimenter did not answer questions regarding procedures but stated the participant should try their best.

Remote Behavioral Skills Training

The experimenter used remote BST to teach participants how to conduct an MSWO, analyze the data, and program the results into a brief teaching session. This training package included brief instructions, a pre-recorded video model of each skill, role play with a

confederate, and specific feedback. BST sessions ended when the participate could demonstrate the skill in the absence of corrective feedback. Specifically, BST was completed for conducting the MSWO and collecting data. Once the participant demonstrated conducting the MSWO and collecting data in the absence of corrective feedback, BST was completed for using the MSWO results during teaching trials. Once the participant demonstrated using the MSWO results in the absence of corrective feedback, the participant was asked to rehearse all three skills until they were able to perform the three skills in the absence of feedback.

Conducting an MSWO and Analyzing MSWO Data. Participants were taught to conduct an MSWO and collect data. During BST sessions, the experimenter played a video model which included (a) the rationale for conducting an MSWO and collecting data, (b) a model of the experimenter correctly implementing an MSWO and collecting data, and (c) written instructions as each step was demonstrated. Following the video, participants rehearsed conducting the MSWO and collecting data with a confederate. Following each rehearsal, specific feedback was given for each skill (e.g., "During the MSWO, you said "pick one" correctly, but next time do not say "good job" following an item selection. For data collection, you also did a nice job listing the correct stimuli; however, you wrote the rank from least preferred to most preferred. Next time write the rank order starting with the most preferred item.").

Programming MSWO Results. Participants were also taught how to program the MSWO results during a brief teaching session. During BST sessions, the experimenter played a video that included (a) the rationale for programming MSWO results, (b) a model of the experimenter correctly programming the results (i.e., using the top two preferred items in a brief preference assessment, delivering selected item contingent on correct responses, and withholding selected item contingent on incorrect responses), and (c) written instructions as each step was

demonstrated. Following the video, the participant rehearsed programming the MSWO results with the confederate. Specific feedback was delivered following each rehearsal (e.g., “Excellent job setting a clear contingency; however, you allowed access to the preferred item contingent on an incorrect response. Ensure the preferred item is only delivered following correct responses.”).

Post Training

Following remote BST, post-training sessions were conducted and were similar to baseline. Post-training sessions ended when the participant performed the MSWO at 90% correct across three consecutive sessions.

Remote Behavioral Skills Training Booster

If a participant’s percentage correct decreased to baseline levels during post-training sessions, a remote BST booster session was conducted. Remote BST booster sessions were similar to remote BST; however, they focused on the specific skill(s) the participant was not performing during post-training sessions rather than all skills.

Generalization

To determine whether taught skills occurred under more naturalistic contexts, generalization probes were conducted during baseline and following mastery. Sessions were similar to baseline; however, the participant implemented the MSWO with a novel confederate.

Social Validity

Each participant completed a 14-question social validity survey (see Appendix F) at the end of the study. The survey assessed the social validity of our training procedures and outcomes and asked participants to respond using a five-point Likert scale in which 1 represented strongly disagree and 5 represented strongly agree. Questions were similar to those used in

Strohmeier et al. (2014) and Higgins et al. (2017), and the survey was distributed using Qualtrics.

Experimental Design

A nonconcurrent multiple baseline design across participants was used to demonstrate experimental control. A nonconcurrent multiple baseline design is recommended in education settings because it allows for a higher degree of flexibility as compared to other designs (Harvey et al., 2004). Participants were exposed to the independent variable at delayed intervals to moderate threats to validity and to evaluate the effectiveness of BST on the correct implementation of an MSWO by special educators

