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Megan E. Graul

Utah State University, a01175633@usu.edu

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TEACHING FUNCTION-BASED ASSESSMENT AND INTERVENTION
SKILLS TO BEHAVIOR SUPPORT STAFF USING
AN INTERACTIVE COMPUTER TRAINING

by

Megan E. Graul

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Special Education

Approved:

Thomas Higbee, Ph.D.
Major Professor

Casey Clay, Ph.D.
Committee Member

Heather T. Weese
Committee Member

D. Richard Cutler, Ph.D.
Vice Provost of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

2024

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ABSTRACT

Teaching Function-Based Assessment and Intervention

Skills to Behavior Support Staff Using an

Interactive Computer Training

by

Megan E. Graul, Master of Science

Utah State University, 2024

Major Professor: Dr. Thomas S. Higbee

Department: Special Education and Rehabilitation Counseling

Behavior support staff (BSS), including paraprofessionals, behavior technicians, and other entry-level school staff that support students with challenging behavior, play an essential role in public education settings, especially in special education classrooms. With the increasing number of students requiring intensive behavioral supports, it is imperative to identify cost-efficient strategies to provide adequate training to expand the behavioral skills of these individuals. For instance, training BSS to implement empirically supported behavioral strategies, such as functional behavior assessment and function-based intervention selection, may have benefits for both staff and students alike. Therefore, the purpose of this project was to develop an interactive computer training (ICT) that includes slides with recorded narration, video modeling, embedded skill practice opportunities, and periodic assessments. The project was designed to assess the effects of the ICT on BSS's accurate collection of descriptive (antecedent-behavior-

consequence, ABC) data from brief video scenarios, analyze descriptive data from completed ABC data charts, and select appropriate function-based interventions to address problem behavior. Prior to baseline sessions and following mastery-level performances in post-training assessment sessions, we will also conduct generalization probes to assess whether the skills trained in the ICT generalize to longer videos with multiple instances of student problem behavior, that more closely mimic natural classroom settings where skills would be used. The training will conclude with a modified social validity questionnaire to assess the general acceptability of the training procedure as well as the utility of the skills targeted.

(91 pages)

PUBLIC ABSTRACT

Teaching Function-Based Assessment and Intervention Skills to Behavior Support Staff Using an Interactive Computer Training

Megan E. Graul

Behavior support staff (BSS), including paraprofessionals, behavior technicians, and other entry-level school staff that support students with challenging behavior, play an essential role in public education settings, especially in special education classrooms. With the increasing number of students requiring intensive behavioral supports, it is imperative to identify cost-efficient strategies to provide adequate training to expand the behavioral skills of these individuals. For instance, training BSS to implement empirically supported behavioral strategies, such as functional behavior assessment and function-based intervention selection, may have benefits for both staff and students alike. Therefore, the purpose of this project was to develop an interactive computer training (ICT) that includes slides with recorded narration, video modeling, embedded skill practice opportunities, and periodic assessments. The project was designed to assess the effects of the ICT on BSS's accurate collection of descriptive (antecedent-behavior-consequence, ABC) data from brief video scenarios, analyze descriptive data from completed ABC data charts, and select appropriate function-based interventions to address problem behavior. Prior to baseline sessions and following mastery-level

performances in post-training assessment sessions, we will also conduct generalization probes to assess whether the skills trained in the ICT generalize to longer videos with multiple instances of student problem behavior, that more closely mimic natural classroom settings where skills would be used. The training will conclude with a modified social validity questionnaire to assess the general acceptability of the training procedure as well as the utility of the skills targeted.

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CHAPTER I

INTRODUCTION

Researchers have shown that functional behavior interventions, or interventions linked to why behavior is occurring, can be an effective strategy to address the increasing rates of challenging behavior in schools (Dunlap & Fox, 2011; Gage et al., 2012; Martinez et al., 2016). As such, the development and implementation of behavior intervention plans based on a functional behavior assessment (FBA) has become a federal expectation when supporting students with disabilities engaging in severe challenging behavior (Individuals with Disabilities Education Act Amendment [IDEAA], 2004). The primary purpose of FBA is to help practitioners recognize patterns of challenging behavior in order to develop and implement research-based interventions based on behavioral function, or why the behavior is occurring (Dunlap & Fox, 2011; Horner et al., 2011; Walker & Snell, 2017).

FBA consists of a range of assessment procedures that can be used independently, or in combination, to help identify the function of challenging behavior (Gresham et al., 2001; Miltenberger, 2012). FBA procedures can generally be categorized into three assessment types: indirect assessments, descriptive assessments, and functional analyses (Cooper et al., 2007). Indirect assessments include the review of past records, rating scales, and structured interviews to obtain information from individuals that are familiar with the student. The purpose of indirect FBA methods is to identify possible conditions

that correlate with the occurrence of problem behavior. These assessments do not require direct behavior observations but instead rely on others' interpretation of the circumstances around problem behavior. Indirect assessment is typically considered the most convenient FBA method due to its ease-of-administration and the minimal time and training required to complete procedures. However, all information gathered through this method needs to be interpreted with caution due to respondent's potential bias and inaccurate recall. As such, current recommendations suggest that practitioners gather indirect assessment data as only a preliminary step in the FBA process (Cooper et al., 2007).

Descriptive assessments involve direct observations of the behavior as it occurs in the natural environment (Cooper et al., 2007). The observer collects objective data on each occurrence of problem behavior in order to analyze the antecedent(s) that preceded the behavior and the consequence(s) that followed. This information helps the practitioner identify specific events that are correlated with the target behavior to support a theorized function. Descriptive assessments are conducted in natural settings during situations where the targeted problem behavior is most likely to occur. However, as descriptive assessments only encompass the observation of naturally-occurring events as opposed to the manipulation of environmental variables to test for functional relations, they can sometimes lead to incorrect behavioral assumptions when used in isolation (Cooper et al., 2007).

While indirect and descriptive assessments are the most commonly used methods to address challenging behavior in schools (Dunlap & Kern, 2018; Merrell et al., 2010; Park & Scott, 2009), there are occasions that may warrant a functional analysis.

Functional analysis is the most comprehensive and complex FBA methodology as it requires the practitioner to systematically arrange the environment to “test” whether various reinforcers affect problem behavior (Cooper et al., 2007). Functional analyses are typically comprised of four conditions (e.g., attention, escape, alone/ignore, and control) with each designed to contrive the necessary establishing operation for problem behavior to occur, delivering putative reinforcers for each occurrence, and assessing the effects on the rate of problem behavior (Cooper et al., 2007). However, because FA is designed to evoke problem behavior to determine the environmental variables functionally related to its occurrence, it is recommended that FAs be supervised by Board Certified Behavior Analysts (BCBAs)/behavioral professionals with expertise in conducting them to minimize potential risks posed by implementing the procedure.

Each of these FBA procedures vary in the amount of time and resources required to implement them effectively. FBA procedures can also vary in the reliability of the information they produce based on the level of expertise of the individual completing the assessment. In schools, where resources are often limited, special education teachers or other school professionals (e.g., behavioral professionals, school counselors, school psychologists) typically utilize a combination of indirect and descriptive assessments (Lerman et al., 2009; Scott et al., 2018). However, since descriptive assessments include ongoing observation and data collection, many hands are typically required to complete a comprehensive and reliable FBA. Although special education professionals are generally responsible for supervising the FBA process and developing the behavior intervention plan, many school teams rely on support staff for ongoing data collection and interactive

behavioral support during and after the FBA process (McCulloch & Noonan, 2013; Walker & Snell, 2017)

Behavior Support Staff (BSS), including paraprofessionals, behavior technicians, and other entry-level school staff that support students with challenging behavior, play an essential role in public education settings, especially in special education classrooms. BSS have greatly improved the adult-to-student ratio in classrooms (U.S. Department of Education, 2021), helping to provide meaningful and individualized instruction to students with disabilities. Unfortunately, the percentage of students with disabilities served under IDEA is increasing at a greater rate than the number of support staff being hired and sufficiently trained (U.S. Department of Education, 2021). BSS are often expected to collect FBA data, to implement functional behavior interventions to address challenging behavior, in addition to using evidence-based instructional practices to teach new skills. Despite this expectation, many of these individuals are not adequately prepared to perform the critical job duties (Giangreco et al., 2001; Giangreco et al., 2002; Walker, 2017).

BSS typically undergo less formal education compared to the teachers they support and are rarely provided the necessary training to effectively implement the expected evidence-based practices (Riggs & Mueller, 2001; Pindiprolu et al., 2007; Walker, 2017). Past research suggests a lack of initial and ongoing professional development and other job-specific training contribute to the ongoing educational needs of BSS (Brock et al., 2013). Additionally, lack of training regarding job responsibilities, especially when supporting students with complex needs, often leads to increased rates of burnout and high turnover in these entry-level positions (Garwood et al., 2017; Mason et

al., 2020). With the increasing number of students requiring intensive behavior support (McCulloch & Noonan, 2013; Walker & Snell, 2017), it is imperative to identify cost-efficient solutions to provide adequate training to these individuals so that, in turn, they can more effectively address student needs.

CHAPTER II

LITERATURE REVIEW

Research has shown that with sufficient training, BSS can successfully implement a wide variety of evidence-based practices, including functional behavior interventions (Bessette & Wills, 2007; Brock & Carter, 2013; Walker et al., 2017; Wood et al., 2011). For example, Walker and Snell (2017) evaluated the effects of workshop and coaching sessions on paraprofessional implementation of function-based interventions. Three paraprofessionals participated in this study; they were selected due to their role in supporting students with challenging behavior. The intervention consisted of two 1-hr workshops and weekly coaching sessions (average duration of approximately 28 min) that took place over the course of a 3- to 8-week period. Investigators examined the effects of the training sessions by recording the extent to which paraprofessionals implemented various function-based intervention strategies that were individualized for each student participant) with fidelity (i.e., percentage of checklist steps with correct procedural fidelity). In addition, researchers collected data on the student's appropriate and challenging behaviors to assess the impact of improved paraprofessional procedural fidelity on student outcomes. Experimenters found participants' average fidelity of implementation increased from 5% during the baseline condition to 93% during the intervention condition. All student participants also engaged in higher rates of appropriate behavior and demonstrated a significant decrease in challenging behavior following the implementation of the intervention. Authors concluded that these findings support the

growing body of research demonstrating the value of providing systematic behavior training to BSS, for staff and students alike.

In a similar demonstration, Lloyd et al. (2014) also used a series of in-person didactic trainings and ongoing coaching sessions to successfully train four paraeducators working in an elementary school setting to implement a trial-based FA. Researchers individualized each trial to fit the instructional routine of one of four student participants that engaged in challenging behavior. The training consisted of approximately 2 to 3 hr of training meetings throughout the experimental phases and ongoing coaching sessions over 2-3 school weeks. Experimenters used a modified multi-element design to evaluate the effects of test-control trials on the occurrence of problem behavior throughout the trial-based FA sessions. Authors found that following this training protocol, each paraeducator implemented a trial-based FA implemented with sufficient fidelity to accurately identify at least one response-reinforcer relation per student. Researchers then successfully validated the function identified for each student during a contingency reversal phase of the study. However, authors indicated a few significant limitations to this study. These limitations included researchers' decision to forgo establishing a post-training mastery criterion for procedural fidelity and the failure to assess whether the participants were able to gain the skills necessary to implement trial-based FA independently. Instead, investigators began conducting trials with coaching while providing reminders and feedback throughout the sessions as needed to ensure results appropriately represented the students' usual instructional contexts. So, although the training led to each participant correctly identifying a functional relation using the trial-

based FA format, it remains unknown whether the paraeducators could independently replicate the procedures to yield similar results.

