Further Development of a Supervision System for Behavior Analysts to Support Evidence-Based Supervision Practices

Katie Lynn Garza

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FURTHER DEVELOPMENT OF A SUPERVISION SYSTEM FOR BEHAVIOR ANALYSTS TO SUPPORT EVIDENCE-BASED SUPERVISION PRACTICES

by

Katie Lynn Garza

A dissertation submitted to the Graduate College in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Psychology
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Effective supervision for individuals seeking certification from the Behavior Analyst Certification Board® (BACB) has been a recent focus in the field of behavior analysis (BACB, 2012). While the organizational behavior management (OBM) literature is rich with evidence for specific performance-improvement techniques, there is a lack of research on supervision systems specifically for supervising individuals seeking to obtain the Board Certified Behavior Analyst (BCBA) credential. Furthermore, studies to date have not examined what it takes for systems to meet their missional objectives while simultaneously providing training and supervision to trainees. This descriptive, process-oriented study sought to analyze the disconnects within a specific university practicum that provided training to both undergraduate and graduate students. Graduate practicum students who received training in the system also completed their supervised experience toward BCBA certification there. After the disconnects were analyzed, steps were taken to improve them, beginning with the creation of a job model and materials to support the training and supervision of multiple performances identified in that job model (Garza et al., 2017). System improvement efforts were made within multiple subsystems of the broader training system, including a preliminary practicum, undergraduate practicum training system, a practicum support system, and a graduate practicum training system. Efforts were coordinated to avoid redundancies and ensure that effects of changes on each sub-system
were accounted for. Satisfaction measures were collected at multiple levels within the system. Results are discussed with respect to Garza and colleagues’ (2017) proposed process for carrying out supervision.
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Katie Lynn Garza
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INTRODUCTION

Among the requirements for becoming a Board Certified Behavior Analyst® (BCBA) is the completion of supervised experience in accordance with the Behavior Analyst Certification Board (BACB) Experience Standards (2017). Under the current Experience Standards, supervisors must hold the BCBA credential, be in good standing with the BACB, complete a 90-minute module on the BACB Experience Standards, and complete an 8-hour training on supervision prior to supervising individuals seeking certification (BACB, 2017).

The 8-hour trainings available to BCBAs interested in providing supervision must be based on the BACB’s (2012) Supervisor Training Curriculum Outline. This outline provides a task list specifically designed for supervisors, which delineates the core knowledge and skills that BCBAs should have prior to providing supervision. Among the items listed in Section II: Important Features of Supervision are, “establishment of performance expectations of both supervisor and supervisee,” “assessment of initial skills of supervisee,” “behavioral skills training of supervisee,” “review of written materials developed by the supervisee,” and “performance evaluations (formal and informal) of the supervisee” (p. 2). Other items listed as important features of supervision involve the description of how supervision will align with the BACB Experience Standards, a contractual agreement between the supervisor and supervisee, and the supervisor’s observations of the supervisee’s performance.

In addition to the standards in the Supervisor Training Curriculum Outline, the BCBA/BCaBA Task List (5th ed.) (2017) includes a section on “Personnel Supervision and Management.” This section specifies that behavior analytic supervision includes establishment of, “clear expectations for the supervisor and supervisee,” selection of “supervision goals based on assessment of the supervisee’s skills,” training of personnel “to competently perform
assessment and intervention procedures,” use of “performance monitoring, feedback, and reinforcement systems,” and evaluation of the effects of supervision (BACB, 2017, p. 5). The new Task List will be implemented in January 2022. At that time, all exams will be administered according to the new Task List, and applicants will qualify to take the exam only if they meet the requirements outlined in the BCBA/BCaBA Task List (5th ed.) (BACB, 2017).

In order for supervisors to ensure they are including all of the required components of supervision, it may be helpful to view supervision as a process with a beginning, middle, and end. Prior to beginning the supervisory relationship, the supervisor determines the roles and responsibilities of supervisees working at the supervision site to define the scope of supervision. After the supervisory relationship is initiated, the supervisor and supervisee discuss the terms of a written supervision contract and sign to indicate agreement. The supervisor then assesses the supervisee’s baseline performance of the skills that might be practiced within the supervision context. Each supervisory period—which is one or two weeks, depending on the experience category (i.e., supervised independent field work, practicum, or intensive practicum)—the supervisor provides training, conducts observations, and provides feedback (BACB, 2016). Organization and client needs influence the sequence of training throughout the supervisory relationship. Based on pre-training assessment and organization needs, the supervisor and supervisee can work together to set goals for the supervisory period. Skills for which the supervisee has already demonstrated mastery can be observed for maintenance and generalization. At the end of the supervisory relationship, the supervisor evaluates the overall progress of the supervisee, and the supervisee evaluates the supervisor’s performance. The supervisor can then use that information to set goals for professional development.
Each step in this proposed process is supported by the guidelines set forth by the BACB in their *Supervisor Training Curriculum Outline*. In addition, as detailed below, there is logical and empirical support for the use of baseline assessment, task clarification, behavioral skills training, feedback, and goal setting. Pre-training, or baseline, assessment allows supervisors to compare supervisees’ performance prior to training and supervision to that after training and supervision, which gives the supervisor a measure of the effectiveness of his or her supervisory behaviors (Kazdin, 1982). Furthermore, in the case of the supervision of individuals who are learning the skills necessary to become BCBAs, baseline measures are essential for making informed decisions about the performances in which supervisees can engage independently on the job. Element 5.03 of the BACB *Professional and Ethical Compliance Code for Behavior Analysts* states that, “behavior analysts delegate to their supervisees only those responsibilities that such persons can reasonably be expected to perform competently, ethically, and safely” (2014, p. 14). It is impossible for a supervisor to know what his or her supervisees can competently, ethically, and safely do without first observing and evaluating their performance. By knowing what responsibilities his or her supervisees can perform to mastery, the supervisor is also able to narrow the focus of performance improvement interventions (e.g., task clarification, BST, feedback, and goal setting) to the targets that are most in need of improvement.

Task clarification is often used in conjunction with other behavioral performance improvement techniques, such as feedback and goal setting; it is a logical first step to improving performance or teaching a skill for the first time. Task clarification has been used as the initial piece of intervention packages to improve the performance of a variety of professionals, including bank tellers (Crowell, Anderson, Abel, & Sergio, 1988), restaurant employees (Amigo, Smith, & Ludwig, 2008; Austin, Weatherly, & Gravina, 2005; Reetz, Whiting, & Dixon, 2016),
hospital operating room staff (Cunningham & Austin, 2007), animal trainers (Durgin, Mahoney, Cox, Weetjens, & Poling, 2014), and direct-care staff (Reis, Wine, & Brutzman, 2013). The task clarification interventions cited above involved delivering specific definitions of the desired performance to the performer and often involved distinguishing between correct and incorrect performance.

Task clarification is the first step to behavioral skills training (BST), a widely-used approach for teaching performance-based skills. The BACB’s Supervisor Training Curriculum Outline lists BST as an important feature of supervision, and specifies that, after the training, supervisors should be able to describe or demonstrate each component of BST. Ultimately, given that BST is an important feature of supervision (BACB, 2012), supervisors should be able to demonstrate its components. The steps of BST are to describe and provide instructions for the target skill [i.e., task clarification], demonstrate the target skill, provide an opportunity for the trainee to practice, provide feedback on the trainee’s performance, and repeat the practice and feedback components until the trainee reaches mastery (Parsons, Rollyson, & Reid, 2012). Supervisors are responsible for providing effective training for those skills that supervisees must perform, but for which they have not demonstrated competency (see elements 5.03 and 5.04 of the Professional and Ethical Compliance Code). Behavioral skills training has been successfully used to teach a variety of behavior analytic skills, including the implementation of functional analysis procedures (Iwata et al., 2000; Moore et al., 2002; Wallace, Doney, Mitz-Resudek, & Tarbox, 2004), discrete-trial training procedures (Sarokoff & Sturmey, 2004; Ward-Horner & Sturmey, 2008), mand training procedures (Nigro-Bruzzi & Sturmey, 2010), and single-subject research techniques (Love, Carr, LeBlanc, & Kisamore, 2013).
Like task clarification, feedback is a component of BST that has been widely studied. There is little debate about whether feedback is an effective performance improvement intervention, though its definition varies across studies, and there are disagreements on the mechanisms by which feedback changes performance (Alvero, Bucklin, & Austin, 2001). Peterson (1982) points out that feedback is a stimulus, “and therefore could have some or all of the possible behavioral effects of any stimulus” (p. 101). Regardless of its behavioral function, feedback has been used alone or as part of an intervention package in more than half of the studies in the organizational behavior management (OBM) literature (Alvero, Bucklin, & Austin, 2001).