Results

The results from Study 2 are depicted in Figure 1. Sessions are scaled to the x-axis, and percentage correct is scaled to the y-axis. Closed circles denote baseline and post-training sessions, and open circles denote generalization probes. The first panel depicts the data for Carrol, the second for Molly, and the third for Racheal. During baseline and the first generalization probe, Carrol engaged in a low level of percentage correct. Following remote BST, percentage correct immediately increased and maintained at a high level during post-training sessions and the second generalization probe. Carrol met mastery criteria within three post-training sessions. During baseline and the first generalization probe, Molly engaged in a low to moderate level of percentage correct. Following remote BST, percentage correct immediately increased to a high level during the first post-training session and generalization probe. During the second post-training session, percentage correct decreased to baseline levels. Following the remote BST booster session, percentage correct increased and maintained at a high level during post-training sessions. Molly met mastery criteria within five post-training sessions. Racheal

engaged in a moderate level of percentage correct during baseline and the first generalization probe. Following remote BST, percentage correct immediately increased to a high level during post-training sessions and the second generalization probe. Racheal met mastery criteria within three.

The results from the social validity questionnaire are depicted in Table 4. All participants reported training was easy to understand (4.3, range 4-5), it was easy to learn how to conduct an MSWO using this training (4, range 3-5), they felt prepared to conduct more preference assessments in the future (4.6, range 4-5), and were satisfied with the outcomes of the study (4.6, range 4-5). In addition, the participants noted the feedback they received was helpful (4.6, range 4-5), training was enjoyable (4.6, range 4-5), and they would recommend this training to others (4.6, range 4-5). Participants indicated they felt neutral as to whether online training was more preferred than in-person training (3, range 2-4) or easier than learning in person (3, range 2-4). Participants indicated they were neutral in their satisfaction with the web-based interactions (3, range 1-4) and camera set up during training (3.7, range 1-5).

Discussion

The purpose of Study 2 was to evaluate the effects of remote BST on training special educators to conduct an MSWO, collect and analyze the data, and implement the results in brief teaching sessions. Similar to other staff training studies (Lavie & Sturmey, 2002; Lerman et al., 2008; Higgins et al., 2017), our results suggest remote BST was immediately effective to train three special educators to conduct an MSWO. Additionally, our data suggest that special educators can be trained to effectively collect and analyze MSWO data and use the results in a subsequent teaching session. Finally, our results also suggest that three participants were able to generalize the skills learned to a novel confederate.

Remote BST was immediately effective for all three participants. It is likely remote BST was effective due to the competency-based nature of this training procedure (Reid, 2017). That is, the participant cannot complete training unless they meet the predetermined mastery criteria. Our predetermined mastery criteria involved three different steps. First, the participants were required to conduct an MSWO and collect and analyze data in the absence of feedback. Second, participants were required to implement the results of the MSWO in a brief teaching session. Finally, participants were required to conduct an MSWO, collect and analyze data, and implement the results in the absence of feedback. Thus, our three-prong approach to mastery criteria may have also ensured acquisition of the three skills. The predetermined mastery criteria ensures the participant can demonstrate the target skill at a high level before applying the skill to the natural environment, which increases the likelihood for generalization (Reid, 2017). Additionally, our remote BST included video modeling, rehearsal, and feedback. This combination of BST components may have allowed the participants to alter their behavior quickly through observation of an accurate video model, repeated practice, corrective feedback, and praise. This combination of BST components has been demonstrated to be effective across numerous skills and individuals (e.g., Bruzzi & Sturmey, 2010; Conkin & Wallace, 2019; Kirkpatrick et al., 2019; Lavie & Sturmey, 2002; Reid, 2017).

Although remote BST was immediately effective for all participants, one participant (Molly) required a remote BST booster session. During the session in which responding decreased, Molly continued to conduct the MSWO rather than ending the assessment following the confederate not selecting an item on two consecutive presentations. Therefore, a remote BST booster session was conducted in which the video model of ending the assessment was viewed, Molly rehearsed the skill with the confederate, and the experimenter provided feedback. The

remote BST booster session was immediately effective in increasing Molly's percentage correct to high levels, and she demonstrated ending an assessment following non-selection on two consecutive presentations during at least one post-training session. Interestingly, Molly had the most experience with preference assessments and required the least amount of training time during remote BST; however, a booster session was necessary. Thus, it may be important for researchers to establish a priori criteria for conducting booster sessions in future staff training studies.