Combined, these studies suggest that BSS can be taught to effectively implement function-based intervention strategies to reduce student challenging behavior using standard group-training and coaching methods. While in-person trainings have shown to be an effective method for training BSS, these trainings are often time and resource intensive (Brock et al., 2017; Gerencser et al., 2018; McCulloch & Noonan, 2013). In-person trainings typically require the systematic delivery of instruction, ongoing coaching, and immediate feedback provided by on-site, skilled trainers, all of which necessitate allocation of funds and resources. Unfortunately, these resources are in short supply in public education around the country (Baker, 2021; Garcia & Weiss, 2019), especially in rural and low-income areas (Ervin et al., 2001; Traub et al., 2017; Van Acker et al., 2005). Therefore, it is essential to explore alternative methods for providing efficient and effective training to BSS so they can more effectively interact with students.

One potential solution to address many of the limitations of in-person training involves utilizing an asynchronous model to present content through a computer-based training. Computer-based trainings provide a significant amount of flexibility to both the trainer and trainee as they are self-paced and can be completed at the convenience of the user. Plus, computer-based trainings ensure the systematic and consistent delivery of the training material that can be individualized to meet the specific needs of each learner. Computer-based trainings have also been successfully utilized to teach a variety of complex skills to BSS (Cardinal et al., 2017; Geiger et al., 2018; Machado & Luczynski, 2021; Nosik & Williams, 2011; Nosik et al., 2013).

For example, McCullough and Noonan, (2013) used online training videos to teach three paraprofessionals working in a special education setting to implement mand training procedures to increase the frequency of mands used by their students. The training procedures used in this study consisted of 18 short voice-over videos with classroom demonstrations, followed by a competency check to check for understanding. Investigators used a multiple baseline across participants design to examine the relationship between the accuracy of paraprofessionals' implementation of mand training during the baseline and post-intervention conditions as well as to capture the total frequency of mands used by students. Following intervention, researchers found that the percentage of intervention steps implemented correctly increased for all paraprofessionals. Correspondingly, researchers also demonstrated that this increase in paraprofessionals' procedural fidelity led to an increase in the rate of student mands. Despite these improvements in procedural fidelity and student mands, only two of three participants achieved the mastery criteria of 88% or above with the training videos alone. Therefore, authors recommended modifications to the general training procedures, specifically regarding measurement and generalization, to achieve optimal levels of procedural fidelity.

In another evaluation of a computer-based training for entry-level staff, Gerencser et al. (2018) coached six paraprofessionals to implement discrete trial instruction with an errorless learning procedure through an interactive computer training (ICT). Differing from the previous study, this ICT was a more elaborate, multi-component interactive computer-based training program that included video models, audio narration, interactive activities, and competency checks. Gerencser et al. evaluated training outcomes by

assessing participants' procedural fidelity implementing discrete trial instruction with students in classroom settings. Researchers' initial findings demonstrated that, although all participants' implementation fidelity increased, only one of six paraprofessionals reached the mastery criteria of 90% or higher with the interactive computer training alone. To address this limitation, researchers supplemented the ICT with common additional training components including a procedural checklist, remote coaching, and remote performance feedback. These procedural variations resulted in two additional paraeducators reaching the established mastery criteria. The final three participants demonstrated approximately 80% procedural fidelity, even following supplemental procedures. Therefore, investigators concluded that additional training components may be required when teaching a more complex intervention procedures, such as discrete trial instruction with errorless prompting. In addition, Gerencser et al.'s findings demonstrated that the complexity of the targeted skill, along with the experience level of participants, likely influence skill acquisition and, therefore, should be considered in future research.

In another example, Hansard and Kazemi (2018) focused on teaching participants another more complex behavior-analytic skill through a computer-based training. Researchers embedded their training procedures on the implementation of a paired-stimulus preference assessment into a video self-instruction package. The video training package consisted of written and voice-over instructions, images, video models, and text prompts to practice. Four undergraduate students with no previous experience implementing behavior-analytic procedures participated, with a research assistant serving as a simulated client. Researchers used a nonconcurrent multiple-baseline across participants design to evaluate the effects of the training on the implementation, scoring,

and interpretation of results of a paired-stimulus preference assessment. During the baseline session, each participant received a brief summary of the assessment procedures before being asked to conduct a paired-stimulus preference assessment with the confederate client. Participants were allowed to refer to the instructions throughout the session, but no feedback was provided for correct or incorrect responses.

The video training used by Hansard and Kazemi (2018) was divided into three sections (i.e., setting up, implementing, and interpreting and scoring results) and they gave participants 30 min to review the video and practice assessment steps before they attempted to implement the paired-stimulus preference assessment with the confederate. Across participant, the average accuracy score during baseline sessions was 7% but increased to 95% following the implementation of the video package with all participants meeting the mastery criterion with the video training alone. While the results of this study were promising, researchers assessed participants' performance using a simulated client who engaged in scripted responses immediately following the completion of the video training. Thus, the generalizability and maintenance of these findings to more natural settings remain unknown.

While researchers demonstrated various computer-based trainings can be effective in teaching entry-level staff a range of evidence-based practices, relatively few have training studies have addressed challenging behavior or training functional behavior assessment and interventions. In one such example, Collins et al. (2009) used video modeling to coach six staff members working in a group home with adults with developmental disabilities to implement a problem-solving intervention following situations where a client appeared to be escalated and/or engaging in aggression.

Researchers used a nonconcurrent multiple baseline design to assess the effects of video modeling on the percentage of correctly implemented problem-solving steps. During baseline, staff members received the same written procedures from the program's initial training and experimenters asked to participate in a role-play exercise with a simulated client in a fictitious scenario. The researcher used scripted responses to respond to questions during the role play but provided no other instructions or feedback. Although the residential program had previously provided training on the seven-step intervention, staff only demonstrated an average of 38% correctly prompted problem-solving steps during baseline trials.

The conditions in the treatment phase of Collins et al. (2009) were identical to baseline except that participants watched a video model prior to starting the role play exercise. Following the video modeling intervention, participants' percentage of correctly implemented problem-solving steps increased to an average of 91% with five of the six participants meeting the mastery criterion of 90% before or during the fifth session. The final participant achieved mastery-level performance following nine sessions. Investigators also demonstrated that the skills maintained over time and that participants' the problem-solving skills generalized to novel problems and use with actual clients. However, authors noted the relative simplicity of the trained skill likely influenced outcomes and that data on client behavior change was needed to validate the full effects of the intervention.

In an attempt to address possible procedural limitations that accompany a less complex training procedure such as using video modeling alone, some studies have included additional components to provide a more individualized training experience

using a multi-component ICT. For example, Retzlaff et al. (2020) trained six Registered Behavior Technicians (RBTs) employed at an outpatient severe behavior clinic to use ongoing visual inspection of functional analysis (FA) graphs through an ICT. Ongoing visual inspection is the process of applying specific criteria following each FA session to objectively determine when to end an analysis instead of applying the structured visual analysis criteria once all FA sessions have been completed (Saini et al., 2018). Since prior research demonstrated that using ongoing visual analysis can decrease the duration of FAs by more than 40% (Saini et al., 2018), this is a potentially valuable clinical skill to train.

RBTs in the Retzlaff et al. (2020) study completed the ICT modules in 2.5-3.5 hr. The modules consisted of video modeling, informational slides with voice-over instructions, and quiz questions embedded throughout the training. The number of quizzes participants completed varied depending on how quickly they reached the mastery criterion of 80% or higher in each content areas. Researchers concluded the training once participants demonstrated mastery in four content area and scored 80% or higher on the cumulative assessment quiz at the end of the training. Retzlaff et al. (2020) assessed the effects of the training by measuring the percentage of correctly implemented steps when reviewing sample FA graphs using a multiple baseline across participants design. Following the ICT, five of the six participants reached the mastery criterion with the final participant requiring performance feedback and additional exposure to the training content before accurately implementing ongoing visual inspection. Given the complexity of the targeted skill, these findings support the notion that even entry-level

behavioral staff can be trained to implement complex FBA-related procedures, using a computer-based training alone, with little-to-no need for in-person instruction.

In another study where experimenters trained a more complex behavioral skill through an ICT, Scott et al. (2018) trained special education teachers and paraeducators on how to accurately detect and record antecedents and consequences of problem behavior (i.e., ABCs) in a classroom setting. In the first experiment, participants completed the approximately 1 hr 40 min training program that consisted of video lectures, models, and practice sessions. Using a multiple-baseline across participants design, Scott et al. (2018) evaluated the effects of using videos clips of function-based problem behavior depicting either a single antecedent-consequence exemplar, multiple antecedent-consequence exemplars, and multiple exemplars with simultaneously occurring antecedents and consequences. Results of Experiment 1 indicated that participants were only able to accurately collect descriptive data from the practice videos after completing the multiple exemplars with simultaneous events training condition.

Given these findings, Scott et al. (2018) modified the training procedures to evaluate the effects of providing the simultaneously occurring multiple exemplar training (i.e., final condition in Experiment 1) without participants completing training on single and multiple antecedent-consequence videos beforehand. The training conditions in Experiment 2 compared videos depicting single verses multiple exemplars of problem behavior with the occurrence of simultaneous antecedent and consequence events. Participants' baseline performances indicated that the majority of educators required explicit training to detect simultaneously occurring environmental events to reach high levels of performance (i.e., high levels of accuracy collecting ABC data). However, most

participants accurately collected descriptive data from the video after competing only the single exemplar simultaneous events training. Researchers concluded the single exemplar with simultaneous events training procedure was both effective in increasing accurate data collection with teachers and paraeducators and was also time and resource efficient. A significant limitation in this study was that the same student and topography of problem behavior appeared in all the practice and test videos, potentially impacting the external validity of the results. Despite this limitation, Scott et al. (2018) clearly demonstrated that computer-based trainings on FBA skills may be an effective method of disseminating behavior-analytic procedures to populations that need them, like school professional.

Collectively, there is a solid body of prior research demonstrating that with sufficient training, BSS can effectively implement a variety of complex ABA assessment and intervention skills to support student needs. Since providing BSS with the necessary training to be successful in their role has the potential to lead to better student outcomes, continuing to refine and evaluate training methods for this population seems a meaningful social goal. In addition, providing sufficient training to manage student problem behavior in the classroom may help schools maintain qualified individuals in these positions where there are often high rates of turnover (Garwood et al., 2017; Mason et al., 2020). Since prior researchers have shown that computer-based training models can be an efficient and effective training option, exploring their utility in public education settings is a viable means of providing the critical training BSS need to perform their jobs well.

Purpose Statement & Research Questions

While the original intent of my project was to both develop and evaluate the effectiveness of an ICT to teach educators and educational support staff about functional behavior assessment and intervention selection, unforeseen delays in the development of the ICT precluded me from collecting data on the effectiveness of the ICT. Instead, I focused on the development of the ICT modules. Therefore, the purpose of this project was to develop the materials that will be used in a future study to examine the effectiveness of the ICT on functional behavior assessment and intervention selection skills for educators and educational support staff working in public education settings. The outlined procedures in this project seek to replicate and extend previous ICT research designed for parents (Marleau et al., 2019; Turgeon et al., 2020) to teach teachers and entry-level school staff (e.g., paraprofessionals, behavior technicians, and other school employees that provide direct support to students with challenging behavior) to collect ABC data, identify functions of behavior, and select an appropriate function-matched intervention. The specific research questions that we will seek to answer in a future study are:

1. To what extent does the ICT increase participants' accuracy collecting ABC data from brief video scenarios, identifying functions of problem behavior from completed ABC charts, and selecting appropriate function-based interventions, as measured by a percentage correct composite score per assessment session?
2. To what extent will the functional assessment and intervention skills generalize to longer videos that more closely mimic real-world assessment conditions, as

measured by a percentage correct composite score per generalization probe session?

3. What are participants' perceptions of the acceptability and applied utility of the ICT used in this study, as measured by a modified social validity questionnaire?