In their *Supervisor Training Curriculum Outline*, the BACB (2012) recommends that positive feedback include contingent and descriptive praise. They also recommend that corrective feedback be provided immediately after the event needing feedback and delivered through the following process: “provide an empathy statement, describe ineffective performance, provide a rationale for desired change in performance, provide instructions and demonstration for how to improve designated performance, and provide opportunities to practice the desired performance” (p. 4). This process is essentially the same as that recommended for trainees to reach mastery through the behavioral skills training model.

There is evidence that feedback interventions yield more consistent performance improvement effects when used in conjunction with goal setting (Alvero, Bucklin, & Austin, 2001). Goal setting has been used to successfully increase cashiers’ identification-checking (Downing & Geller, 2012), increase drug store employees’ percentage of closing task completion (Fante, Davis, & Kempt, 2013), decrease office workers’ bouts of sitting for 30 minutes or longer at work (Green, Sigurdsson, & Wilder, 2016), increase a child’s use of complete
sentences and spelling accuracy (Hansen & Wills, 2014), and increase school psychologists’ billing for Medicaid revenue (Hyzba, Stokes, Hayman, & Schatzberg, 2013).

While there are many studies supporting the use of task clarification, BST, feedback, and goal setting to improve human performance, few studies have been published on the use of established performance improvement techniques to supervise trainees seeking BCBA certification. Those articles that have been published on this topic have come from only a few different research groups, and few examine the relationship between supervision practices and the resulting outcomes. Articles have been published on recommended practice guidelines and approaches to supervision (Sellers, Valentino, & LeBlanc, 2016; Turner, Fischer, & Luiselli, 2016; Hartley, Courtney, Rosswurm, & LaMarca, 2016), ethical considerations in supervision (Sellers, Alai-Rosales, & MacDonald, 2016), recommendations for conducting group supervision (Valentino, LeBlanc, & Sellers, 2016), the relationship between supervision hours, supervisor credentials, years of experience, and supervisor caseload on ABA treatment outcomes (Dixon et al., 2016), and recommendations addressing barriers to supervision (Sellers, LeBlanc, & Valentino, 2016). None of these publications examined the effects of a specific approach to supervision on data-based decisions in supervision or on supervision outcomes.

Turner, Fischer, and Luiselli (2016) present a systematic supervision model that includes strategies for maintaining ethical supervision, conducting baseline assessment of supervisee skills, teaching targeted skills, developing higher-level repertoires such as problem solving and decision making, delivering performance feedback, evaluating the supervision process, and obtaining continuing education in supervision. Turner et al.’s (2016) recommendations are consistent with those recommended here. Additionally, supervision should take place within a process consisting of multiple components. Supervision models based on the findings of
behavior analytic literature could not only help behavior analysts engage in practices consistent with their own advice but could also provide some task clarification for their responsibilities as supervisors.

The ADDIE model (analyze, design, develop, implement, and evaluate) is a widely-used approach to training that has been studied for several decades, namely in the fields of human resources and training (Piskurich, Beckschi, & Hall, 2000). The model includes an analysis to determine whether and what kind of training is needed within an organization or for a specific job role (Allen, 2006). Several years ago, a team at Western Michigan University began working to develop an 8-hour training that follows the BACB’s Supervisor Training Curriculum Outline. As the team worked to develop the training, beginning with the “analyze” phase of the ADDIE model, they hypothesized that, because supervision is often one of many job responsibilities for a single individual, and supervision alone includes many different components (discussed above), supervisors may need a system and supporting materials to facilitate the supervision process.

Consequently, the development team—which originally included several BCBAs who had experience supervising individuals seeking certification and several others with a background in OBM—sought to meet needs that were due to factors other than a lack of training.

In a survey sent out to all behavior analysts, supervisors cited lack of time and competing contingencies as barriers to assessment and training in supervision (Garza, 2017). Furthermore, 18% of participants indicated that a lack of available information or materials was a barrier to assessment in supervision. When asked to indicate their professional occupation, 85% of participants indicated professional titles aside from that of “supervisor” (e.g., consultant, clinician), and the remaining 15% of participants indicated “other” professions that may or may
not have included “supervisor.” These results support the team’s original hypothesis that a system and supporting materials would be more helpful for supervisors than training alone.

For these reasons, in addition to an 8-hour training (McGee & Garza, 2016), the team developed materials to clarify job roles and performance expectations of both the supervisor and supervisee, assist in administering and creating performance assessments and evaluations, provide prompts and guides for delivering performance feedback and setting performance goals for supervisees, and engaging in professional development activities (Garza, McGee, Schenk, & Wiskirchen, 2017) In addition, through their 8-hour training, the team introduced a process for supervision and instructions for how to use the materials in each step of the process.

The process the team developed begins when the supervisor identifies the performances that supervisees would engage in as part of their job responsibilities throughout the course of supervision. The supervisor then identifies the BACB Task List items that correspond with each job performance. The resulting document is called a job model (Garza et al., 2017) and can be used to separate the supervisee’s job roles from other roles in the organization, as well as identify key components of each job responsibility (Gilbert, 1996; Rummler & Brache, 2012). Because the BACB Task List contains 115 items (excluding the additional 48 items in the Foundational Knowledge section), and many of these items may not be practiced within every organization that provides behavior analytic services, the team recommends narrowing the focus of training to only those skills that can be practiced within the organization at which supervision will take place.

After the supervisory relationship is established, and the supervisor and supervisee both sign a supervision contract (see the BACB Experience Standards, 2017), the supervisor should administer a self-assessment to the supervisee. The assessment includes all items on the BACB
Task List that could be practiced within the organization and ratings corresponding to the supervisee’s level of experience with each item. Additionally, supervisees may rate their level of experience for each job responsibility as a whole. That way, experience levels may be analyzed molecularly, with respect to individual Task List skills, and on a more molar level, with respect to broader job responsibilities. While self-report measures are subjective, they can indicate whether a supervisee is comfortable engaging in each Task List skill. After a supervisee completes a self-assessment, his or her supervisor can refer to the job model and, for each job responsibility, determine whether the supervisee indicates that he or she can demonstrate proficiency in each of the Task List items that correspond to that job responsibility. This kind of analysis can help the supervisor tailor trainings to meet each supervisee’s specific needs.

Each supervisory period, the supervisor should determine the needs of clients in the organization. Then, the supervisor should determine which of the clients’ needs the supervisee would be responsible for meeting if she were fully trained in her job role. Additionally, the supervisor should determine the job responsibilities in which the supervisee should engage to meet the identified client needs. The supervisor should then refer to the supervisee’s self-assessment results to determine whether the supervisee indicated that she had experience engaging in the Task List items (i.e., component skills) required to complete the job responsibility without coaching. If the supervisee indicated that she had no or limited experience with the required component skills, or if she indicated that she had only engaged in the component skills with coaching from a supervisor, the supervisor should design and implement training for the relevant job responsibility. If the supervisee indicated that she had independent experience engaging in the component skills, the supervisor should directly observe the supervisee’s performance, and/or, if possible, examine permanent products of the supervisee’s
performance, to validate the self-assessment results. From there, the supervisor should determine whether to provide training or to observe the supervisee in the field to assess for maintenance and generalization of the skill.

During supervision meetings, the supervisor and supervisee should set goals and discuss the supervisee’s progress toward those goals. Per BACB standards, the supervisor must observe the supervisee in the field each supervisory period (BACB, 2017). Those observations should involve the collection of data on the supervisee’s performance. The supervisee should receive specific feedback on each performance, and feedback should be delivered with respect to the goals that have been set. Once goals have been met, new goals should be set.

For example, the supervisor may observe the supervisee in the field and determine that pacing of instruction is, on average, about two learning opportunities per minute. During the supervision meeting, the supervisor should deliver specific feedback to the supervisee. For example, “When I observed you conducting discrete trial training earlier this week, you delivered about two learning opportunities per minute. Ideally, instructions would be delivered at a rate of about four learning opportunities per minute. I noticed that you looked at the program a few times when you were running the procedure, which might have affected your pace. Before your next session, read the procedure two or three times and ask a supervisor if you have any questions about how to run the procedure. Let’s set a goal to reach three learning opportunities per minute for this next week. I will let you know what your average is the next time I observe you. Does that sound doable to you?” Once the supervisee meets the goal of three learning opportunities per minute, the supervisor and supervisee might increase the goal rate to four learning opportunities per minute.
While the above conceptualization of an ideal supervision process was based on previous research, the process itself has never been empirically tested. Furthermore, it is important to consider the system in which the supervision process is to take place. “If we contain change within artificial walls, our systems will likely die” (Malott, 2003, p. 23). Events within a system (e.g., a supervision process) and outside of the system (e.g., government or external agency regulations) both affect the way that system operates.