Generalization occurred to a novel confederate for both participants. Generalization may have occurred due to the repeated practice during training, resulting in persistent responding. Additionally, generalization probes only had one variable change. That is, the generalization probes were conducted in the same environment on Zoom, with the same toy items, but with a novel confederate. Thus, it is possible that the stimuli that were programmed in all sessions may have evoked and facilitated responding (Spradlin & Simon, 2011). Given the nature of our generalization probes, it is unclear the extent to which these skills would generalize to an in-vivo session or a session with a student. Therefore, it will be important that generalization to the classroom setting is assessed as this is where this behavior should occur and maintain. Researchers might consider developing remote in-vivo measures to assess in-vivo generalization when in-vivo measures are not feasible.

Although not explicitly evaluated in the current study, training length also varied for each participant. Racheal required 120 minutes of remote BST before meeting mastery criteria, Molly required 85 minutes (including the time needed for remote BST booster session), and Carrol required 165 minutes. Molly also reported limited exposure to preference assessments and coursework with behavior analysis, so it is possible that she had a history with BST or preference

assessments that influenced the amount of training needed to acquire the skills. Carrol and Racheal both required additional training as compared to Molly. Racheal may have required more training due to their repeated prolonged exposure to instructions during. That is, Racheal was exposed to more baseline sessions and practiced more errors. Carrol noted she had hearing impairments and wore hearings aids. During remote BST, she asked for verbal instructions and feedback to be repeated, which may have contributed to her longer durations of remote BST when compared to Molly and Racheal. It would be interesting to evaluate how systematic changes in these training procedures would decrease time to mastery during remote BST.

Results from the social validity survey suggest that the remote training was effective, easy to understand, and easy to learn for the participants; however, it was not a preferred method of training. Given that remote trainings may become more common, it might be important to identify the elements of remote training that are nonpreferred and identify ways to increase the preferred elements of remote training. Thus, researchers could focus on surveying teachers to determine their preferred method of training, which may result in gaining additional buy and training modifications for remote training procedures.

Interestingly, 62 respondents from the Study 1 survey indicated they were or might be interested in participating in a research study on preference assessments, and 52 left their email such that a researcher could contact them; however, when contacted to determine further interest in participating in Study 2, five respondents indicated they were interested, seven said no, and 41 did not respond to the email. It is possible that the timing of the study was a barrier to participation. That is, we recruited participants towards the end of the school year (i.e., April and May), which may be a busier time of the year for special educators. Similarly, given the impacts

of COVID-19 and need for schools to be virtual, it is very possible educators were not interested in participation research due to their heavy workload. Additionally, we experienced attrition. Two participants withdrew from the study during baseline. One participant's camera stopped working during baseline sessions, and they did not respond to any further communication. Another participant indicated they were unhappy with having only written instructions and the lack of questions they were able to ask during baseline sessions. When the participant withdrew, they stated they did not see the benefit of this training due to the lack of questions the experimenter could answer during baseline. Two participants (Molly and Racheal) indicated they were unhappy with amount of baseline sessions needed to participate in the study. During their baseline sessions, Molly and Racheal often asked how many more baseline sessions were needed and were visibly frustrated (e.g., furrowed brow, heavy sighing) with the lack of information given by the experimenter. Given the lack of interest, attrition, and frustration during baseline, it may be important for researchers to consider how they conduct their studies with special educators. That is, rather than conducting a multiple baseline design, researchers might consider using a multiple probe design (Perone & Hursh, 2013) to reduce the number of baseline sessions. Additionally, written instructions could be omitted from baseline; however, this may also be aversive for individuals with no experience with a skill being taught. It will be important for researchers to identify research and training methods that are efficient and effective to increase buy in and decrease attrition with special educators.