CHAPTER III

METHOD

Participants and Setting

Three to five entry-level behavior support staff (BSS) working in a public school district will participate in this study. BSS were selected as the target population for this study because people working in these entry-level positions rarely receive adequate training on how to effectively manage challenging behavior, even when it is the primary purpose of their job (Brown et al., 1999; Brown & Stanton-Chapman, 2017; Giangreco et al., 2010; Walker et al., 2017). Each individual must meet the following inclusionary criteria to be eligible to participate: (a) willingness to voluntarily participate, (b) typical job responsibilities include supporting students with challenging behavior, and (c) have had no prior, formal training on behavioral function or function-based interventions. Individuals will not be excluded from participation based on years of work experience, educational background, gender, race/ethnicity, or age. Individuals will be excluded from participation if they have participated in previous, formal training in functional behavior assessment and function-based interventions, if they score 70% or above during the baseline generalization probes, or if they score 70% or above across two or more of the final three consecutive baseline assessment sessions prior to training.

BSS will be recruited immediately after being hired by the school district.

Prospective participants will have the option to complete a portion of their initial new-hire training by participating in the study or by participating in the standard, in-person,

multi-day training currently provided to all new BSS. Experimenters will provide potential participants with a written document that outlines the purpose of the study, inclusionary and exclusionary criteria, as well as a one-page, written comparison of the standard training versus the ICT used in this study. Experimenters will inform all potential participants that participation is voluntary and will have no impact on evaluations of their job performance. However, participants will receive up to \$100 in Amazon gift cards as an additional incentive, should they opt to participate in the study. Experimenters may end participation in the study prior to a participant completing all experimental phases if they elect to end their involvement early, if their composite scores in three or more baseline generalization probes is 70% correct or above, or if their assessment session composite scores are 70% correct or above across two or more of the final three consecutive baseline assessment sessions prior to training. If researchers terminate participation prior to a participant completing all experimental phases, they will receive half the compensation (\$50). The remaining incentive is contingent on completion of all phases of the study.

Participants will complete assessment, generalization, and ICT sessions either in an office space in the district building where they are employed or remotely at their preferred location with access to a personal computer or smart device (i.e., tablet, smartphone) and a stable Wi-Fi connection. Participants will receive an email with a username and password assigned by the researcher and a link to access the training on Qualtrics. Sessions will be self-paced and ideally completed within one to two weeks. The total duration of the training is anticipated to take approximately 4 hours with individual sessions taking 15-45 min to complete.

Materials

The materials in this project were developed for Griffith et al. (in progress), an ongoing study being conducted in our lab. Griffith et al. is exploring the effects of an ICT protocol on general education teacher's function-based assessment and intervention skills. The ICT sessions and corresponding pre and post assessment sessions are delivered through Qualtrics, which is an online survey software tool. The web-based platform is designed to automatically collect response data. Each session will begin with instructions and an estimated duration for completion.

Project materials embedded within the web-based platform include a demographics questionnaire that will ask participants to provide basic background information (see Appendix A). During generalization probe sessions, participants are asked to read an operational definition of problem behavior followed by a generalization probe video (see Table 1). Generalization probe videos are 3-4 minutes long and were scripted to depict the same student engaging in 10 instances of the same topography of problem behavior. Each instance of problem behavior was scripted to contain specific environmental antecedents and consequences and, collectively, all instances depicted on a given generalization probe video indicate one basic function (i.e., attention, access, escape, automatic).

Table 1*Operational Definitions for the Problem Behaviors Depicted in the Assessment Session and Generalization Probe Videos*

Behavior	Operational Definition
Disruptions	The student talks out without first receiving permission to speak, talks while the teacher or peers are talking, or makes audible vocal (e.g., groaning, laughing, sighing) or non-vocal (e.g., loudly or repeatedly moving materials) sounds.
Noncompliance	The student actively or passively refuses to comply with instructions within 5 s. Active noncompliance will include the student saying “No,” “I don’t want to,” or similar statements and failing to comply with the instruction within 5 s. Passive noncompliance will include the student silently engaging in a different activity than instructed (e.g., looking in backpack or at other low-value materials, looking out the window, looking around classroom) but still failing to comply with an instruction within 5s.
Aggression	The student makes physical contact with another person that is likely to result in injury such as pushing, hitting, hitting with an object, throwing objects at people, kicking, hair pulling, or scratching that lasts at least 3 s.
Property Destruction	Property destruction will be defined as the student damaging materials or property and will include swiping materials from the desk or walls, ripping or breaking materials, throwing materials (not at a person), and causing damage to the classroom environment (e.g., walls, desks, doors).
Inappropriate Language*	The student making socially rude or derogatory comments including name-calling, profanity, threats, or sexually explicit comments.
Self-injury*	Any behavior a student directs towards themselves that is likely to result in injury such as hitting themselves, hitting themselves with an object, kicking themselves, pulling their own hair, or scratching themselves, that lasts at least 2 s.

Note. Behaviors marked with an asterisk () will only be used in two of the four sensory assessment videos.*

Assessment sessions start with a short 5-20 s video clip depicting one instance of problem behavior serving one behavioral function (attention, access, escape, automatic). Assessment session videos are similar to those used in the generalization probes but utilize different individuals acting out single instances of various problem behaviors, instead of the same student engaging in multiple instances of the same problem behavior as in generalization probe videos. After watching each assessment video (i.e., one instance of problem behavior; 12 total per session), participants are asked to select the relevant antecedent(s) and consequence(s) from a list of options provided in a multiple-answer format (see Figure 1). Each instance of problem behavior has 1-3 correct antecedent responses and 1-3 correct consequence responses.

Figure 1

A Sample of One Trial in the ABC Data Collection Task in Assessment Sessions

What happened before? Antecedent(s) Check all that apply	Problem Behavior	What happened after? Consequence(s) Check all that apply
<input type="checkbox"/> Little or no individual attention <input type="checkbox"/> Given an instruction <input type="checkbox"/> Preferred item/activity removed/denied <input type="checkbox"/> No interaction with others <input type="checkbox"/> None of these	Disruption	<input type="checkbox"/> Adult or peer attention <input type="checkbox"/> Adult or peer stops interacting with student <input type="checkbox"/> Access to preferred item/activity <input type="checkbox"/> Work/task removed/delayed <input type="checkbox"/> Work/task NOT removed <input type="checkbox"/> No interaction with others <input type="checkbox"/> None of these

Additional assessment session materials include 28 narrative ABC charts used in the Function Identification Task. The ABC charts provide a narrative description of five instances of the same topography problem behavior. Collectively, we designed these charts such that all ABCs on a given chart indicate one of the four basic functions of problem behavior (see Figure 2). The training is programmed to display five ABC charts per assessment session with one ABC chart per function and one ABC chart with a randomly selected function. Response options include access, attention, escape, sensory and unknown, and will be provided in a multiple-choice format with only one correct option per chart. Materials in the final task include written summary statements describing problem behavior with a specific function, followed by a list of five potential interventions in a multiple-answer format (see Figure 3). The training displays five summary statements per assessment session with one statement per function and one more with a randomly selected function. For each statement presented, response options include 0-2 correct options (i.e., function-based intervention options, interventions matched to the function of problem behavior indicated in the summary statement).

Figure 2

A Sample ABC Chart from the Function Identification Task in Assessment Sessions

What happened before? Antecedent(s)	Problem Behavior	What happened after? Consequence(s)
Student working alone at small table	Student sings and drums on the table with pencils loudly	Teacher comes over to student and coaxes them to continue working
Silent reading time	Student loudly moves items in/around desk	The teacher and peers do not respond

Whole-group instruction	Student gets up and dances in front of class	Teacher reprimands, peers laugh
Teacher talking to another student	Student loudly moves materials in/around desk	Teacher comes to student and encourages them to continue working
Teacher talking to another student	Student sings and drums on the table with pencils loudly	The teacher continues to talk to the other student
<p>Why is this student being disruptive?</p> <p>Check all that apply</p> <hr/> <p> <input type="checkbox"/> To get attention from teacher or peers <input type="checkbox"/> To get a preferred item or activity <input type="checkbox"/> To get out of doing a task/work <input type="checkbox"/> To create a pleasant sensation <input type="checkbox"/> None of these </p>		

Note. Shaded rows indicate descriptions of problem behavior that does not result in putative reinforcer and will not appear when participants view the task during the experiment.

Figure 3

A Sample of One Trial in the Intervention Selection Task in Assessment Sessions

<p>When people aren't paying attention to the student, the student is [problem behavior], which results in teacher attention.</p> <p>Please select the best way(s) for the teacher to address the problem behavior described above in the video. Select all that apply.</p> <hr/> <p> <input type="checkbox"/> The teacher will give the student more attention throughout the day or will arrange for peers to regularly provide attention throughout the day. (Attention) <input type="checkbox"/> The teacher will explain to the student in detail why his/her behavior is wrong immediately after the problem behavior occurs. (Contraindicated for attention) <input type="checkbox"/> The teacher and/or peers will ignore (or limit) the attention they provide to the student following instances of the problem behavior. <input type="checkbox"/> The teacher and/or peers will let the student have a preferred item following instances of problem behavior in order to calm the student down. <input type="checkbox"/> None of these </p>

Next, participants complete the ICT modules which consist of voice-over PowerPoint presentations, video models, and other interactive features. The training is split into three modules covering content assessed during the assessment sessions: ABC Data Collection, Identifying Behavioral Function, and Selecting Functional-based Interventions. Approximately 5-15 questions are embedded throughout each module section to check for understanding. After finishing each module, participants are prompted to complete a 10-question post-training assessment quiz. Within module and quiz question formats include multiple choice, multiple answer, true/false, fill in the blank, and matching.

After completing the training, participants are provided with a social validity questionnaire (Appendix C) to assess their perceptions of the ICT. We modified this questionnaire using questions drawn from the Training Acceptability Rating Scale (TARS-1: Davis et al., 1989; TARS-2: Milne & Noone, 1996, pp. 140–141). As in the original scale, participants answer 19 questions on a 4-point Likert scale ranging from 0 for “Not at all” to 4 for “A great deal.” Participants are also asked five open-ended questions to collect qualitative information about what part of the ICT they found most helpful, if they have any suggestions or changes that could improve the ICT, and about any additional comments they would like to share about their experience with the ICT.

Experimental Design

Future studies will use a non-concurrent multiple baseline across participants design (Kazdin, 2011) to evaluate the effects of the ICT on participant’s function-based

assessment and intervention skills. In accordance with this design, participants will each experience a different number of baseline assessment sessions prior to completing the ICT modules. Additionally, the first participant's post-training assessment session performance will be reviewed to ensure stability before additional participants start the ICT. Stability will be defined as three consecutive data points with no new high or low values of the dependent variable. The staggered introduction of the ICT across participants serves to demonstrate experimental control as participant's assessment and generalization session performances improve following the completion of the ICT modules but not before.

Response Measurement

The primary dependent variable in the future study will be the percentage correct composite score in each baseline and post-training assessment session. All participant responses will be recorded automatically through the web-based platform. In the ABC Data Collection Task, experimenters will measure the accuracy of responses by calculating the percentage of correct antecedents and consequences selection responses per session. Then, in the Function Identification Task, experimenters will assess participants' analysis of the descriptive data presented in ABC charts by measuring the percentage of opportunities that participants correctly select the function per session. Finally, in the Intervention Selection Task, experimenters will assess if participants can select an appropriate intervention given the function of problem behavior by measuring the percentage of correctly selected interventions per session. Experimenters will calculate a composite score for each baseline and post-training assessment session by

totaling the number of correct responses per assessment session task, divided by the total number of response opportunities per session, and multiplying by 100 to obtain a percentage correct per session.

During the generalization probe sessions, experimenters will ask participants to respond to three open-ended questions. Using typed, narrative responses, participants will describe what they observed in the video, why they believe the problem behavior is happening, and what they would do to address it. Experimenters will review these narrative responses to determine if participants are able to correctly organize information in an ABC format, if they can derive the indicated function from that information, and then, whether they can generate appropriate function-based interventions using that information.