Because there is so little existing research on general supervision processes, this study was descriptive, designed to help identify research questions that are more amenable to empirical study. The graduate practicum training system examined in this study was part of a larger training system that involved research functions and teaching functions in addition to the training system itself. This larger training system operated within a department which operated within a university. Measures of optimization should be considered at the organizational level, rather than at the “department”, or, in this case, “sub-system” level (Rummler & Brache, 2012). For example, the undergraduate practicum training system might have a sub-system goal to double the number of basic practicum students within the next year. At the organizational level, however, it would be important to consider whether there is a sufficient number of graduate students to support the training and supervision of twice as many undergraduate students. Furthermore, graduate students would have to be sufficiently trained to meet the needs of undergraduate practicum students in order to facilitate high quality service provision. Additionally, organization leaders would have to consider whether the next level of practicum (i.e., the intermediate practicum), was equipped to train and supervise twice as many people the following semester when basic practicum students became intermediate practicum students. The appropriateness of the goal to increase the number of undergraduate students who receive
training within the practicum system depends not only on the capacity of the undergraduate practicum training sub-system, but the capacity of the supporting sub-systems as well.

Furthermore, while the training and supervision of trainees seeking BCBA certification was a major focus of this study, considerations had to be made regarding the ability of the training system as a whole to support performance after training. Rummler & Brache (2012) put it this way: “If you pit a good performer against a bad system, the system will win almost every time” (p. 11). Effective training must consider what happens day-to-day, on the job (Brethower & Smalley, 1998). Even if undergraduate and graduate students reach mastery of targeted performances during training, if contingencies on the job outside of training support a performance that is different from the one targeted in training, the targeted performance will not occur on the job. This study examined the supervision process within the training system and the necessary system preparations for accommodating desired changes to the supervision process and supervisory behavior.

The system in which the supervision process was examined was an established university practicum system aimed at teaching behavior analytic repertoires to both undergraduate and graduate students. Individuals responsible for managing the structure of the training system expressed a need for the undergraduate and graduate training at the site to be aligned. Graduate students expressed a need for the graduate training system to consider the experience that students may have received as undergraduates, especially because so many graduate students within the training system received their undergraduate training within the same system. Students expressed that, because much time was spent within the same training system, there was some overlap in their training and missed opportunities for learning more advanced skills.
The uncovering of these issues, in addition to the rationale described above led to the decision to approach this study as a descriptive one. It was important to keep the practical significance of this project in mind. Ultimately, the goal was a training system that would result in efficient, effective, evidence-based training practices for trainees. Achieving such a goal requires an understanding of the variables affecting the system and of the moving parts that make up the system.

More specifically, the purpose of this study was to determine the necessary structural elements for supporting the use of a structured supervision system within a multi-tiered undergraduate and graduate training system. An additional goal was to take steps toward building those structural elements. The structured supervision system examined in this study includes templates and procedures for creating a job model (a form of task clarification), conducting pre-training assessments, setting goals, providing feedback, creating and implementing training modules, collecting data on supervisee performance, and creating a professional development plan.

The implementation of the supervision system began with a pre-intervention consultation and an analysis of the components of the training system, revealing a need for system development. For that reason, this study served to answer the following questions:

1. What disconnects exist in the training system? As part of this systems improvement effort, what disconnects were resolved, and which still need to be resolved?
2. What changes in the system occurred throughout the development process?
   a. What do key system leaders report that they observe as meaningful changes and improvements in quality of the training system throughout the development process?
b. What system changes do undergraduate practicum students report noticing throughout the development process, and what are their reported opinions of these changes?

c. What are master’s and doctoral students’ opinions of the tools and products that are created as part of the system development process?

METHOD

Participants and Setting

One practicum training system consisting of an advising professor, a faculty specialist, five doctoral students, 29 master’s students, and 10 undergraduate students participated in this study. The advising professor, faculty specialist, and doctoral students were also Board Certified Behavior Analysts (BCBAs) who provided supervision to trainees seeking BCBA certification (all of whom were master’s students receiving training within the practicum training system). Three doctoral students and four master’s students served as managers for aspects of the training system and took part in the system development efforts described below. Master’s students also served as supervisors for the undergraduate practicum students.

The practicum site was an early childhood special education (ECSE) classroom that served children with developmental disabilities and students who engaged in problem behaviors. The classroom utilized behavior analytic teaching methods (most notably, discrete trial training) and focused on early intensive behavioral intervention. Researchers provided training and coaching on the development of training and supervision-related materials and processes in a university lab setting. Researchers also occasionally observed performance at the practicum site.
Research Design

Case studies are a form of uncontrolled research that have been influential in several different fields of study, including clinical psychology, education, and medicine (Kazdin, 1982). While case studies and other pre-experimental designs do not completely rule out threats to internal validity, there are ways to conduct case studies that allow the researcher to gather similar information to that which would be gathered under controlled conditions. Specifically, collecting objective information as opposed to anecdotal information and collecting data on a frequent basis are means of strengthening one’s confidence in the conclusions that can be drawn from an uncontrolled case study (Kazdin, 1982). Though these design considerations may increase the confidence with which one can draw conclusions regarding the effects of the independent variable(s) on the dependent variable(s), case studies should be used primarily for generating questions that can later be investigated using more rigorous experimental analysis (Poling, Methot, & LeSage, 1995).

This study utilized a case study design with survey components and included a descriptive analysis of the process and outcomes of designing a supervision system for behavior analysts. Survey measures were collected multiple times throughout the development process to obtain measures from system managers, practicum supervisors, and undergraduate practicum students. While such measures were not direct measures of system performance, they provided sources of information other than the investigator’s opinions of the events that took place. Additionally, an analysis of the functional relationships within the organization, rather than anecdotal reports of system disconnects, served as the catalyst for all other system improvement efforts.
Data Collection and Measurement

An analysis of the functional relationships between the departments or “functions” of the practicum training system was conducted based on the Functional Relationships Tool (Performance Blueprints, 2016). Additionally, the tool was used to identify areas in which inputs or outputs were missing, going to or from an inappropriate function, or unnecessary (i.e., disconnects within the system). The tool prompts users to identify all the departments or functions of the system being analyzed, the outputs that each function produces, and the destinations of each output. It also prompts users to identify goals and the current status of each output. For each function, users note whether inputs coming from other functions are sufficient to meet department or function standards, whether the function regularly receives feedback about how well it is performance, whether the workflow is logical, and whether adequate resources are available to support the team. The investigator completed the analysis of functional relationships by meeting with individual department leaders and asking questions aimed at gathering the information prompted in the functional relationships tool. The results of the analysis were used to create a functional relationship map. After the map was initially created, the investigator presented the result to the whole group of department leaders and requested their feedback. The final functional relationship map is a result of the incorporation of all department leaders’ feedback. No suggestions for additional change were presented by department leaders in the final development meeting.

Additionally, surveys were used throughout the study to measure satisfaction of those involved in system improvement efforts; undergraduate students’ detection of change within the practicum and satisfaction with the training they received in the practicum; and graduate students’ satisfaction with new tools that were introduced throughout the study. Throughout the
study, several master’s students who managed subsystems related to practicum training took part in system improvement efforts. Their BCBA supervisors also took part in these efforts. This team of BCBA supervisors and system leaders will be referred to as the development team throughout the remainder of this paper. The Development Team Satisfaction Survey (Appendix A) consisted of five questions designed to assess the development team’s opinion of the value that was added to the practicum system as a result of the study. This survey also gave the development team an opportunity to indicate areas of the system in need of improvement that were not yet being addressed as part of the study.

The Undergraduate Practicum Student System Change Survey (Appendix B) asked undergraduate students to indicate the changes they noticed in the system since the last time they took the survey (or in the last month, for those filling out the survey for the first time). The survey also asked undergraduate students to describe the changes that were most beneficial or any changes that were detrimental. Undergraduate students were also asked to indicate their level of satisfaction with clarification of performance expectations, rationale, instruction, modeling, practice opportunities, ongoing feedback, goal setting, and evaluation components of the training system.