A number of limitations arose during this study. First, the remote nature of the study may have contributed to differences in responding. That is, there were times in which internet connectivity was an issue, which resulted in the video pausing or freezing. For example, during some sessions, the camera froze as the learner was choosing or as the participant said, "Pick

one." Although these freezes occurred infrequency, they may affect how the participant responded due to the inability to observe ongoing behavior. Second, although confederates were trained prior to the start of the study, the confederates may have engaged in some behaviors that affected participant responding. For example, during one session, the confederate moved their computer screen, which might have signaled to the participant to change their behavior. Additionally, some errors were made such as starting to remove items before the participant. This response might have prompted the participant to remove the items. Although these errors occurred infrequently, they may have affected participant responding. Researchers may want to collect integrity measures on confederate behavior to ensure confederates engaged in high levels of responding. Similarly, integrity data may suggest when re-training of confederates is necessary.

There are several variables that may be important for researchers to evaluate in the future. First, given the importance of preference assessments within education, it will be important to identify and develop the most efficient training procedure. BST can be lengthy. Although we trained three different skills, training times ranged from 85- to 165-min. Thus, it will be important to determine the necessary and sufficient components of BST that result in effective and efficient acquisition. Group trainings (Lerman et al., 2008) or pyramidal trainings (e.g., Conklin & Wallace, 2019; Erath et al., 2020) may also increase efficiency as many individuals can be trained at one time. Group trainings would lower the time needed to train each staff member individually and decrease training costs. It may also be possible to train school psychologists or behavior support staff on preference assessments such that they can train and provide feedback to special educators on an ongoing basis such that the skill may be more likely to maintain across time when the trainer is no longer present (O'Handley et al., 2020). Second, it

may be important to train educators across several preference assessments. Participants often asked what to do if their learner engaged in problem behavior following the removal of a toy item. The MSWO is not ideal for learners who engage in problem behavior. Thus, providing special educators training on how to conduct and analyze the data for different preference assessments, as well as a decision-making model (Lill et al., 2020), may allow educators to quickly determine which preference assessment would be best suited for each student. Finally, several special educators noted they assess group preferences in our survey. It would be interesting to evaluate how to best assess group preference while ensuring the stimuli identified are high preferred for all students.

Overall, our results from Study 1 suggest the majority of our respondents struggled with motivational and behavioral issues in their classrooms and were unfamiliar with preference assessments. If respondents did conduct preference assessments, indirect preference assessments were often used and were used infrequently. Preference assessments may be important in special education to increase motivation and decrease problem behavior. Our results from Study 2 demonstrate that remote BST was effective for training special educators to conduct an MSWO, collect and analyze the data, and implement the results in a brief teaching session. Additionally, correct responding maintained in the presence of a novel confederate. Our participants also reported aspects of training to be enjoyable such as the effectiveness of training, BST, and feeling prepared to conduct an MSWO in their classroom; however, the online training format was not preferred. Finally, we see the value of increasing the use of preference assessments in special education. Thus, we hope this line of research will continue and foster additional collaboration between behavior analysts and special educators in the future.

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Figure 1

Study 2 results for Carrol, Molly, and Racheal.