The coding system that will be used to assess narrative responses to probes was established by two BCBA's who independently viewed each generalization probe video. These BCBA's collected structured ABC data for each video (i.e., 10-12 antecedents and 10-12 consequences per video), analyzed the ABC data to identify the likely function of problem behavior (i.e., one of four basic functions indicated), and selected three, appropriate, function-based interventions from the list described above (Appendix B). For each generalization probe, experimenters will calculate the percentage of correct narrative responses per session by comparing participant responses to those provided by the expert observers. They will score each narrative response that matches the experts' descriptive data of antecedents and consequences, function identification, and function-based intervention selection as correct.

Experimenters will measure the percentage of correct descriptive responses by summing the total number of antecedent or consequences described correctly per session, divided by the total number of antecedents and consequences depicted in the video, multiplied by 100. They will measure participants' accurate analyses of descriptive data by dividing the number of correct responses per session by the total number of opportunities to select the appropriate function per session (1), multiplied by 100. Lastly, the selection of appropriate function-based interventions will be measured by calculating the percentage of interventions participants described correctly per session. A percentage will be calculated by dividing the total number of correctly described interventions by the total number of function-based interventions possible per function (3), multiplied by 100. Additionally, the web-based platform will automatically collect data on several secondary measures including the total time needed to complete individual sessions as well as the total duration of all experimental phases, participants' response latency for each item scored, measures of ICT session training performance, and social validity data (Appendix C).

Intercoder Agreement

All participant responses will be recorded automatically through the web-based platform, so intercoder agreement will only be calculated on the three narrative responses collected during generalization probes. Two coders will independently review the narrative responses for at least 20% of both pre- and post-training generalization probe sessions for each participant. Future experimenters will code each narrative response as either correct or incorrect, as defined by the narrative coding system. For the first

narrative response (“Please describe your observations of the student’s problem behavior shown in the video.”), agreement will be defined as both coders scoring each antecedent or consequence for each instance of problem behavior depicted in the video, as correct (i.e., same as expert recording) or incorrect (i.e., does not match expert recording).

In the second narrative response (“Now, based on your descriptions of the student’s problem behavior, describe the best way(s) for the teacher to address the problem behavior?”), agreement will be defined as the coders both recording the function of problem behavior as correct (i.e., same function as experts) or incorrect (i.e., different function than experts). For the final narrative response (“... please describe up to three intervention strategies you would use to address the student’s problem behavior”), agreement will be defined as both coders recording each intervention listed as correct (i.e., function-matched to function indicated in video, same as experts) or both coders scoring them as incorrect (i.e., not a function-matched intervention, different than experts). For this and the other two narrative responses, future experimenters will define disagreements as one coder recording a response as correct and the other coder recording the response as incorrect. Intercoder agreement will be calculated by using the point-by-point agreement method (Cooper et al., 2007; Kazdin, 2011), with the total number of agreements divided by the total number agreements plus disagreements, then multiplied by 100 to obtain a percentage.

Procedures

Future participants will begin by reading an overview of the training, instructions on how to proceed through the sessions, and by filling out a brief demographic

questionnaire (Appendix A). Then, participants will complete four baseline generalization probes (i.e., one per function) and 5-9 assessment sessions, based on their performance. During the treatment phase, participants will progress through the ICT modules by scoring 80% or above on each module quiz. Next, participants must achieve a composite score of 80% or above on 3-6 post-training assessment sessions before completing four post-training generalization probes (see Table 1). Participants with a composite score below 80% on any of the final three post-training assessment sessions will be prompted to repeat the ICT and complete additional post-training assessment sessions. In person or remote performance feedback will be provided to participants that receive a composite score below 80% in the post-training assessment sessions. Finally, participants will be asked to complete the modified social validity questionnaire (Appendix C).

Table 2

The Sequence of Experimental Phases and Mastery Criteria for Each Phase

Experimental Phase	Session Types	Number of Sessions	Mastery Criteria
Read Experiment Instructions	N/A	N/A	N/A
Demographics Questionnaire	N/A	1 session	N/A
Baseline Generalization Probes	1 session each: Attention Access Escape Sensory	4 sessions	N/A
Baseline Assessment Sessions	N/A	3, 6, or 9 sessions depending on design and stability	N/A

Interactive Computer Training Modules	1. ABC Data Collection 2. ABC Data Analysis and Behavioral Function 3. Selecting Function-based Interventions	3 sessions	80% correct or better on each module quiz
Post-training Assessment Sessions	N/A	3-6 sessions depending on stability of performance	80% correct or above composite score for the final three consecutive sessions
Interactive Computer Training Modules*	1. ABC Data Collection 2. ABC Data Analysis and Behavioral Function 3. Selecting Function-based Interventions	3 sessions	80% correct or better on each module quiz
Post-training Assessment Sessions*	N/A	3-6 sessions depending on stability of performance	80% correct or above composite score for the final three consecutive sessions
Performance Feedback*	N/A	1-5 sessions	80% independent correct or above composite score for three consecutive performance feedback session
Post-training Assessment Sessions*	N/A	3-6 sessions depending on stability of performance	80% correct or above composite score for each of the final three consecutive sessions
Post-training Generalization Probes	1 session of each: Attention Access Escape Sensory	4 sessions	N/A
Social Validity Questionnaire	N/A	1 session	N/A

Note. Participants will only experience experimental conditions marked with an asterisk (*) if they fail to perform at or above the mastery criteria specified in the preceding condition.

Instructions and Demographics Questionnaire

Participants will begin the first session by reading an overview of what to expect and instructions for how to proceed through the training. An email will be sent to participants with login information along with the website link. These instructions state:

Thank you for agreeing to participate in this study! Your participation will help us learn more about how to best train educators in evidence-based classroom management strategies. You will complete all parts of the study through the link provided and the study will be broken up into different sessions. At the start of each session, you will read instructions for that session, including the estimated time required to complete the session.

Please note, some sessions may take longer than others to complete (range 10-40 min). Once you begin a session, please continue until all questions are complete and you reach the stop sign, which will indicate the end of that session. If you end the session before reaching the stop sign, you will start again at the beginning of the same session when you return. You can complete as many or as few sessions as you want each day, stopping when you reach the stop sign. If you wish to complete additional sessions after reaching the stop sign, click “Next” instead. When you access the link in the future, you will automatically begin in your next programmed session. Please try to complete all sessions within the next two weeks. In total, it may take 5-7 hours to complete all sessions.

Participants will be prompted to indicate that they have read and understand the directions and requirements before advancing to the demographic questionnaire (Appendix A). They will have the option to skip or answer all questions on the demographic questionnaire. The session will end once the demographic questionnaire has been submitted.

Baseline Generalization Probes

During the baseline generalization probe phase, participants will complete four sessions (one for each function), presented in random order. Experimental tasks will be presented to participants in the same sequence within each generalization probe session. The following instructions will start the session:

In this session, you will watch a video depicting a series of common student-teacher interactions. As you watch the video, pay attention to the student's problem behavior, indicated with the red arrow. In this video, the problem behavior you will see is property destruction. After the video, you will answer a series of questions about the student's problem behavior and how to address it. It may be helpful to pause the video after each instance of problem behavior and make a note of your observations to use on the questions that follow. Because we are attempting to assess your current level of understanding on the training topics, no feedback on correct or incorrect responses will be provided. Once you begin the session, please continue until all questions are complete and you reach the stop sign. This session will take approximately 15-20 mins to complete.

Participants will then watch the first of four generalization probe videos denoting behavior matching one of the four basic behavioral functions (attention, escape, access, sensory). During the video, participants will be prompted to respond to a series of questions by describing their observations. Participants' descriptive assessment skills will be analyzed by providing the following directions: "Please describe your observations of the student's problem behavior shown in the video. You have 10 min to type your response." Next, participants will use their description of behavior from the first question to theorize why the problem behavior is happening with the following instructions: "Now, based on your descriptions of the student's problem behavior, describe the best way(s) for the teacher to address the problem behavior observed in the video. You have 10 min to type your response." The final question aims to assess if participants can use their theorized function to identify appropriate function-based interventions to address the problem behavior. The instructions will read: "Now, based on your descriptions of behavior and the reason why problem behavior is occurring, please describe up to three intervention strategies you would use to address the student's [insert problem behavior]." The baseline generalization probe phase will end after participants complete one generalization probe session for each behavioral function.

Baseline Assessment Sessions

The baseline and post-training assessment session conditions will start with participants reading the following instructions:

In this session, you will complete a series of brief assessment tasks. First, you'll watch a series of five short videos depicting common student-

teacher interactions and answer questions about those videos. Then, you'll review five charts followed by five written descriptions of student behavior and answer some questions about those descriptions. You will complete several assessment sessions with this same format, with the number determined by the experimental design. Because we are attempting to assess your current level of understanding on the training topics, no feedback on correct or incorrect responses will be provided. Once you begin the session, please continue until all questions are complete and you reach the stop sign. This session will take approximately 15-20 min. to complete.

Participants will experience three experimental tasks during each assessment session. First, while watching each assessment session video clip, participants will collect ABC data. Participants will read the following instructions: "Please describe your observations of the student's problem behavior shown in the video from the available options in the chart below. Please select as many as apply." Participants will complete a total of 12 ABC data collection trials with three videos for each function, presented in a randomized sequence. For each trial, participants will select the antecedent(s) and consequence(s) from the options presented on a structured ABC chart (see Figure 1).

Next, we developed the Functional Identification Task to ensure participants learn to analyze completed ABC data charts, detecting the pattern in multiple ABCs as opposed to using a single instance of behavior to hypothesize behavioral function. Participants will read the following instructions at the start of this task: "Now, please review this ABC chart detailing several descriptions of student problem behavior. Based on the ABC chart

presented, please select the reason why the student is being [insert problem behavior]?” Participants will complete five function identification trials, including one trial (i.e., one ABC chart) per function and one additional trial with a randomly selected function, per assessments session. On each Function Identification trial, participants will select the correct response from the five response options provided.

Lastly, in the Intervention Selection Task, participants will be asked to select a function-matched intervention to address problem behavior when supplied with the hypothesized function in the form of a summary statement. Participants will read the following instructions at the start of the task: “Now, you will read a brief description of student problem behavior. Based on that description, please select the best ways to address the problem behavior from the options available.” Participants will complete five intervention selection trials per assessment sessions, with 1-2 trials per each behavioral function, presented in a randomized order. Participants will respond by selecting up to 1-2 correct (function-matched) interventions out of the five options provided per trial.

Interactive Computer Training (ICT)

The first module in the ICT begins with the following instructions:

In this session, you will complete a training module on understanding problem behavior. All training modules will include lecture, example videos, and 7-13 questions intended to assess your knowledge of the content covered. Because the modules are designed to train you to better understand student problem behavior, you will receive feedback automatically on each question that you complete within the module. If

you answer a given question correctly, you will proceed to the next section of the module. If you do not answer correctly, you will re-watch a section of the training module before trying the question again. At the end of this module (after sections 1A, 1B, & 1C), you will complete a 10-question quiz to assess your mastery of the content. You will not receive feedback on your quiz responses. If you score 80% or better (8/10 questions correct) on the module quiz, you will advance to the next module in the training (Module 2). If you score below 80% on the module quiz, you will repeat this module before attempting the quiz again. Remember, once you begin the session, please continue until all items are complete and you reach the stop sign. This session will take approximately 15 mins to complete.

Participants will complete the three ICT modules during individual sessions (Table 2). Participants will proceed through each session of the module as they answer questions correctly. Questions answered incorrectly will direct participants to repeat the corresponding section before attempting to answer the question again. Participants will complete a 10-question quiz at the end of each module and will need to score 80% or better in order to proceed. If participants score below 80%, they will be required to repeat the module before attempting the quiz again. The ICT phase will end after participants complete all three module quizzes with a score of 80% or above.