The New Tool Satisfaction Survey (Appendix C) asked graduate students who had used new materials developed during the study to evaluate those new materials. Specifically, the survey asked graduate students the likelihood that they would use the new tool at their practicum site in the future, the extent to which the tool had a positive impact on their supervision practices, and the likelihood that they would recommend the tool to colleagues who do training and supervision within their professions. Additionally, the survey asked graduate students if there
were aspects of the tool that could use improvement and to describe aspects of the tool that were particularly useful.

The investigator also analyzed the existing file structure of the materials available to support graduate students’ fulfillment of practicum responsibilities. The investigator typed the names of all folders, sub-folders, and document titles within the Practicum Materials folder on the system’s shared Google Drive. She did this to obtain baseline data on the materials available to individuals who were supervising the undergraduate practicum students and on the organization of those materials.

**Procedure**

*8-hour Supervision Training.* Supervisors took part in an 8-hour supervision training based on the BACB’s *Supervisor Training Curriculum Outline*. The training presented the supervision system and provided opportunities for the supervisors to create or modify a supervision contract, create a job model for supervisees at their supervision sites, use a tool for assessing supervisees’ pre-training skill levels, use a tool for setting goals and providing written feedback, create task analyses, create training documents, observe and take data on a mock training session, observe and take data on a mock feedback session, and create a professional development plan. Nine and a half continuing education units (CEUs) toward BCBA recertification were provided to each participant upon completion of the training.

*Pre-Intervention Consultation.* After each participating supervisor attended the 8-hour training the investigator met with all supervisors in the organization as well as the development team, consisting of all second-year master’s students who were involved in managing each sub-system (i.e., pre-practicum, undergraduate practicum, and practicum support systems) to determine whether the organization already uses job aids or supervision tools within its existing
supervision process. Initial meetings focused on working with the development team to determine where each existing tool fit within the proposed supervision system, and whether the tool met the requirements of each component of the supervision system. However, organization of materials was encompassed in another student’s master’s project and therefore became a secondary focus of this project.

System Development. During the early stages of the pre-intervention consultation phase of the study, the investigator learned that, as part of their degree requirements, several master’s students were conducting projects that involved development of practicum training systems. To prevent redundancies in projects and ensure that each development project considered its effects on other pieces of the larger training system, the investigator periodically met with individual graduate students on the development team to provide guidance and help scope each sub-project. Additionally, as changes to the system were developed, the whole development team met together to approve the final products and agree upon processes by which they would be integrated into the existing system.

As part of the practicum site’s support system, one graduate student’s project involved creating a task analysis, training storyboard, supporting training materials, and a treatment integrity data sheet for each job responsibility outlined on the job model (see Garza, McGee, Schenk, & Wiskirchen, 2017). A training storyboard is a training design document that outlines exactly how training will occur. It specifies the performance to be trained, the rationale for the performance and for the specific training of the performance, what should be said and done when the trainer models the performance, the arrangement of the practice opportunities for the trainee, the types of feedback that will be delivered during training, how the performance will be evaluated, and how the training will be delivered.
Prior to involvement in this study, the practicum support system’s senior manager’s project was going to involve the creation of more objective criteria for determining when master’s students would learn more advanced skills at the practicum site. After initial consultation with the investigator, the development team determined that it would be beneficial to create the materials discussed in Garza et al. (2017) to achieve the initial goal. The investigator met with the graduate student and her supervisor periodically to identify job responsibilities that could be fully supported using only job aids or checklists versus other job responsibilities that would require on-the-job training using the components of behavioral skills training. The investigator provided coaching on the development of materials to facilitate the BST process, and, in some cases, developed the materials and shared them with the development team.

The system manager of the preliminary practicum system identified the need to have better initial training and assessment for undergraduate practicum students and sought to alleviate these issues as part of her master’s project. The project involved the use of treatment integrity forms for each job responsibility that undergraduate students learned in the practicum. Trainers, who were also master’s students in the program, were responsible for teaching each job responsibility and using the treatment integrity forms to gather scores. Scores were then available to inform practicum supervisors of skill deficits so that behavioral skills training could be used to address those skill deficits. The investigator developed training storyboards (Appendix D) to standardize the process for teaching these initial skills to new undergraduate or graduate practicum students. The investigator also facilitated communication among the development team to ensure that the practicum support system did not create the same storyboards that were created for the preliminary practicum.
The system managers of the undergraduate practicum training system (i.e., the basic, intermediate, and advanced practicum training systems) identified the need to distinguish each level of practicum training from the others. The system managers hypothesized that undergraduate students were choosing not to continue taking more advanced levels of the practicum because their experience was not differentiated enough from one level of training to the next. Part of this project involved determining a practicum structure that would allow for more advanced undergraduate practicum students to engage in more advanced skills as they demonstrated mastery of prerequisite skills. As part of this sub-project, the investigator also created a more detailed monitoring form for practicum job responsibilities to allow for more sensitive data collection on undergraduate student performance. Additionally, the investigator worked with the system managers to develop a process for changing the grading system for undergraduate students based on the new monitoring forms.

During each of the development team meetings, each sub-system manager gave an update on their individual projects, and the investigator facilitated conversation about how changes would be integrated into the system and discussed how the projects fit into the larger system. Additionally, the investigator periodically administered surveys to the development team to gather information regarding the team’s satisfaction with the development process and progress (Appendix A).

As new tools were developed throughout the development process, the investigator administered surveys to those who used the tools to assess user satisfaction with new materials (Appendix C). The investigator also periodically administered surveys to undergraduate students in the practicum to assess their detection of system changes, their satisfaction with those
changes, and their satisfaction with aspects of training and supervision in the practicum system (Appendix B).

At the conclusion of the study, the investigator met with each sub-system manager and the development team as a whole to provide a summary of what had been done and recommended next steps for maximizing the probability that the tools that were developed would facilitate improvements in training.

RESULTS AND DISCUSSION

Disconnects in the Training System

An analysis of the functional relationships between the departments is depicted in Figure 1. Arrows going out from a department indicate an output going from that department. Arrows going into a department indicate an input going into that department. For example, practicum students from the Department of Psychology are an input to the Preliminary Practicum course. Trained professionals are an output of the Practicum Training System and an input to organizations that provide ABA services. Items on the map that are bolded and italicized are disconnects that were identified through use of the functional relationship tool and conversation with department leaders. Twenty-one disconnects were identified through the analysis of functional relationships.

Table 1 provides an explanation of each of the identified disconnects. The leftmost column refers to the number of the disconnect indicated on the relationship map. The middle column refers to the name of the disconnect on the relationship map. The name of the disconnect is written as [name of disconnect] from [start point] to [end point]. The rightmost column provides an explanation of why the item is a disconnect.
System-Specific Considerations

Before discussing a recommended course of action for addressing the disconnects illustrated in Figure 1 and Table 1, internal and external constraints on the system must be considered. The practicum training system that took part in this study had several different sub-systems, and each of them had to consider the larger, more complex system in which they operated in order to function smoothly. Imposing organizational change without considering the limitations of each component of the system and how those limitations affect the functioning of other components of the system can be detrimental. Below are some factors that were considered in an effort to avoid additional strains on the system.