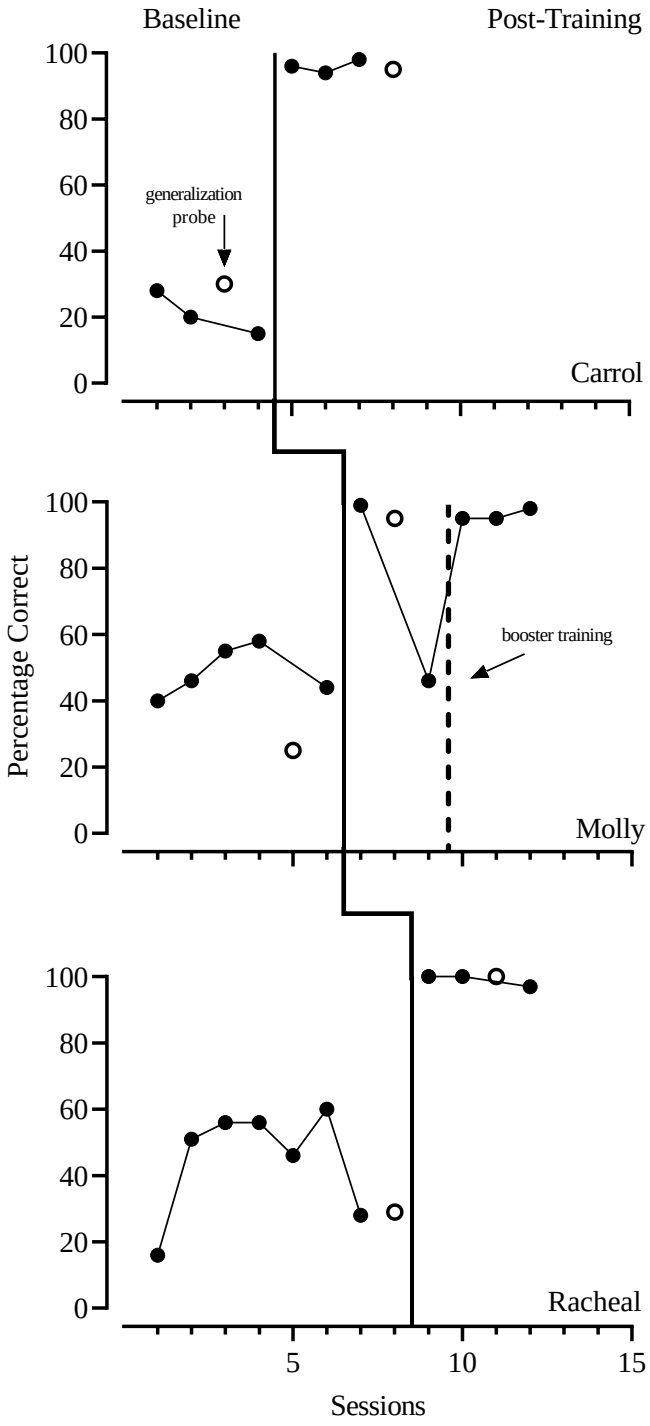

Table 1

Demographics Summary of Special Educators

Demographic	*n*	Percentage
Total Respondents	88	100
Special Education Teacher	74	84.1
Paraprofessional	9	10.2
Other	5	5.7
Grades Taught		
Pre-K	32	36.4
K-5	49	55.7
6-8	23	26.1
9-12	23	26.1
Vocational/Transitional	6	6.8
Population Taught		
Students with special needs	88	100
Behavior Analytic Background		
Behavior analytic coursework	49	55.7
Registered Behavior Technician (RBT)	2	2.3
Board Certified Behavior Analyst	3	3.4

Table 2

Summary of Motivational Strategies Reported by Special Educators

	n	Percentage
Total Respondents	88	100
Struggle with Motivation	81	92.0
Fidget Toys	41	46.6
Brain Breaks	39	44.3
Token Economies	39	44.3
Sticker Charts	35	38.8
Calm Down Zones	28	31.8
Notes Home	27	30.7
Other	27	30.7
Classroom Economy	21	23.9
Class Meetings	17	19.3
Go Noodle	15	17
Seat Signals	14	15.9
Class Dojo	11	12.5
Team Table Points	7	8
Fill a Jar	6	6.8
Callbacks	5	5.7
Struggle with Problem Behavior	79	89.8
Fidget Toys	77	76.1
Brain Breaks	67	76.1
Calm Down Zones	55	62.3
Tokens Economies	37	42
Sticker Charts	33	37.5
Notes Home	33	37.5
Other	33	37.5
Go Noodle	28	31.8
Class Meetings	20	22.7
Seat Signals	13	14.8
Class Dojo	8	9.1
Fill a Jar	7	8
Callbacks	6	6.8
Team Table Points	4	4.5