Table 3*Topics Covered in Each Module of the Interactive Computer Training (ICT)*

ICT Module	Topics
1. ABC Data Collection	<ul style="list-style-type: none"> • Define problem behavior • The behavior-environment relationship • Introduce function, antecedents, behavior, and consequences • Provide textual and video ABC examples • Introduce the structured ABC data sheet • Model use of a structured ABC data sheet using four videos of individual ABC contingencies
2. ABC Data Analysis and Behavioral Function	<ul style="list-style-type: none"> • Describe the four basic behavioral functions (attention, access, escape, sensory) • Provide written and video examples of contingencies that would indicate each function • Model analyzing four completed ABC data charts
3. Selecting Function-based Interventions	<ul style="list-style-type: none"> • The effectiveness of function-based interventions • Antecedent-based interventions • Consequence-based interventions • Differential reinforcement interventions • Practical considerations when selecting an intervention

Post-training Assessment Sessions

Procedures for the post-training assessment sessions will be the same as in the baseline assessment sessions. However, based on performance, participants will complete 3-6 post-training assessment sessions. Participants that receive a composite score of 80% or above will advance to the next post-training assessment session. If a participant receives a composite score below 80% on any of the final three post-training assessment sessions after repeating the ICT, they will receive performance feedback, either in-person or remotely via Zoom. After meeting the mastery criteria for each of the content areas, participants will proceed to the post-training generalization probes.

Performance Feedback

Future experimenters will provide performance feedback to participants who do not achieve a composite score of 80% correct or above on the final three post-training assessment sessions after repeating the ICT. During this condition, the experimenter will simultaneously watch assessment sessions with the participant, in-person or remotely via Zoom. While watching, the experimenter will pause after each assessment video to guide the participant to complete trials in the ABC Data Collection Task. The experimenter will guide the participant through each section (e.g., “What happened right before the student’s [insert problem behavior]? This is the antecedent.” “What happened right after the student’s [insert problem behavior]? This is the consequence.”). The experimenter will provide specific praise for each correct response and corrective feedback following an incorrect response. Corrective feedback will include prompting the participant to rewatch the relevant section of the assessment video before attempting to score the instance again. Participants will be allowed to ask clarifying questions throughout the performance feedback sessions and will receive brief responses, referring to information covered in the ICT.

In the Function Identification Task, the experimenter will again provide specific praise for each correct response and corrective feedback following an incorrect response. Corrective feedback will include reviewing the descriptive data in the ABC chart, discussing what function each instance of problem behavior indicates (e.g., “If the student is not getting any attention from the teacher, then they are disruptive, and the teacher provides attention by reprimanding them, what might this indicate about why problem behavior is happening?”), and then determining the likely function from the

overall pattern of problem behavior (e.g., “What’s the function indicated the most often in these ABCs?”). During the Intervention Selection Task, the experimenter will provide corrective feedback by describing why the selected intervention does not match the function of the problem behavior or because it is not actually an intervention. They will then prompt participants to select a different response that targets the function provided by using one of the strategies covered in the ICT (e.g., antecedent-based intervention, consequence-based intervention, differential reinforcement intervention).

After completing three performance feedback sessions, participants will attempt an additional 3-6 post-training assessment sessions. This process will be repeated until participants are able to achieve a composite score of 80% or better across three consecutive assessment sessions or are unable to demonstrate proficiency in the post-training assessment session that follows the second set of performance feedback sessions, whichever comes first. Experimenters may terminate participation early if participants score below 80% composite scores on any post-training session following six (i.e., two sets of three) performance feedback sessions.

Post-training Generalization Probes

Once participants have met the mastery criteria in the post-training assessment sessions, they will complete four post-training generalization probes. The purpose of this phase is to assess if participants generalize the content trained in the ICT to longer videos with multiple instances of problem behavior. The first post-training generalization probe session will begin with the following instructions:

In this session, you will watch a video depicting a series of common student-teacher interactions. As you watch the video, pay attention to the student's problem behavior, indicated with the red arrow. In this video, the problem behavior you will see is disruptions. After the video, you will answer a series of questions about the student's problem behavior and how to address it. It may be helpful to pause the video after each instance of problem behavior and make a note of your observations to use on the questions that follow. Because we are attempting to assess your current level of understanding on the training topics, no feedback on correct or incorrect responses will be provided. Once you begin the session, please continue until all questions are complete and you reach the stop sign. This session will take approximately 15-20 mins to complete.

Post-training generalization probes will follow the same procedures as baseline generalization probes. Participants will see the following additional instructions at the start of each post-training generalization session:

Once you begin this session, please try to complete it and the remaining session(s) that follow as soon as possible, ideally close together in time.

Each session will require approximately 15-20 minutes and you have three sessions remaining, including this session.

The session will end after participants complete the four generalization probe sessions (one per function) regardless of performance. Participants will then proceed to the social validity questionnaire.

Social Validity

Following their final post-training generalization probe, experimenters will ask participants to complete a social validity questionnaire (Appendix C). We developed the social validity questionnaire to assess participants' general perceptions of the acceptability and applied utility of the ICT. We modified this questionnaire from The Training Acceptability Rating Scale (TARS-1: Davis et al., 1989; TARS-2: Milne & Noone, 1996, pp. 140–141). Participants will read the following instructions at the start of the session:

Now that you've completed the study, we're interested in hearing about your experiences with the computer-based training and the training content. Since this information will be used to improve future trainings, we appreciate your candid opinions. However, you may select to skip any items as you prefer. Once you begin this session, please continue until all questions are complete and you reach the stop sign. This is the last session, and it will take approximately 5-10 min to complete.

The project will end once participants have answered or skipped all items on the social validity questionnaire (Appendix C) with the following message: "Thank you for your participation! To show our gratitude, you will receive a \$100 Amazon gift card by email in the next 2-3 business days. We appreciate your contribution to educational research!"

CHAPTER IV

RESULTS

ICT Development & Beta Testing

We began the development process by outlining prior online behavior trainings, specifically those used in Marleau et al. (2019) and Turgeon et al. (2020), who trained parents of children with developmental disabilities to address challenging behavior using functional behavior assessment and intervention strategies. We also wanted to incorporate suggestions from Scott et al. (2018) who trained special education teachers and paraeducators to accurately collect descriptive (i.e., ABC) data using video models depicting single occurring exemplars with simultaneous events. We then identified additional components that would address some of the limitations noted in prior research and more directly apply to our target population of educators and educational support staff.

Our initial plan was to utilize an online training platform developed by Dr. Marc Lanovaz, that has been successfully utilized in prior parent trainings on function-based behavior intervention (Marleau et al., 2019; Turgeon et al., 2020). However, as the project progressed, we found that certain content could not be directly embedded to the platform. This challenge meant that participants would need to navigate multiple platforms to complete the training, an outcome we wanted to avoid. To address this, we researched alternative platforms and ultimately selected Qualtrics, an online survey software tool for our study. This decision was driven by Qualtrics' ability to integrate

various types of content into a single, cohesive platform, thereby streamlining the training process for participants and ensuring a more seamless and efficient experience.

Demographics Questionnaire

The demographics questionnaire is comprised of eight survey questions. We input the questions into Qualtrics to accurately reflect the type of question (i.e., multiple-choice or fill the blank) along with the corresponding response options, including the option to skip each question. The survey is designed to progress through the session using the manually programmed “Next” button until participants reach the stop sign with additional instructions at the end of the session.

Baseline and Post Training Generalization Sessions

We began developing the materials for the generalization probe sessions by outlining six operational definitions of problem behavior to be used in a series of scripted videos (see Table 1). Four of the six problem behaviors (i.e., noncompliance, property destruction, self-injury, disruption) were used only in the generalization probe videos. Based on a recommendation from Shayne and Miltenberger (2013), generalization probe videos and assessment videos were scripted to depict more complex environmental conditions often found in natural settings like schools. Each instance of problem behavior was designed to contain specific environmental antecedents and consequences and, collectively, all instances depicted on a given generalization probe video indicate one basic function (i.e., attention, access, escape, sensory). The videos were recorded by two BCBAs and filmed at the ASSERT clinic on the USU campus over four recording sessions. Approximately 12 children of varying ages enacted the pre- and post-training

generalization and assessment session scripts with other adult and child confederate actors to create the videos. The videos were reviewed by three BCBA's to ensure the clip illustrated the intended antecedent(s), consequence(s), and behavioral function. A total of 40 filmed video clips were spliced together to create four longer videos, each comprised of 10 shorter clips using iMovie editing software. Each 3-4 min generalization video indicates the same student engaging in 10 instances of the same topography of problem behavior. The videos were edited to include closed captioning, an arrow indicating the target student participants should attend to, and a two-second black screen transition between each clip to clearly distinguish one instance from another.

Next, we converted the videos to an MP4 format and uploaded them to a private channel on YouTube. This allowed us to generate links to each generalization video that could be embedded into Qualtrics. We then created four generalization surveys through Qualtrics (i.e., one per function). Each generalization survey begins with a textual introduction and general directions. As all questions in the generalization probe sessions are open-ended, the questions were entered using the Essay Text Box question type with a forced response setting and "Next" button (see Figure 4). Individually programmed timers are embedded throughout the session to prevent participants from advancing before the video is finished. The four surveys were then linked together and programmed to randomize the order in which participants complete the sessions. We then conducted extensive testing to ensure the usability and functionality of each embedded component.

Figure 4*A Screenshot of One Trial in the Generalization Probe Session*

Please watch the video below. The target problem behavior is **property destruction**.

Property destruction is defined as the student damaging materials or property and will include swiping materials from the desk or walls, ripping or breaking materials, throwing materials (not at a person), and causing damage to the classroom environment (e.g., walls, desks, doors).



Please describe your observations of the student's problem behavior in the video. You have up to 10 min (after the video) to type your response.

Baseline and Post Training Assessment Sessions

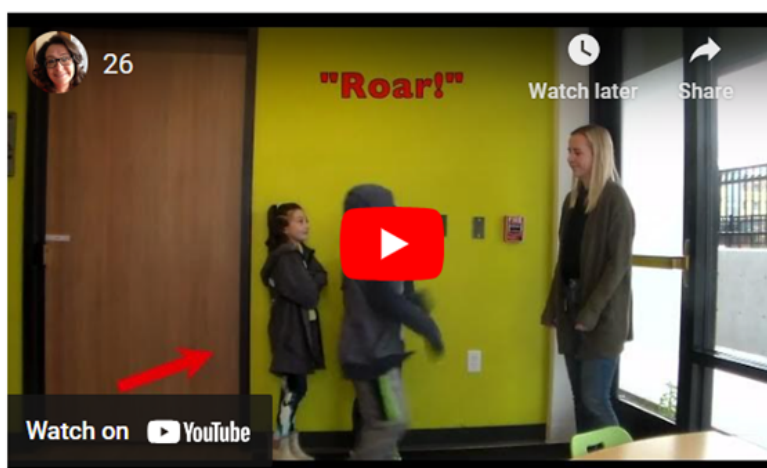
The baseline and post training assessment sessions are comprised of three tasks, each undergoing a unique development process requiring specialized programming. The tasks were originally created and tested in separate surveys and combined once each section was finalized.

For the ABC Data Collection Task, we used the previously outlined operational definitions to create video scripts that indicated different target behaviors than those used in the generalization probe videos. Assessment session videos are similar to those used in the generalization probes but utilize different individuals acting out single instances of various problem behaviors, instead of the same student engaging in multiple instances of the same problem behavior. A total of 60 short (10-30 s) assessment videos were filmed, however two of the videos were excluded as they did not clearly depict the necessary contingencies. The remaining assessment videos were embedded into another Qualtrics survey using links generated by the video conversion process outlined above. The survey begins with a brief introduction and instructions. Sections were then added to include 15 attention sessions, 15 automatic sessions, 14 escape sessions, and 14 access sessions, each with an operational definition, assessment video, and an interactive structured ABC chart (see Figure 5).

Figure 5

A Screenshot of One Trial in the ABC Data Collection Task Assessment Session

Please describe your observations of the student's problem behavior shown in the video from the available options in the chart below. The problem behavior you will see is **noncompliance (failure to follow instructions)**.