Short-staffed. At the time of the study, the system had become unexpectedly short-staffed. As a result, each of the doctoral students who provided BCBA supervision within the training system had to add additional supervisees to their caseloads. There were also shifts in supervisor/supervisee dyads, which made it difficult to draw conclusions regarding changes in supervisors’ practices throughout the study. First and foremost, the organization was concerned with improving the lives of individuals with developmental disabilities. Recommendations for system improvement had to take this into consideration while also meeting the needs of its practicum students.
Figure 1. Functional relationship map of the practicum training system. Bolded and italicized items on the map indicate disconnects.
<table>
<thead>
<tr>
<th>#</th>
<th>NAME ON MAP</th>
<th>DESCRIPTION OF DISCONNECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MA student performance data from preliminary practicum to the graduate practicum training system</td>
<td>Data from preliminary practicum did not inform the content or process of training for master’s students</td>
</tr>
<tr>
<td>2</td>
<td>UG student performance data from preliminary practicum to the basic practicum training system</td>
<td>Data from preliminary practicum did not inform the content or process of training for undergraduate students</td>
</tr>
<tr>
<td>3</td>
<td>UG students with practicum prerequisite skills from preliminary practicum to basic practicum</td>
<td>Prerequisite skills for basic practicum and corresponding mastery criteria were not explicitly defined, so it was not clear whether undergraduate preliminary practicum students were able to demonstrate prerequisite skills prior to entering basic practicum</td>
</tr>
<tr>
<td>4</td>
<td>Feedback from basic practicum to preliminary practicum</td>
<td>Student performance in basic practicum did not serve as feedback on the effectiveness of training in the preliminary practicum course</td>
</tr>
<tr>
<td>5</td>
<td>Data from basic practicum to intermediate practicum</td>
<td>Data on student performance in basic practicum did not inform the content or process of training for intermediate practicum students</td>
</tr>
<tr>
<td>6</td>
<td>Data from intermediate practicum to advanced practicum</td>
<td>Data on student performance in intermediate practicum did not inform the content or process of training for advanced practicum students</td>
</tr>
<tr>
<td>7</td>
<td>Students with “basic” skills from basic practicum to intermediate practicum</td>
<td>Differences between the skills learned in basic, intermediate, and advanced undergraduate practicum courses were not clearly defined, so it was not clear whether prerequisites to intermediate practicum were learned in the basic practicum system</td>
</tr>
<tr>
<td>8</td>
<td>Students with “intermediate” skills from intermediate practicum to advanced practicum</td>
<td>Differences between the skills learned in basic, intermediate, and advanced undergraduate practicum courses were not clearly defined, so it was not clear whether prerequisites to advanced practicum were learned in the intermediate practicum system</td>
</tr>
<tr>
<td>9</td>
<td>Feedback from intermediate practicum to basic practicum</td>
<td>Student performance in intermediate practicum did not serve as feedback on the effectiveness of training in the basic practicum course</td>
</tr>
<tr>
<td>10</td>
<td>Feedback from advanced practicum to intermediate practicum</td>
<td>Student performance in the advanced practicum did not serve as feedback on the effectiveness of training in the intermediate practicum course</td>
</tr>
<tr>
<td>11</td>
<td>Feedback from the graduate practicum training system to preliminary practicum</td>
<td>Graduate student performance in their first semester of practicum did not serve as feedback on the effectiveness of the preliminary practicum course</td>
</tr>
<tr>
<td>12</td>
<td>Feedback to UG students from the graduate practicum training system to the undergraduate practicum training system</td>
<td>Data collection on undergraduate student performance varied among supervisors. Data were collected on discrete trial performance using yes/no scores for the whole observation, rather than trial-by-trial. The development team reported that they suspected low interobserver agreement among supervisors and therefore a lack of consistent feedback among supervisors.</td>
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</tr>
<tr>
<td><strong>Table 1 - Continued</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Student performance data from the graduate practicum training system to the faculty supervisor</td>
<td>Target performances for graduate training were not explicitly defined, and training materials and treatment integrity forms were not developed. Training opportunities and level of detail in performance data and feedback varied among supervisors.</td>
</tr>
<tr>
<td>14</td>
<td>Students with UG practicum training from the undergraduate practicum training system to graduate practicum training system</td>
<td>During the pre-intervention consultation, the development team reported that there was some redundancy between undergraduate and graduate training, especially for students who completed multiple semesters of undergraduate training within the system and subsequently entered the master’s program. Additionally, it was not clear which skills students mastered at the undergraduate level prior to entering the master’s program.</td>
</tr>
<tr>
<td>15</td>
<td>MA students trained to supervise, write protocols, and train others from the graduate practicum training system to the undergraduate practicum training system</td>
<td>Level of training and amount of exposure to supervision, protocol development, and training varied for MA students based on the available opportunities and their supervisor’s approach to BCBA supervision. MA students’ skill levels prior to independent practice therefore varied as well.</td>
</tr>
<tr>
<td>16</td>
<td>Training protocols from the training development function of the practicum support system to the on-the-job training component of BCBA supervision</td>
<td>Training protocols did not exist for supervisors to use for on-the-job training, but development of such protocols was an intended function of the support system.</td>
</tr>
<tr>
<td>17</td>
<td>Training protocol feedback from the on-the-job training component of BCBA supervision to the training development subsystem</td>
<td>Training protocols had not yet been developed, so BCBA supervisors were not yet able to provide feedback on the protocols.</td>
</tr>
<tr>
<td>18</td>
<td>Job information from the small group component of BCBA supervision to the on-the-job training component of BCBA supervision</td>
<td>Information delivered in small groups varied from supervisor to supervisor and did not always relate directly to on-the-job performance.</td>
</tr>
<tr>
<td>19</td>
<td>Performance goals and job-related information from the individual supervision component of BCBA supervision to the on-the-job training component of BCBA supervision</td>
<td>Job-related information delivered during individual supervision varied by supervisor. Measurable performance goals were not regularly set as a part of the supervision process.</td>
</tr>
<tr>
<td>20</td>
<td>Performance data from the on-the-job training component of BCBA supervision to the individual supervision component of BCBA supervision</td>
<td>The type and amount of performance data collected on the job and the degree to which these data were discussed in individual supervision meetings varied by supervisor.</td>
</tr>
<tr>
<td>21</td>
<td>Feedback on materials from BCBA supervision to the BCBA system</td>
<td>There was no mechanism by which BCBA supervisors gave feedback to the BCBA System on the materials that were developed for integrating BACB regulations into the supervision process. Additionally, new materials were not regularly developed by the system.</td>
</tr>
</tbody>
</table>
Prior to the event that led the training system to become short-staffed, the investigator had asked doctoral students to take part in the system development process by developing training storyboards, training materials, and treatment fidelity forms. However, because of the additional demands placed on doctoral students because of their additional caseloads and other competing contingencies (see *Time and Competing Contingencies* for more detailed discussion), the investigator played a much larger part in the development process than originally planned, and fewer materials than anticipated were developed over the course of the study.

*Time and competing contingencies.* In addition to being short-staffed, other competing contingencies influenced those most involved in training efforts. In the training system, graduate students were primarily responsible for training and supervision of undergraduate students. Graduate students were also taking credits toward their own degree requirements, managing a sub-system, and managing various other academic requirements. Researchers had to take care not to add requirements that would interfere with students’ successful completion of their academic and professional obligations.

*Grading.* Training within a practicum system is different from training within other, non-university affiliated organizations. One difference that especially influenced recommended courses of action was the fact that trainees were taking academic credit for their professional work and were therefore receiving a grade. Students took practicum credits to learn new skills, so grading fairly involved taking accurate data that could be used to improve performance while simultaneously targeting appropriate responses for grading purposes. Because of the need to grade students fairly and consistently with the course syllabus, it was important to introduce new data collection procedures slowly while fading out the existing data collection procedures. The data sheets developed as part of this study were more sensitive to changes in student
performance and were likely to produce lower scores than the scoring sheet that was used prior to the study. The investigator’s goal was to facilitate the collection of high quality data that could be used to improve undergraduate students’ performance without sudden, drastic changes in the grading system.

*Sub-system improvement efforts.* The training system studied in this project involved several different sub-systems. The preliminary practicum system, basic practicum system, and practicum support systems each had second-year master’s students who were completing projects related to the functioning of the sub-systems they oversaw. Second-year master’s students will be referred to as senior system managers throughout the remainder of this paper. Graduate practicum training and BCBA supervision were affected by these sub-system improvement efforts as well. As part of their system-improvement efforts, senior system managers produced materials to be used within one or more additional sub-systems. For example, the practicum support system created training materials that BCBA supervisors could use to train master’s students to complete their practicum responsibilities. These efforts had to be coordinated to avoid redundancies or incompatible recommendations. Coordination also helped ensure that each affected sub-system could account for any modifications necessary to that system in order for other sub-systems’ recommendations to be carried out.

For example, as part of the pre-practicum system improvement project, training storyboards and integrity data sheets were developed so that master’s student supervisors had a standardized training process to follow, and data were collected on all of the targeted performances during the first week of each semester. These data were then to be used to inform the training process throughout the rest of the semester. In order for this project to be successful, master’s students had to be trained on the use of the training storyboards and treatment integrity
forms. Additionally, the practicum support system’s project involved creating training materials and treatment integrity forms for training master’s students to become BCBAs. Some of the skills targeted at the pre-practicum level and at the master’s student level were the same, and coordination helped avoid redundancies in the pre-practicum and practicum support system efforts.

**Progress Toward Addressing Disconnects**

For the purpose of ease of discussion, the disconnects in Table 1 were organized into five categories. Table 2 provides a name and description for each of the five categories, as well as the disconnect numbers from Figure 1 and Table 1 that fall into each category. The same or similar courses of action could be taken to address each disconnect within a single category. Following is a description of the recommended course of action for addressing each disconnect, as well as a description of what had already been done to address the disconnects.