Table 3

Summary of Preference Assessment Use Reported by Special Educators

	n	Percentage
Total Respondents	88	100
Have Implemented a Preference Assessment	48	54.5
Student Preference Guides Instruction	83	94.3
Use Contingent Reinforcement	65	73.9
Type of Preference Assessment		
Indirect Preference Assessments	20	22.7
Ask the Individual or Parents	69	78.4
PS	9	10.2
MSWO	7	8
MSW	9	10.2
FO	15	17
SS	4	4.5
Other	3	3.3
Total Respondents	48	100
Frequency of preference assessment		
Assess daily	3	6.3
Assess weekly	3	6.3
Assess monthly	7	14.6
Assess yearly	21	43.8
Assess as needed	14	29.2
Assess individual preference	36	75
Assess group preference	2	4.2
Assess both group and individual preference	10	20.8

Table 4

Summary of Social Validity Results

Questions	Carrol	Molly	Racheal	Average
Training was easy to understand.	5	4	4	4.3
It was easy to learn how to conduct an MSWO using this training.	5	4	3	4
I feel prepared to conduct more preference assessments in the future.	5	4	5	4.6
I am satisfied with the overall outcomes of this study.	5	4	5	4.6
The feedback I was given was helpful during training.	5	4	5	4.6
I enjoyed this training.	5	4	5	4.6
I would recommend this training for other special education professionals to learn how to conduct an MSWO.	5	4	5	4.6
I preferred this online training as compared to in-person training.	4	3	2	3
Learning online was easier than learning in person.	4	3	2	3
I was satisfied w/ the web-based interactions.	4	1	4	3
I was satisfied w/ the camera set up during training.	5	1	5	3.7

Appendix A: Study 1 Survey

Part I: Demographics

1. Are you currently employed as a special education professional or special education teacher?
    a. If yes, continue with survey
    b. If no, end survey
2. What is your current role?
    a. Special education teacher
    b. Paraprofessional
    c. Other (please specify)
3. What grade(s) do you currently work with (select all that apply)?
    a. Pre-K
    b. Kindergarten
    c. 1st Grade
    d. 2nd Grade
    e. 3rd Grade
    f. 4th Grade
    g. 5th Grade
    h. 6th Grade
    i. 7th Grade
    j. 8th Grade
    k. 9th Grade
    l. 10th Grade
    m. 11th Grade
    n. 12th Grade
    o. Other
4. Do you have students with special needs (e.g., Autism Spectrum Disorder, Down Syndrome, Cerebral Palsy, Fetal Alcohol Syndrome) in your classroom?
    a. Yes
    b. Sometimes
    c. No
5. Have you taken any course work within the field of applied behavior analysis?
    a. Yes *(proceed to #6)*
    b. No *(proceed to Part II #1)*
6. Which applied behavior analysis courses you have taken?
    a. Introduction to Behavior Analysis
    b. Principles of Behavior Analysis
    c. Conceptual Foundations of Behavior Analysis
    d. Ethics for Behavior Analysis
    e. Behavioral Assessments and Behavior Change Procedures
    f. Measurement and Experimental Design in Behavior Analysis
    g. Organizational Behavior Management
    h. Experimental Analysis of Behavior
    i. Other

7. Are you currently credentialed through the Behavior Analyst Certification Board?
    a. Yes *(proceed to #8)*
    b. No *(proceed to Part II #1)*
8. Which credential do you currently hold?
    a. Registered Behavior Technician (RBT)
    b. Board Certified Assistant Behavior Analyst (BCaBA)
    c. Board Certified Behavior Analyst (BCBA)
    d. Board Certified Behavior Analyst – Doctoral (BCBA-D)