What happened before? Antecedent(s)	Problem Behavior	What happened after? Consequence(s)
<input type="checkbox"/> Little/no individual attention <input type="checkbox"/> Given an instruction <input type="checkbox"/> Preferred item/activity removed/denied <input type="checkbox"/> Alone/no social interaction <input type="checkbox"/> None of these	<input type="checkbox"/> Disruption <input type="checkbox"/> Inappropriate language <input checked="" type="checkbox"/> Noncompliance <input type="checkbox"/> Property destruction <input type="checkbox"/> Aggression <input type="checkbox"/> _____	<input type="checkbox"/> Teacher/peer attention <input type="checkbox"/> Teacher/peer stops interacting <input type="checkbox"/> Access to preferred item/activity <input type="checkbox"/> Instruction/task removed/delayed <input type="checkbox"/> Instruction/task not removed <input type="checkbox"/> Alone/no social interaction <input type="checkbox"/> None of these

The ABC charts were designed to mimic a structured data collection sheet allowing participants to select the relevant antecedent(s) and consequence(s) for each instance of problem behavior depicted in the assessment video. We used a specialized

question format in Qualtrics called Hot Spot to embed a picture of the ABC chart and create clickable regions next to each antecedent and consequence that could then be assigned a value for scoring purposes. Additionally, we had to determine how best to score the charts as the total number of correct responses varied per chart. For example, some trials have only one correct antecedent and one correct consequence depicted, while others have two or three. Therefore, in order to generate a composite score, we needed to sum both the participant scores as well as the total possible score for each ABC Data Collection trial. To do this, we used a separate section of Qualtrics called Survey Flow to program the survey to collect data for each ABC scenario (see Figure 6). Additionally, the Survey Flow feature was used to program the survey to display one ABC Data Collection trial per function (i.e., attention, access, escape, sensory). A fifth trial was randomly selected from a duplicated set of mixed function trials (i.e., all trials combined), in a randomized sequence for each assessment session (see Figure 7).

Figure 6

A Screenshot of One ABC Data Collection Trial Data Collection Using Survey Flow in Qualtrics

The screenshot displays two panels in the Qualtrics Survey Flow editor. The top panel, titled "Then Branch If:", contains a list of ten conditional statements, each starting with "Please describe your observations of the student's problem behavior shown in the video from the a..." followed by a specific condition name and status. Each statement includes an "Edit Condition" link. The conditions listed are:

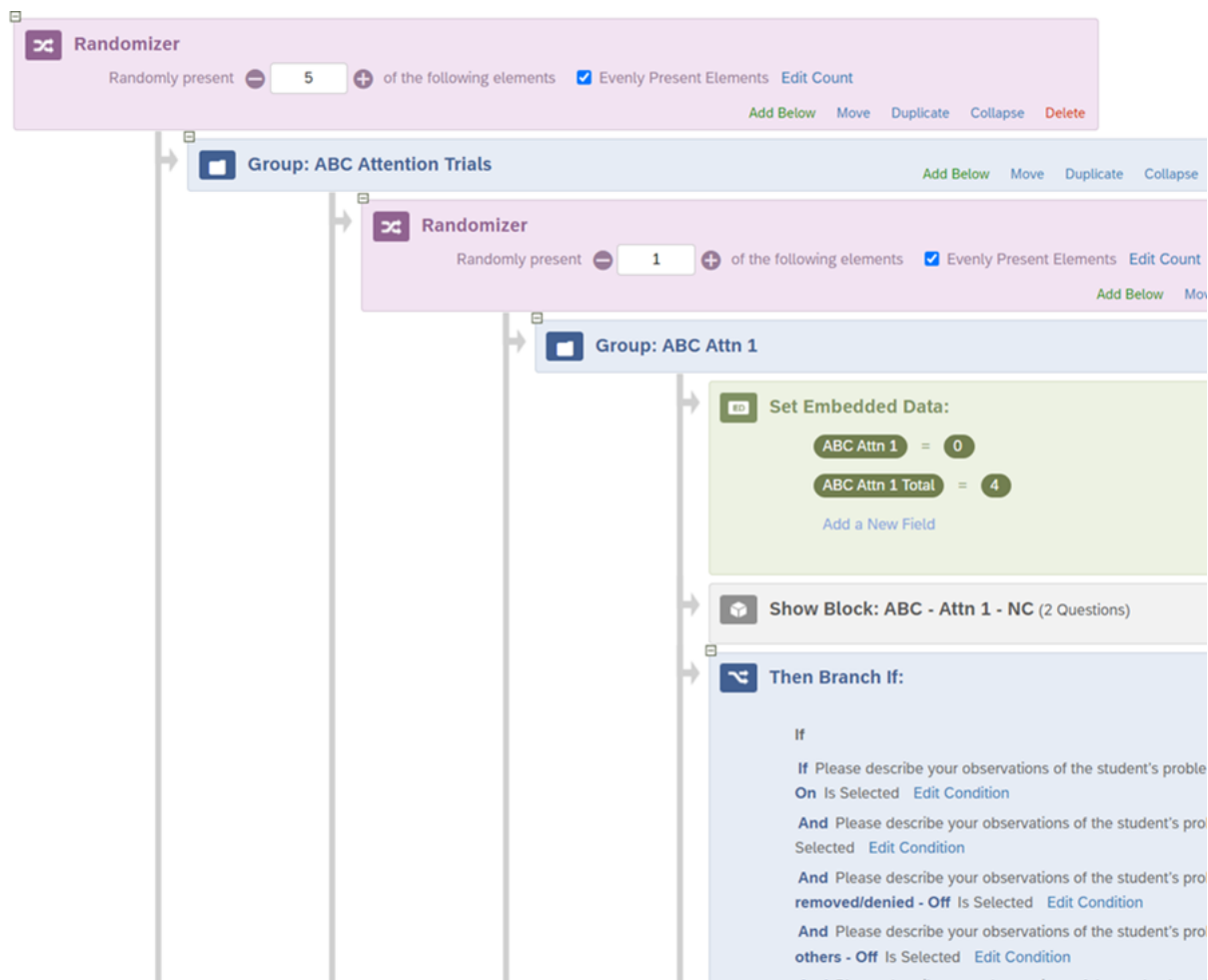
- A: Little or no individual attention - On** Is Selected
- A: Given an instruction - On** Is Selected
- C: Teacher or peer attention - On** Is Selected
- C: Instruction/task not removed - On** Is Selected
- A: Preferred item/activity removed/denied - Off** Is Selected
- A: Alone/no interaction with others - Off** Is Selected
- A: None of these - Off** Is Selected
- C: Teacher or peer stops interacting with student - Off** Is Selected
- C: Access to preferred item/activity - Off** Is Selected
- C: Instruction/task removed/delayed - Off** Is Selected
- C: Alone/no interaction with others - Off** Is Selected
- C: None of these - Off** Is Selected

At the bottom right of this panel are the actions: Move, Duplicate, Options, Collapse, and Delete.

The bottom panel, titled "Set Embedded Data:", shows a data field configuration. It contains a field named "ABC Attn 1" with a value of "4". Below the field is a link "Add a New Field". At the bottom right of this panel are the actions: Add Below, Move, Duplicate, Add From Contacts, and Op.

Figure 7

A Screenshot of One ABC Data Collection Trial Randomization Using Survey Flow in Qualtrics



For the Function Identification Task, we created seven narrative ABC charts per function (28 total). Each ABC chart provided a textual description of five instances of the same topography of problem behavior. We designed these ABC charts so that the majority of the instances of problem behavior described (i.e., three to four of the examples) on a given chart indicate one of the four basic behavioral functions. We uploaded screenshots of the ABC charts and embedded them into a separate Qualtrics survey. Each ABC chart includes one question and was entered using the Multiple-Choice question format with only one correct option per chart (see Figure 8). As there are five assessment sessions in this task, the Survey Flow feature was used to program the survey to present one ABC chart per function. Additionally, the fifth chart was randomly presented from a duplicated set of mixed function charts (i.e., all trials combined). In order to automatically collect quantitative data, a numerical value is assigned to response options using the advanced scoring function in Qualtrics (see Figure 9). Each question can be assigned a score, with different values allocated to various answer choices. For example, correct answers might be assigned a score of 1, while incorrect answers receive a score of 0. The platform then automatically calculates the total score for each participant based on their answers. The scores can be analyzed within Qualtrics or exported for further analysis into an excel spread sheet.

Figure 8

A Screenshot of One Trial in the Function Identification Task Assessment Session

Based on the chart below, please select the reason why the student is being **noncompliant (failing to follow instructions)**?

What happened before? Antecedent(s)	Problem Behavior	What happened after? Consequence(s)
Students are completing a worksheet at their desks and the teacher offers help to another student.	Student yells "Noooo! I can't do it!" and starts to cry.	Teacher walks to student's desk and says "We often have to do things we don't like. Here, let me help you."
Teacher says "Recess is over" and peers begin to leave the playground.	Student stops walking and starts to cry.	Teacher says "Time to come in" and then begins talking to other students who are lined up.
Teacher announces "It's math time!"	Student yells "Noooo! I don't want to do math! No math! Never!" and starts to cry.	Teacher puts their hand on the student's shoulder and says "It's alright, you're good at math."
Teacher announces it is time to choose a story to read.	Student cries, flops to the floor, and yells "Noooo! I hate reading!"	Teacher walks over to the student and says "It's just a simple story. Come on, I'll help you pick one."
Teacher says "It's time to pack up to go home!" while helping another student pack up.	Student stands at desk and starts to cry.	Teacher continues helping the other student pack up and says "Everyone, be sure to grab your reading folders from your cubby!"

To get attention from teacher or peers

To gain access to items or activities

To create a pleasant sensation or relieve pain or discomfort

To get out of an unpleasant task, work, or situation

None of these

Figure 9

A Screenshot of One Function Identification Trial Data Collection Using the Advanced Scoring Feature in Qualtrics

FxID - Based on the chart below, please select the reason why the student is tantruming (crying, yelling)?
AccessTant

What happened before? Antecedent(s)	Problem Behavior	What happened after? Consequence(s)
Student walks past teacher with a toy from home. Teacher says "You can't bring your toy to recess. It shouldn't even be at school!" and takes the toy away.	Student starts crying and yells "I want my toy!"	Teacher says "fine you can keep the toy, but next time don't bring it to school" and gives the toy back.
Student asks teacher if they can bring their book outside and teacher says "You have to wait 5 minutes while I help someone else."	Student starts crying and says "But it's my book! I should get to decide when I want to read it!"	Teacher says "Well... alright. It is your book."
Teacher says to student "You can use your crayons to color in the picture on the back."	Student cries and yells "I want the markers!"	Teacher says, "No one is using markers" and walks away.
Students are playing together on the rug and a peer grabs a toy car away from the student	Student yells "Teacher, teacher! They took my car! That one was mine!"	Teacher requires the peer to provide the student with the toy car.
Student is playing a game on the iPad/tablet. Teacher walks past and takes the students tablet away and says, "it is silent reading time."	Student starts crying "I want to play my game!"	Teacher gives back the iPad/tablet.

Clear

1

To gain access to items or activities

0

To get attention from teacher or peers

0

To get out of an unpleasant task, work, or situation

0

To create a pleasant sensation or relieve pain or discomfort

0

None of these

In the final assessment task, the Intervention Selection Task, we created 28 written summary statements (i.e., seven per function) describing problem behavior serving a particular function. For example, “When the teacher pays attention to peers, the student hurts themselves, which results in teacher attention. Please select the best way(s) for the teacher to address the problem behavior described.” Using the Multiple-Choice question format, each statement is paired with four response options indicating varied behavioral strategies, as well as a “none of these” alternative. For each Intervention Selection Trial, 0-2 correct responses are possible per chart (see Figure 10). The intervention options presented were chosen from a list of 15 interventions used in prior research (Marleau et al., 2018; Shayne & Miltenberger, 2013) with adapted wording for our target participant group. The list includes antecedent-based, consequence-based, and differential reinforcement interventions that are appropriate for each basic function as well as options that are either contraindicated based on function (i.e., inadvertently reinforce the problem behavior) or are not actual interventions. As with the previous task, we used the advanced scoring function to re-code the scoring values by assigning a numeric score to each response. Sessions were then randomized using the Survey Flow feature to include one intervention selection trial per behavioral function and one trial from an additional set of mixed function summary statements.