<table>
<thead>
<tr>
<th>DISCONNECT NUMBERS</th>
<th>CATEGORY NAME</th>
<th>DESCRIPTION OF CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 5, 6</td>
<td>Lack of training continuity</td>
<td>Data from one level of practicum did not inform the content or process of training for the next level of practicum</td>
</tr>
<tr>
<td>3, 7, 8, 14</td>
<td>Undefined target performances</td>
<td>Target performances were not defined for each level of practicum, so it was not clear whether the skills necessary for moving from level of practicum to the next had been learned prior to advancing in training</td>
</tr>
<tr>
<td>4, 9, 10, 11</td>
<td>Student performance not used as feedback</td>
<td>Student performance in each level of practicum did not serve as feedback on the effectiveness of training in the previous level of practicum</td>
</tr>
<tr>
<td>12, 13, 15, 18, 19, 20</td>
<td>Idiosyncratic training</td>
<td>Quality and breadth of training varied for practicum students depending on their specific supervisor</td>
</tr>
<tr>
<td>16, 17, 21</td>
<td>Missing materials or feedback on materials</td>
<td>Practicum subsystems had not yet developed materials, and/or feedback mechanisms did not exist for receiving systems to provide feedback on those materials</td>
</tr>
</tbody>
</table>
Lack of training continuity. Ideally, data would be available for each performance a student engages in throughout each level of the training system. That way, supervisors could avoid gaps in service provision by upholding their ethical responsibility to, “delegate to their supervisees only those responsibilities that such persons can reasonably be expected to perform competently, ethically, and safely” (BACB, 2014).

The recommended course of action for creating continuity in training is to first create a job model consisting of all performances a student might engage in throughout his or her time as a practicum student. For all performances, treatment integrity forms should be developed, and a course of action for training should be identified. This might be done by arranging job performances from “easiest” to “hardest” or identifying which performances involved skills that must be mastered prior to successfully engaging in more advanced job performances (Rasmussen, 1982). Additionally, training storyboards should be developed to help maintain a consistent process of training within the organization. After the training storyboards are developed, additional materials should be created to facilitate the training process based on the design outlined in the training storyboards.

As part of this project, a job model was developed for the practicum training system, and training storyboards were developed for each skill taught during the preliminary practicum course. Additionally, the senior system manager of the preliminary practicum system developed treatment integrity forms for each of the performances targeted during pre-practicum. Targeted skills included orienting to an ECSE student’s behavior profile, implementing a behavioral protocol, pairing oneself with reinforcers, engaging in structured play, setting up materials for running a procedure, discrete-trial-training, conducting an informal preference assessment, collecting data, and session documentation.
The senior system manager of the practicum support system began developing training and monitoring materials for the skills targeted at the master’s level with some coaching from the investigator. The job model was broken into “simple” and “complex” performances. “Simple” performances were those that could likely be learned by reading examples and creating a permanent product using a job aid. Supervisors could then review permanent products and provide feedback. The student could then practice, and the supervisee could provide feedback until the student reaches the mastery criteria. Examples of “simple” performances include writing a behavior profile, checking documentation for errors, writing a letter home to parents, and updating the organization’s database. The term “simple” should be taken loosely, as these performances may not require less skill than those performances labeled “complex”. However, the ability to train individuals to successfully complete these performances using examples and review of permanent products allowed for a more simplified training process.

As part of the project, the senior system manager created profiles for three fictitious clients with varying skill levels and rates of problem behavior, instructions for completing the job performance (and the resulting permanent product), examples of successfully completed permanent products, and scoring rubrics for each required permanent product. This project addressed disconnects related to lack of continuity in training through the creation of monitoring forms and a process by which to collect data on student performance. Those data could then be used to inform future directions in training.

Additionally, the investigator created a performance tracking chart for graduate students receiving training at the practicum site. A screenshot of a portion of the tracking spreadsheet is found in Appendix E. The tracking chart is an electronic spreadsheet based on the practicum’s job model. Supervisors can document up to six exposures to each job performance using the
tracking chart. For each exposure, supervisors can document the date of the exposure, select the level of support the student received (observed, supervised partial practice, supervised complete practice, or independent practice) from a dropdown menu, select the goal for the student’s next exposure (provide a model, provide a partial practice opportunity with coaching, provide a complete practice opportunity with coaching, practice independently without supervisor support, or generalize to a new client or setting) from a dropdown menu, and type any additional comments the supervisor has related to that exposure.

Some materials for teaching complex skills have already been developed as part of this project (e.g., storyboards and data sheets for preliminary practicum), but the majority of training storyboards, training materials based on those storyboards, and treatment integrity forms have yet to be developed. Additionally, the investigator is continuing to work with the doctoral students who provide BCBA supervision in the lab to establish practices and contingencies that will support the use of the materials that have been developed so far as well as the development of more materials as the system continues to function.

*Undefined target performances.* Many of the same solutions that were implemented and recommended to address disconnects related to lack of training continuity could also be used to address disconnects related to undefined target performances. Direct assessment of skills requires that the target performance be broken into observable, measurable components (Cooper, Heron, & Heward, 2007). Breaking down performances so that they can be directly measured would address disconnects related to undefined target performances. The job model helps define which job performances can be learned at the practicum site. The treatment integrity forms and training storyboards developed for preliminary practicum and the practicum support system provide definitions of target performances.
The senior system managers for the undergraduate practicum training system focused their system-improvement efforts on delineating the job responsibilities that should be taught at the three different levels of undergraduate practicum and which should be taught at the master’s level. The investigator has provided some coaching on this project as well. Something that is important to consider in this analysis is how conditions might change to make each performance more or less difficult to perform (Mager, 1997). For example, discrete trial training might be taught to basic practicum students with learners who engage in little to no problem behavior and who require few to no modifications to programs in order to meet their targets. The same skill might be taught to advanced practicum students under different conditions (e.g., with learners who engage in high rates of escape-maintained problem behavior). Taking this approach to the design of each tier of the training system would allow for the identification of a progression of skill development from one level of training to the next.

Grading students fairly is another important consideration when defining target skills and developing guidelines for which skills should be taught at which levels of practicum. Prior to involvement in this study, undergraduate practicum grades were largely based on scores on a monitoring form for discrete trial training. The monitoring form had spaces for the supervisor to circle Y (yes) or N (no) for each listed component of discrete trial training. The development team indicated that these scores were subjective because it was unclear what to do if an undergraduate student correctly engaged in a component of discrete trial for only some of the session, and supervisors often “felt bad” giving scores that would result in a lower grade.
The investigator created a treatment integrity form for discrete trial training that allowed supervisors to collect data trial-by-trial (Appendix F). Additionally, based on feedback that the training week treatment integrity forms were not applicable for teaching undergraduate students to work with students who were new to the classroom, the investigator developed a treatment integrity form for building rapport with new clients (Appendix G). These forms allowed for more sensitive and objective measurement of performance. However, when supervisors began using the form to give more specific feedback to students, concerns arose about how those scores should affect students’ grades. After all, it is expected that students would not initially perform all components of discrete trial training with 100 percent integrity. Therefore, we recommended that the training system continue using their current grading system while simultaneously using the trial-by-trial data sheet to provide more detailed feedback and to inform decisions on the arrangement of job responsibilities among practicum levels.

*Student performance not used as feedback.* Because performances were not defined, and data sheets did not yet exist for obtaining sensitive measures of each performance in which undergraduate and graduate practicum students engaged, it was not possible to use practicum student performance in each level of practicum as feedback on the quality of training in previous levels of practicum. After these materials are developed, early assessment of prerequisite skills can occur during the initial weeks of new semesters, and the data can be used to analyze the effectiveness of training that occurred in the previous semester. Assessment and training materials for some performances were developed as part of this project, but many performances still need supporting assessment and training materials.

*Idiosyncratic training.* Idiosyncrasies in training present a marketing issue for a training system because undergraduate and graduate students choosing whether to complete their training
within that system cannot be certain of the quality of training they will receive. Furthermore, the training system that was examined in this study served to train doctoral students in addition to master’s and undergraduate students. Therefore, it was expected that doctoral students who provided supervision of master’s students seeking BCBA certification would not be experts in training and supervision. It is also unlikely that master’s students providing training and supervision to undergraduate students would be experts. To maintain the integrity of the field of behavior analysis and create a culture in which evidence-based approaches to supervision are practiced, it is important to clarify the expectations for high quality supervision and implement contingencies to support behavior that is consistent with those expectations.