Part II: Motivational Strategies

1. Do you struggle with motivational issues in your classroom?
    a. Yes
    b. Sometimes
    c. No
2. Do you struggle with problem behavior or general classroom management related to disruptive behavior in your classroom?
    a. Yes
    b. Sometimes
    c. No
3. What are some strategies you use to increase motivation and appropriate behaviors (e.g., on-task, raising hand) in your classroom (select all that apply)?
    a. Sticker Charts
    b. Seat Signals
    c. Team Table Points
    d. Class Meetings
    e. Class Dojo
    f. Notes Home
    g. Fill a Jar
    h. Callbacks
    i. Calm Down Zone
    j. Go Noodle
    k. Brain Breaks
    l. Fidget Toys
    m. Classroom Economy
    n. Tokens/Tickets/Coupons/Raffles
    o. Other (please specify)
4. What are some strategies you use to decrease problem behavior (e.g., disruptive behavior, talking out, aggression) in your classroom?
    a. Sticker Charts
    b. Seat Signals
    c. Team Table Points
    d. Class Meetings
    e. Class Dojo
    f. Notes Home

g. Fill a Jar
h. Callbacks
i. Calm Down Zone
j. Go Noodle
k. Brain Breaks
l. Fidget Toys
m. Classroom Economy
n. Tokens/Tickets/Coupons/Raffles
o. Other (please specify)

5. Have you implemented a preference assessment in your classroom before?
   a. Yes
   b. No *(proceed to #10)*
6. How often do you conduct a preference assessment in your classroom?
7. When conducting a preference assessment, do you assess individual or group preference?
   a. Individual
   b. Group
   c. Both
8. Which type of preference assessments have you used in your classroom?
   a. Paired stimulus preference assessment
   b. Multiple stimulus without replacement
   c. Multiple stimulus with replacement
   d. Free operant preference assessment
   e. Single stimulus preference assessment
   f. Indirect preference assessment (e.g., rating form, questionnaire)
   g. Ask the individual
   h. Other (please describe)
9. Does student preference guide your instruction?
   a. Yes
   b. Sometimes
   c. No
10. Do you use contingent reinforcement in your classroom?
    a. Yes
    b. Sometimes
    c. No

Part III: Research Interest

1. Would you be interested in learning more about preference assessments?
   a. Yes
   b. Maybe
   c. No (end survey)
2. Do you have access to a computer with internet, video, and audio capabilities?
   a. Yes
   b. No (end survey)

3. Would you be interested in participating in a research study to learn how to conduct a preference assessment?
    a. Yes
    b. Maybe
    c. No

Appendix B: Brief Written Instructions

Conduct MSWO

1. Collect all materials
2. Conduct pre-session exposure
3. Conduct trial
    a. Place all items equidistant distant from each other and the participant
    b. Gain attending by stating “ready hands”
    c. Deliver SD “pick one”
4. If student reaches or selects more than one item,
    a. Block attempts by placing hands in front of the items
    b. Remove items for 5 s
    c. Re-present the trial
5. If the student engages in problem behavior,
    a. Minimize attention
    b. Remove items for 5 s
    c. Re-present the trial
6. If the student does not choose an item after 5 s,
    a. Remove items for 5 s
    b. Re-present the trial
    c. If the student does not select an item on re-presentation, end the assessment
7. If student selects an item from the array,
    a. Allow access to the item for 30 s
    b. Remove non-selected items within 5 s
    c. Do not deliver social interaction or praise
8. Following access,
    a. Say “my turn”
    b. Remove the chosen stimulus from the array
9. Repeat steps 3-8 until all items are chosen. Rotate item placement each trial
10. Conduct second iteration

Collect and Analyze Data

1. Collect all materials
2. Record student initials, evaluator initials, and date at top of data sheet
3. Write the stimuli names next to the number on top in second row of Step 1 and Step 2
4. For Step 1
    a. Following stimulus selection, record the selection order in the corresponding column and row
    b. Continue to record the selection order until assessment is complete
5. For Step 2
    a. Sum the selection order (i.e., total value) for each item
    b. Write the sum of the total value in the column for each item