Figure 10*A Screenshot of One Trial in the Intervention Selection Task Assessment Session*

When the teacher isn't paying attention to the student, the student uses materials inappropriately, which results in teacher attention. Please select the best way(s) for the teacher to address the problem behavior described. **Select all that apply.**

- The teacher will explain to the student why their behavior is wrong immediately after the problem behavior occurs.
- The teacher and/or peers will give the student more attention throughout the day.
- The teacher and/or peers will give the student attention following appropriate bids for attention or other instances of appropriate behavior.
- The teacher will offer a choice of items and activities that produce similar types of sensory stimulation as that produced by the problem behavior.
- None of these

The final step was to combine the three assessment tasks into one survey.

Unfortunately, not all programmed settings transition over when content is copied from one survey to another. Because of this limitation, when we combined the three assessment session tasks, we needed to rescore each assessment task using the advanced scoring function as outlined above. The total composite score for all three assessment session tasks involved programming logic that would combine the scores from the advanced scoring feature with the embedded data in Survey Flow. We then duplicated the completed survey to use for the post training assessment session and updated the question numbers so that exported data would accurately reflect the experimental phase.

Interactive Computer Training (ICT)

We created nine (i.e., three per module) PowerPoint presentations for the interactive training modules. Each presentation was scripted and recorded with a voice over lecture. The presentations were edited to include approximately 24 video clips embedded with closed captioning. Once the narrated presentation slides were finalized, they were spliced into sections ranging from 30 s and 12 min so they could be presented in sequence with module quiz questions. We then exported the training videos as MP4s and uploaded them to a private YouTube channel. This was done to generate links that could be embedded within Qualtrics.

Separate surveys were created for each of the nine training sessions. Sections were entered in sequential order using a Qualtrics feature known as "blocking." Survey blocks are used to organize and systematically present various segments of content (see Figure 11). Customization of each block is facilitated through a selection of question types (e.g., multiple-choice, text entry), allowing the block to be uniquely formatted to suit its embedded content. Additionally, the settings of each block are adjustable, providing functionalities such as question randomization, the inclusion of formatted navigation buttons (e.g., back, next), and the integration of timers to control the pace at which content is displayed (see Figure 12). Each block is labeled to reflect the content, allowing sections to be easily rearranged and minimized.

Figure 11

A Screenshot of the Survey Blocking Process in Qualtrics

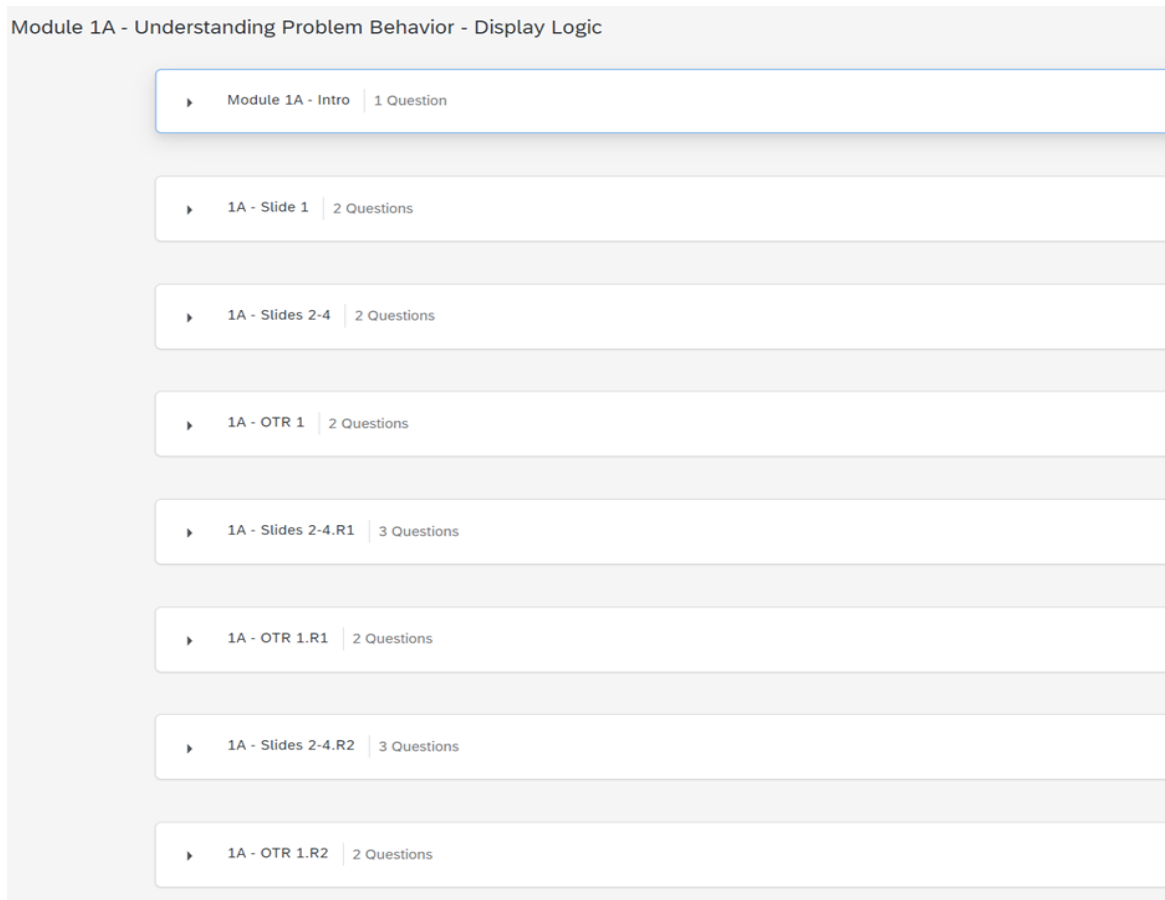
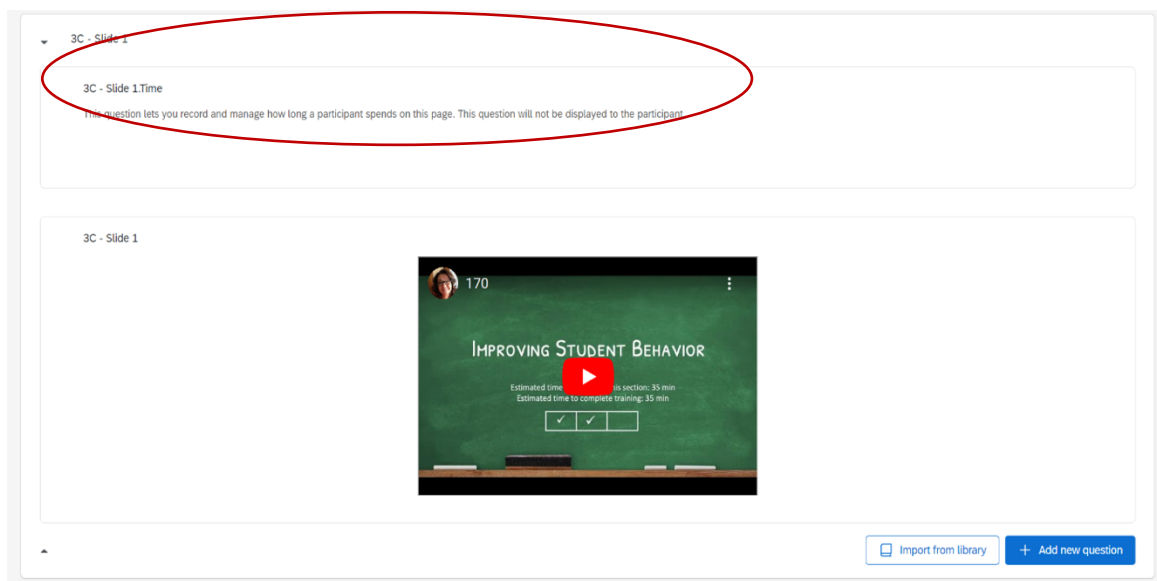


Figure 12

A Screenshot of the Customizable Timer Setting in Qualtrics



While developing the training presentation videos, we also formulated 91 within-module questions designed to check for participants understanding of the content as they progress through each session. We varied the format of questions to include multiple-choice, multiple-answer, true/false, matching, and fill-in-the-blank question types. Within-module quiz questions were entered into each of the nine training surveys in sequential order following the corresponding presentation block.

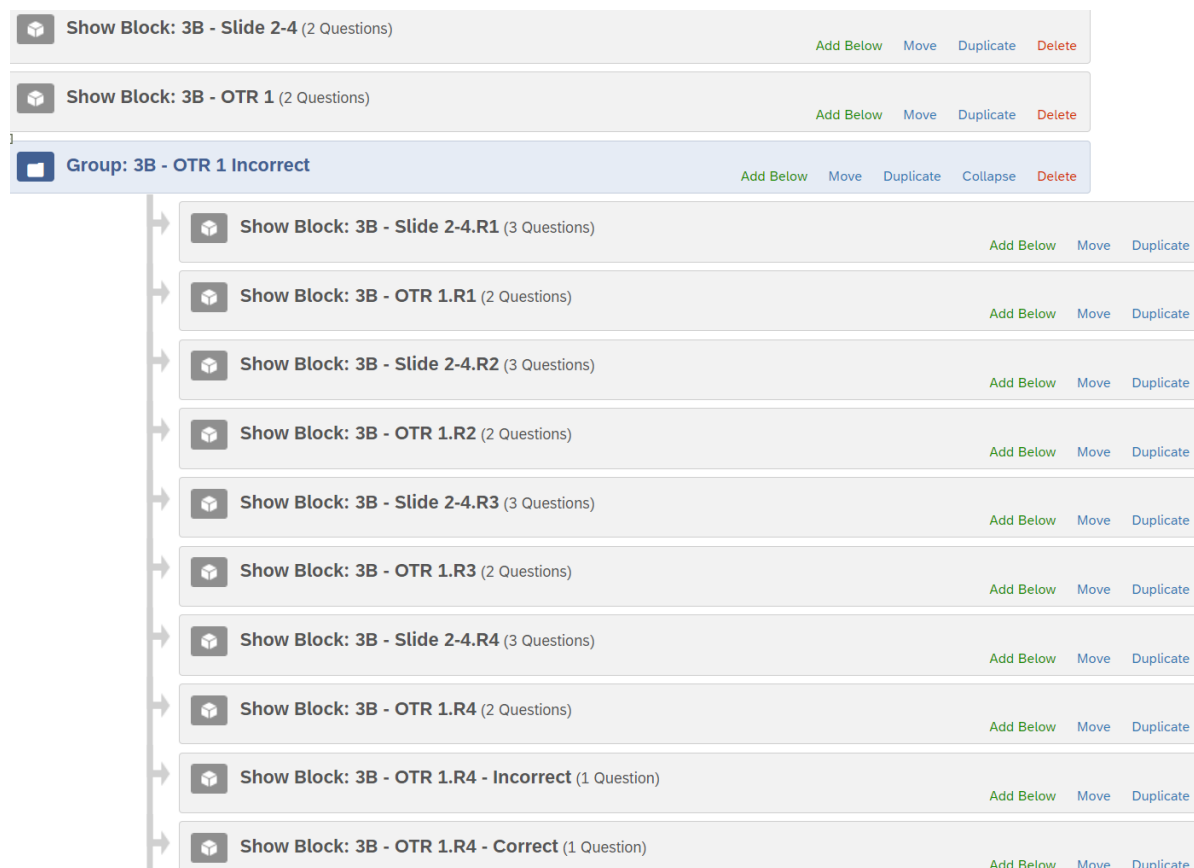
The Qualtrics training surveys are programmed to proceed to the next presentation block following correct responses to within-module questions. However, if participants answered a question incorrectly, the survey needed to be programmed to repeat the previous training video segment before allowing the participant to attempt the question again. While Qualtrics does offer a Loop and Merge feature, it proved inadequate for our needs. For example, when participants repeated a within-module

question after an incorrect response, the survey displayed the question with their previously selected answer but editable, rather than presenting the question again blank. Moreover, the score for each new attempt overrode the previous response. This limitation prevented us from collecting critical within-session responding data, such as the number of attempts per question or the time required for each attempt.