Having standardized approaches to training would provide a means of maximizing learning opportunities and quality of training for undergraduate students while providing lower-risk opportunities for graduate students at the doctoral and master’s level to train and supervise others. The job model, training storyboards, treatment integrity monitoring forms, and performance tracking chart all provide means for standardizing the training process at the practicum site.

The investigator recommended that training be discussed regularly in clinical meetings to provide an even distribution of training opportunities for students, as possible. For example, clinical meetings could involve a discussion of the training opportunities that are available within the upcoming one to two weeks and of which graduate students have the least exposure to the required job performances. Graduate students who have had little exposure to job performances that are necessary for meeting client needs in the upcoming weeks would be the first who are offered the opportunity to take part in the job performance.
**Missing materials or feedback on materials.** An intended function of the practicum support system was to provide training and assessment materials to BCBA supervisors for training master’s students. This disconnect is in the process of being resolved as the senior system manager of the practicum support system has begun creating these materials as part of her system-improvement project. The investigator recommends that the senior system manager provide opportunities for BCBA supervisors to provide feedback on those materials on at least a semesterly basis.

Another disconnect identified in this category was that the BACB system did not receive regular feedback on the materials they provided to the graduate practicum training system. Further analysis revealed that this was because few materials had recently been produced by the system. In fact, system leaders had considered dissolving the BACB subsystem. However, the investigator recommended that the system remain in place to consider how the BCBA/BCaBA Task List (5th ed.) (BACB, 2017) and changes to the Experience Standards (BACB, 2017) will impact the practicum training system and to lead conversations on the adaptation of the system to meet those new requirements.

**Changes Throughout the Development Process**

*Development Team Satisfaction Surveys.* At the time that the first Development Team Satisfaction Survey was administered, the investigator had provided feedback on the development of treatment integrity forms for use during training week. Training week is the first week of the semester when new practicum students begin learning how to engage in their practicum responsibilities. The investigator also developed training storyboards for each of the job responsibilities identified by the preliminary practicum system manager as necessary skills to learn during the first week of the semester.
Additionally, the investigator met with the practicum support system to become familiar with the materials that already existed for training students at the master’s level and begin to arrange materials in a more accessible manner, based on the job responsibilities outlined in the job model. The practicum support system manager began to create training materials for the skills outlined in the job model with coaching from the investigator. At this point, the investigator had also met with the system managers for the undergraduate practicum training system to begin defining the scope of their master’s projects and identifying elements of their projects that would be beneficial to include in this study.

At the time of the second administration of the Development Team Satisfaction Survey, the investigator had developed and shared the performance tracking chart for supervisors to use for tracking graduate students’ experience throughout their time in the program. In response to the development team’s comments regarding the need for further development toward the monitoring of undergraduate student performance and distinguishing performances appropriate for each level of practicum training, she had also developed the trial-by-trial data sheet and a data sheet for monitoring the integrity of the process of pairing oneself with reinforcers and building rapport with a new client. The trial-by-trial monitoring form was also accompanied by a job aid for calculating scores. Results from the Development Team Satisfaction Survey are discussed below.

Figure 2 illustrates the responses to the question, “Since the last development team meeting (or within the last month, if this is your first time filling out this survey), was value added to the practicum training system that would not have been added without the involvement of the student investigator?” for each administration of the Development Team Satisfaction Survey. This question was answered on a Likert scale ranging from 1 to 5, with 1 corresponding
to “No, not at all”, 3 corresponding to “Some value was added”, and 5 corresponding with “A lot of value was added”. The numbers 2 and 4 did not have corresponding labels. For the first administration of the survey, the majority of participants (56%) circled “4”, the option between “Some value was added” and “A lot of value was added”. For the second administration of the survey, the majority of respondents (67%) chose either “A lot of value was added” (44%) or the option between “Some value was added” and “A lot of value was added” (22%).

![Survey Results](image)

*Figure 2.* Results for the development team satisfaction survey question on value added by the investigator. Gray bars depict the results for the first administration of the survey. Black bars depict the results for the second administration of the survey.

Figure 3 illustrates the responses to the question, “How likely would you have been to make the same systems changes you have made since the last development meeting/within the last month had it not been for the involvement of the student investigator?” This question was answered on a Likert scale ranging from 1 to 5, with 1 corresponding to “Not likely at all”, 3
corresponding to “Somewhat likely”, and 5 corresponding to “Very likely”. The numbers 2 and 4 did not have corresponding labels. Answers to this question were more variable than the answers to the previous question. For the first administration of the survey, most respondents (78%) chose the option “Somewhat likely” (44%) or the option between “Somewhat likely” and “Very likely” (33%). For the second administration of the survey most respondents (86%) chose the option “Not likely at all” (29%) or the option between “Not likely at all” and “Somewhat likely” (57%), with one respondent choosing the option between “Somewhat likely” and “Very likely”

![Bar chart](image)

**Figure 3.** Results for the development team satisfaction survey question on likelihood of changes independent of involvement in this study. Gray bars depict responses for the first administration of the survey. Black bars depict responses for the second administration of the survey. Black bars depict responses for the second administration of the survey.

The development team was also asked to list the changes that were made to the undergraduate training system since the last development team meeting or within the last month and to indicate whether those changes would have been made without the involvement of this
study and, if the changes would likely have been made independently of this study, whether the changes would have been of as high quality or as in-depth without the involvement of this study. Rating scales for both questions ranged from one to five, with one corresponding to “Not likely at all”, three corresponding to “Somewhat likely” and five corresponding to “Very likely”. For the question regarding the likelihood that the change would have been of as high of quality or as in-depth without the involvement of this study, respondents had the option of choosing “N/A” to indicate that the change was not likely to have been made independent of this study, and therefore the question is not applicable.

Respondents identified the following systems changes in the first administration of the survey: Training week, training week storyboards, follow-up after training week, procedure revision, training for the icon exchange communication system, and Basic/IP/AP rubrics. Table 3 lists the name of each identified system change, the number of respondents who identified each system change, and the average rating for the corresponding survey questions. N/A answers were factored in as zero when calculating the average rating.
Table 3. Development Team Satisfaction Survey: Identification of System Changes (First administration)

<table>
<thead>
<tr>
<th>SYSTEM CHANGE</th>
<th>NUMBER OF RESPONDENTS WHO IDENTIFIED CHANGE</th>
<th>AVERAGE RATING OF LIKELIHOOD OF CHANGE INDEPENDENT OF THIS STUDY</th>
<th>AVERAGE RATING OF LIKELIHOOD OF QUALITY OF CHANGE INDEPENDENT OF THIS STUDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Week</td>
<td>5</td>
<td>3.2</td>
<td>2.25</td>
</tr>
<tr>
<td>Training week storyboards</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Follow-up after training week</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Procedure revision</td>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Training for the icon exchange communication system Basic/IP/AP rubrics</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

For training week, the average rating for the question, “How likely is it that this change would have been made without the involvement of this study?” was 3.2 (between "Somewhat likely” and “Very likely”). The average rating for the question, “If the change would likely have been made independently of this study, how likely is it that the change would have been of as high of quality or as in-depth?” was 2.25 (between “Not likely at all” and “Somewhat likely”). In other words, the development team indicated that training week would likely have been changed whether or not this study addressed it, but the changes would not have been as of high quality or as in-depth as they would have without the involvement of this study.

The respondent who identified the training week storyboards as a system change indicated that the change was somewhat likely to have occurred without the involvement of this
study, but that it is not likely at all that the change would have been of as high of quality or as in-depth.

The respondent who identified training week follow-up as a system change indicated that the change was somewhat likely to have occurred without the involvement of this study but chose the option between “Not likely at all” and “Somewhat likely” to indicate the likelihood that the change would have been of as high of quality or as in-depth without the involvement of this study.

The respondent who identified procedure revision as a system change indicated that the change was very likely to have been made without the involvement of this study and that it is very likely that the change would have been of as high of quality or as in-depth without the involvement of this study. These results are not surprising, given that the investigators were not directly involved in the procedure revision process.

The respondent who identified the basic/IP/AP rubrics as a system change chose the option between “Not likely at all” and “Somewhat likely” to indicate the likelihood that the change would have been made without the involvement of this study and chose “N/A” to indicate the likelihood that the change would have been of as high quality or as in-depth as it would have been without the involvement of this study. This result is somewhat surprising, given that, at the time of the survey, the investigator had not yet focused efforts on establishing performance criteria for basic, intermediate, and advanced undergraduate practicum students.