6. For Step 3
    a. Assign a ranking based on total value by writing the items from lowest to highest total value
    b. If two items have the same total value, assign the same ranking

Program MSWO Results

1. Collect all materials
2. Conduct brief preference assessment with top two preferred items
3. State session contingency that includes the type of response required for access to preferred item and length of access
4. Conduct teaching trial
5. If student meets session contingency,
    a. Deliver selected item for access
6. If student does not meet session contingency,
    a. Do not deliver selected item for access
7. Repeat steps 4-6 until 10 teaching trials have been conducted

Appendix C: MSWO Data Sheet

Student Name: _____ Date: _____
Evaluator: _____

STEP 1	**Items/Activities/Foods**						
	1	**2**	**3**	**4**	**5**	**6**	**7**
Date: Iteration: 1							
Date: Iteration: 2							

STEP 2	**Items/Activities/Foods Total Value** Value of selection order					
1	**2**	**3**	**4**	**5**	**6**	**7**

STEP 3	**Final Rank Order** Most preferred to least preferred
1	
2	
3	
4	
5	
6	
7	

Appendix D: MSWO Confederate Scripts

General Instructions: Always match your array to the participant, regardless of their correctness. Following item set up, place hands in ready position (i.e., hands on table in front of you, not touching any items).

Trial 1: Choose one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered)

Trial 2: Yell "this is boring" (or something similar) within 5 s of the S^D "Pick one" (or item presentation if no S^D delivered).

Trail 3: Swipe items off the table

- **Trial 3 (2nd presentation):** Choose one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered).

Trial 4: Choose one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered)

Trial 5: Choose one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered)

Trial 6: Choose one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered)

Trial 7: Choose more than one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered).

- **Trial 7 (2nd presentation):** Choose one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered).

Trial 8: Choose one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered)

Trial 9: Choose more than one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered).

- **Trial 9 (2nd presentation):** Choose one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered).

Trial 10: Choose one item within 5 s of S^D "Pick one" (or item presentation if no S^D delivered)

Appendix E: Teaching Session Script

Trial 1	Choose item and do not comply (i.e., do not do the task)
Trial 2	Choose item and do not comply (i.e., do not do the task)
Trial 3	Choose item and comply (i.e., do what the task is correctly)
Trial 4	Choose item and comply (i.e., do what the task is correctly)
Trial 5	Choose item and comply (i.e., do what the task is correctly)
Trial 6	Choose item and do not comply (i.e., do not do the task)
Trial 7	Choose item and comply (i.e., do what the task is correctly)
Trial 8	Choose item and do not comply (i.e., do not do the task)
Trial 9	Choose item and do not comply (i.e., do not do the task)
Trial 10	Choose item and comply (i.e., do what the task is correctly)

Appendix F: Social Validity Survey

Circle the correct numeric response that best represents your opinion for each of the following questions.

Survey Scale:
1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree

1. I was satisfied with web-based training and interactions.	1	2	3	4	5
2. I was satisfied with the camera set-up during training.	1	2	3	4	5
3. I preferred this online training as compared to in-person training.	1	2	3	4	5
4. Learning online was easier than learning in person.	1	2	3	4	5
5. The training was easy to understand.	1	2	3	4	5
6. It was easy learning how to conduct an MSWO using this training.	1	2	3	4	5
7. It was easy learning how to collect and analyze MSWO data using this training.	1	2	3	4	5
8. It was easy learning how to program MSWO results using this training.	1	2	3	4	5
9. I enjoyed this training.	1	2	3	4	5
10. The feedback I was given was helpful.	1	2	3	4	5
11. I would recommend this training for other special education professionals to learn how to conduct an MSWO.	1	2	3	4	5
12. I am satisfied with the overall training.	1	2	3	4	5
13. I feel prepared to conduct more MSWOs in the future.	1	2	3	4	5
14. I am satisfied with the outcomes of this study.	1	2	3	4	5