We addressed this limitation by creating a series of five duplicate blocks after each within-module quiz question (Figure 13). Using the Display Logic feature of Qualtrics, duplicate blocks were programmed to only appear in response to incorrect responses. Every within-module question permits up to five total incorrect attempts before the correct answer is displayed and the participant is allowed to continue to the next section. Each duplicate block was repeatedly tested to ensure that all variations of correct and incorrect responses progressed or repeated as intended for the nine sections of the training modules.

Figure 13

A Screenshot of Programming Duplicate Blocks in Qualtrics



An additional 60 questions were created for three end of module quizzes and will be used to assess the participants mastery and retention of material discussed throughout the three training sessions. Each quiz is comprised of 20 content and application-based questions corresponding to each module. After completing a module, the training is programmed to randomly select 10 questions each time a participant accesses the quiz. All quiz questions were scored using a combination of the Qualtrics Scoring and Survey Flow functions to generate a quiz score for each module. After completing a quiz, the training displays a participant's quiz score with a slide indicating if they passed.

Additionally, the training was designed to automatically link participants to the first session in the next module if they score 80% or better on the quiz while returning those who scored below 80% to the beginning of the same module.

Social Validity Questionnaire

In Qualtrics, the social validity questionnaire survey is programmed to display the final session instructions followed by 24 questions designed to assess participants' general perceptions of the acceptability and applied utility of the ICT. Questions 1-11 and 15-22 were entered into a separate Qualtrics survey using a Matrix Table format to allow for a Likert scale response (see Figure 14). The remaining questions were entered using an Essay Text Box format which allowed for open-ended response. Additionally, the option to skip questions was embedded throughout the session.

Discussion

Although we have not yet had the opportunity to collect data for this project, our lab is currently recruiting participants to examine the effectiveness of the ICT on functional behavior assessment and intervention selection skills. Should the ICT be used to demonstrate sufficient behavioral skill acquisition and generalization into applied settings, results would add to the growing body of research suggesting that ICT can be an effective and efficient means of teaching behavioral strategies. Such findings would be especially applicable in rural and educational settings with minimal resources that lack qualified training personnel in addition to densely populated settings, such as a large clinic or school district, that often have large scale training needs. Such positive results may help to provide a solution for the ongoing need for systematic, high-quality instruction in behavior-analytic assessments and interventions, ultimately leading to improved outcomes for students in public education settings.

Limitations

We are currently using a modified version of our training protocol within Qualtrics to gather preliminary data, as we navigate two technical challenges that hinder the full functionality of our project's Qualtrics surveys. The first issue pertains to a complication in participants' ability to resume their training in Qualtrics after logging out. The original design of the training aimed to accommodate breaks between sessions by allowing participants to save their progress and seamlessly return to their last point of engagement using one "master link". However, whenever a participant attempts to resume the training by signing in with the authenticator, they are redirected to the

beginning of the study. This necessitates repeating any previously completed sessions, resulting in dual entries for that phase of the training.

The second remaining technological flaw is that Qualtrics does not automatically assess the composite score across multiple consecutive assessment sessions to determine if a participant is eligible to proceed to the next phase of the training. Consequently, a researcher must review these data daily by exporting files from the relevant surveys in Qualtrics and make informed decisions about if and when a participant should proceed. To circumvent these limitations, we have devised an interim solution. Participants will receive a sequence of documents as they progress through the assessment and training sessions. These documents will include their login credentials, concise instructions, and direct links for accessing each phase of the project. This approach ensures participants can navigate through the sessions efficiently while we work towards resolving these remaining technical issues.

Next, while Qualtrics offers some advanced, user-friendly features not readily available in platforms like Adobe Captivate and Canvas, it still faces significant limitations. For example, not every question format in Qualtrics is supported by the scoring feature which can be used to automatically assign a numeric score to survey responses. This means that certain types of questions need to be programmed using Survey Flow, which can be time-consuming and prone to human error. Additionally, there's a notable issue with the scoring system in Qualtrics. When surveys are combined or duplicated, any previously programmed scoring values reset and require reprogramming. This can be a cumbersome process, especially for extensive surveys or those with complex Survey Flow scoring algorithms.

Additionally, one of the more prominent limitations of Qualtrics lies in its programming capabilities, particularly its inability to facilitate content looping. Content looping is a feature that allows for the repeated presentation of certain survey elements based on specific criteria of participant responses. The absence of this feature in Qualtrics restricts the functionality of survey development, particularly in scenarios where repeated exposure to the content is necessary or when the training progression depends on a participant's previous answer. This limitation necessitates finding alternative methods to replicate the looping functionality, which can lead to more complex survey designs.

Another limitation of our project is the lack of external validity, as we do not plan to assess whether the trained skills would effectively generalize and maintain in applied settings. However, the generalization videos intentionally utilize child actors in a school-based setting in an attempt to mimic realistic conditions as closely as possible. Additional research is needed to understand the extent to which the skills targeted in our training effectively generalize to different conditions.

Finally, we significantly underestimated the amount of time and expertise required to develop such a complex training. For example, the integration of diverse multimedia elements, like embedded videos and interactive assessments required a profound grasp of technical development, especially in programming accurate data collection and scoring systems. Additionally, we needed to ensure that the research-based content was not only engaging but also appropriate for our target population. Moreover, there was a significant need for ongoing testing and refinement of both the assessment sessions and training modules, to assess that they were programmed correctly and stayed within our originally outlined time parameters.

The increasing demand for high-quality, yet cost-effective training solutions highlights an essential need for expanded research into the capabilities and user experience of online training platforms. Future research should aim to compare the strengths and weaknesses of various platforms in different educational and training contexts. For example, studies could explore the adaptability of these platforms in handling diverse content types, their capacity for data collection and analysis, and the ease with which users can navigate and interact with the training material. Such comprehensive evaluations would not only assist in identifying the most suitable platforms for specific training needs but also guide developers in enhancing these platforms for improved educational outcomes.

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APPENDICES

Appendix A: Demographics Questionnaire

Instructions: In the following questions you will be asked to provide basic personal information. Any information you provide will be anonymized (i.e., assigned a participant number) and will only be used to describe who participated in the study. If you prefer not to answer a demographic question, please select “Prefer not to answer” to proceed.

1. How old are you? _____
2. How would you describe your gender identity? Please select from the options below:
 - a. Female
 - b. Male
 - c. Transgender female
 - d. Transgender male
 - e. Gender non-conforming or not listed
 - f. Prefer not to answer
3. Are you of Hispanic, Latino, or of Spanish origin?
 - a. Yes
 - b. No
 - c. Prefer not to answer
4. How would you describe your racial/ethnic background? Please select from the options below:
 - a. American Indian or Alaska Native
 - b. Asian
 - c. Black or African American
 - d. Native Hawaiian or Other Pacific Islander
 - e. Multiracial
 - f. White
 - g. Not listed
 - h. Prefer not to answer
5. What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.
 - a. Bachelor's degree
 - b. Master's degree
 - c. Professional degree
 - d. Doctorate degree
 - e. Prefer not to answer
6. How many years have you worked in education? _____
7. What grade levels do you currently work with? Please select all that apply.
 - a. K

- b. 1-3
- c. 4-6
- d. 7-9
- e. 10-12
- f. Post High
- g. Prefer not to answer

Appendix B: List of Interventions for the Function Identification Task

Instructions: Please select the three best choices for possible intervention options for the problem behavior observed in the video.

1. The teacher will give the student more attention throughout the day or will arrange for peers to regularly provide attention throughout the day. (Attention)
2. The teacher will ensure the task is appropriate to the student's skill level and/or temporarily reduce the work requirement before problem behavior occurs. (Escape)
3. The teacher will frequently provide clear expectations and rules about when/where/under what circumstances the student can have access to the preferred item/activity. (Access)
4. The teacher will teach the student to keep busy during down times. (Sensory)
5. When problem behavior occurs, the teacher will let the student take a break from the task in order to calm him/her down. (Contraindicated for escape)
6. The teacher will explain to the student in detail why his/her behavior is wrong immediately after the problem behavior occurs. (Contraindicated for attention)
7. The teacher will offer a choice of items and activities that produce forms of stimulation similar to that generated by the problem behavior. (Sensory)
8. The teacher and/or peers will ignore (or limit) the attention they provide to the student following instances of the problem behavior. (Attention)
9. The teacher will no longer allow the student to escape from the task following instances of the problem behavior. (Escape)
10. The teacher and or peers will no longer allow the student access to the preferred item following instances of problem behavior. (Access)
11. The teacher and/or peers will give the student attention following appropriate bids for attention or other instances of appropriate behavior. (Attention)
12. When the behavior occurs, the teacher will interrupt and redirect the student to do another activity. (Sensory)
13. The teacher will provide help with/break from the task after the student appropriately asks for help/break or other instances of appropriate behavior described to the student in advance. (Escape)
14. The teacher and/or peers will give the student access to the preferred item after instances of appropriate requesting for the item or other instances of appropriate behavior which were clearly described to the student in advance (Access)
15. The teacher and/or peers will let the student have a preferred item following instances of problem behavior in order to calm the student down. (Contraindicated for access)

Note. All intervention options were adapted from prior research (Shayne & Miltenberger, 2013), except items 4, 7, and 12, which were added by Marleau et al. (2018) as interventions options for problem behavior maintained by sensory stimulation. Additionally, language used in items 2 and 13 was adapted to emphasize function-based interventions that may be more applicable to general education classrooms. The correct and incorrect responses for each function in the Intervention Selection Task are written in parentheses and will not appear on the list when participants view it during the experiment.

**Appendix C: Modified Training Acceptability Rating Scale
(Davis et al., 1989; Milne & Noone, 1996)**

Instructions: Please tell us about your perceptions of the computer training and the content covered in the training by answering the questions below. Please rate the degree to which the statement provided applies to your experiences with the computer training on a scale ranging from 0 for Not at all to 4 for A great deal. At the end, you will have the opportunity to share additional comments.

1. The computer training was generally acceptable.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

2. The computer training was beneficial.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

3. The computer training was appropriate for educators (e.g., teachers, paraprofessionals, other school staff).

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

4. The content covered in the training was consistent with good educational practices.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

5. The computer training improved my understanding of behavioral function and how to use function to choose behavioral interventions.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

6. The computer training helped me develop function-based thinking skills.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

7. The computer training increased my confidence in function-based assessment and interventions to address student problem behavior.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

8. I expect what I learned in this computer training to be useful in addressing student problem behavior in the future.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

9. The topics in the computer training were covered completely.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

10. I was motivated to complete the computer training.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

11. Overall, I am satisfied with the computer training.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

12. What was the most helpful part of the computer training?

13. What changes could be made to improve the computer training?

14. Any other comments about the computer training you wish to share?

15. The assessment and intervention strategies trained were generally acceptable.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

16. Learning about function-based assessment and intervention was beneficial.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

17. The assessment and intervention strategies trained were appropriate for educators.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

18. If educators use the information in the computer training, it would help improve student behavior.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

19. I would use the assessment strategy trained to address student problem behavior in the future.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

20. I would use the intervention strategies trained to address student problem behavior in the future.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

21. I have sufficient time to use the assessment and intervention strategies trained in my classroom.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

22. I'm motivated to use the assessment and intervention strategies trained in my classroom.

0	1	2	3	4
Not at all	A little	Some	A lot	A great deal

23. Any other comments about the content (the assessment and intervention strategies) covered in the training you wish to share?

24. Any other remaining comments you wish to share?