The respondent who identified small group rubrics as a system change indicated it was somewhat likely that the change would have been made without the involvement of this study and chose the option between “Not likely at all” and “Somewhat likely” to indicate the likelihood that the change would have been of as high of quality or as in-depth as it would have
been without the involvement of this study. Again, these ratings are somewhat surprising because, at the point of the survey, the investigator had not yet begun working with the undergraduate practicum development team to develop rubrics to measure the progress of undergraduate student skill development.

Respondents identified the following systems changes for the second iteration of the survey: Monitoring scores or trial-by-trial monitoring form, IOA on monitoring forms, pairing or pairing data sheet, tracking sheet, skills training for MA students, and DTT skill document. Table 4 lists the name of each identified system change, the number of respondents who identified each system change, and the average rating for the corresponding survey questions for the second administration of the Development Team Satisfaction Survey.

<table>
<thead>
<tr>
<th>SYSTEM CHANGE</th>
<th>NUMBER OF RESPONDENTS WHO IDENTIFIED CHANGE</th>
<th>AVERAGE RATING OF LIKELIHOOD OF CHANGE INDEPENDENT OF THIS STUDY</th>
<th>AVERAGE RATING OF LIKELIHOOD OF QUALITY OF CHANGE INDEPENDENT OF THIS STUDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring scores or trial-by-trial monitoring form</td>
<td>7</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>IOA on monitoring forms</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Pairing or pairing data sheet</td>
<td>4</td>
<td>1.5</td>
<td>0.25</td>
</tr>
<tr>
<td>Tracking sheet</td>
<td>2</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Skills training for MA students</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>DTT skill document</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
For monitoring scores or the trial-by-trial monitoring form, the average rating for the question, “How likely is it that this change would have been made without the involvement of this study?” was 2 (between “Not likely at all” and “Somewhat likely”). However, it is worth noting that responses to this question were variable, ranging from 1 (three respondents) to 4 (one respondent). For the question, “If the change would likely have been made independently of this study, how likely is it that the change would have been of as high quality or as in-depth?” three respondents selected N/A, and one respondent each indicated “Not likely at all”, “Somewhat likely”, “Very likely”, and the option between “Not likely at all” and “Somewhat likely”.

The respondent who wrote down “IOA on monitoring forms” as a system change indicated that it is “Not likely at all” that the change would have occurred without the involvement of the investigator and selected “N/A” to indicate the likelihood that the change would have been of as high of quality or as in-depth without the involvement of the investigator.

Respondents who indicated “Pairing” or “Pairing data sheet” as a system change had an average rating of 1.5 (between “Not likely at all” and “Somewhat likely”) to indicate the likelihood that the change would have been made without the involvement of the investigator. One respondent indicated that the change would not have been likely at all to have been of as high of quality or as in-depth without the involvement of the investigator, and three respondents indicated “N/A” for this question.

Both respondents who noted the tracking sheet as a system change selected the option between “Not likely at all” and “Somewhat likely” to indicate the likelihood that the change would have been made without the involvement of the investigator. One respondent selected “Not likely at all” and the other respondent selected the option between “Not likely at all” and
“Somewhat likely” to indicate the likelihood that the change would have been of as high quality or as in-depth without the involvement of the investigator.

The respondent who noted “skills training for MA students” as a system change indicated that the change was “somewhat likely” to have occurred without the involvement of the investigator and selected the option between “Not likely at all” and “Somewhat likely” to indicate the likelihood that the change would have been of as high quality or as in-depth without the involvement of the investigator. It is unclear exactly which system change this respondent was referring to, but it may have been the materials that were generated for teaching “basic skills” to graduate students (see above for more information on this portion of the project).

The respondent who noted “DTT skill document” as a system change indicated that the change was not likely at all to have occurred without the involvement of the investigator and indicated “N/A” to indicate whether the change would have been of as high quality or as in-depth without the involvement of the investigator.

_Undergraduate practicum students_. The first Undergraduate Practicum Student System Change Survey was administered approximately seven weeks after the start of the semester. At the time the survey was administered, the only change that had been implemented in the system was the new training week scoring system, including the new treatment integrity forms and the training storyboards. Eight practicum students took the survey, including five basic practicum students and three intermediate practicum students.

The second Undergraduate Practicum Student System Change Survey was administered at the end of the semester. At this time, in addition to the changes above, trial-by-trial monitoring forms and pairing monitoring forms were introduced in addition to the changes discussed above. Supervisors also began collecting IOA data as they practiced using the new monitoring forms.
Nine undergraduate students took the second survey, five basic practicum students and four intermediate practicum students.

On this survey, students were first asked to describe any changes they had noticed in the training practices at their practicum site since the last time they took the survey or within the last month, if it was their first time taking the survey. The first time the survey was administered, seven students answered this question. Six of the seven students indicated that their experience was too limited to answer the question, and one student mentioned changes that were irrelevant to this study. Intermediate practicum students should have experienced a new process of training during the first week of the semester due to the introduction of the new training storyboards and treatment integrity data sheets discussed earlier. However, the survey was administered several weeks after the introduction of the new training process, so the change may not have been salient enough at the time of the survey to evoke a response. Basic practicum students had not experienced any systematic changes to the training and supervision process relative to what they had already experienced in the system, so it is unsurprising that they did not note any changes.

The second time the survey was administered, four students indicated that no changes took place. One student indicated that s/he had improved his or her performance over the course of the semester and needed less supervision. One student indicated that everyone “gets scored by each other”. It is unclear what the student meant by this, but s/he may have been referring to the fact that practicum supervisors were collecting IOA data on monitoring scores. One student noted that there had been more hands-on training, and two students mentioned the new monitoring forms.

The new monitoring forms should have been used to collect data on every undergraduate practicum student’s performance and should have led to the provision more behavior-specific
feedback for each undergraduate student. However, not every undergraduate student noted the new monitoring form as a change. It is possible that undergraduate students did not know what was relevant and what was not relevant to note as a system change. It is also possible that, because undergraduate students were not the ones implementing the system change that the new data sheets did not present enough of a change to occasion survey responses. It is also possible that some undergraduate students did not receive feedback based on the new data sheets.

Students were also asked to explain which changes were most beneficial as well as changes that they felt were detrimental. The first time the survey was administered, one student discussed a beneficial change that was irrelevant to this study. No students mentioned a detrimental change. The second time the survey was administered, one student mentioned organization, one student mentioned everyone being scored, and two people mentioned the ability to ask questions as beneficial changes. One person also mentioned getting feedback from multiple people as a beneficial change. Nobody indicated that there were detrimental changes to the system.

Students were also asked the question, “Were there any changes you noticed that were beneficial, but could use further development? Please explain.” The first time the survey was administered, no students answered this question. The second time the survey was administered, one student indicated that there was a need for more attention to practicum students.

Students were also asked to rate their level of satisfaction with each of the following areas of training and supervision at their practicum site: Clarification of performance expectations, rationale, instruction, modeling, practice opportunities, ongoing feedback, goal setting, and evaluation. The first time the survey was administered, all responses for all areas indicated that respondents were “Somewhat satisfied”, “Very satisfied” or in between those two
response options. Average ratings for each area ranged from 3.9 (goal setting and evaluation) to 4.9 (modeling). The second time the survey was administered, all but two responses for all areas indicated that respondents were “Somewhat satisfied”, “Very satisfied”, or between those two response options. One respondent indicated the option between “Not satisfied” and “Somewhat satisfied” with practice opportunities, and one respondent indicated the same option for goal setting. Average ratings for each area ranged from 4.33 (goal setting) to 5 (evaluation).

Interestingly, goal setting was the lowest-rated area of training and supervision both times the survey was administered. Goal setting had not yet been targeted as part of this study. However, having objective and sensitive performance data makes it easier to set quantified performance goals. Even with overall high ratings the first time students took the survey, average ratings increased for all but two areas (modeling and ongoing feedback). Training storyboards and more detailed monitoring forms should have led to higher quality modeling and feedback. However, initial ratings for both areas were high (4.88 and 4.75, respectively) and remained between the ratings of 4 and 5 the second time the survey was administered.

The Undergraduate Practicum Student System Change Survey was designed to obtain information on undergraduate students’ detection of change as new approaches to training and supervision were introduced to the system. An additional purpose of the survey was to assess student satisfaction with their practicum training and identify areas in need of improvement. The first survey was not especially helpful for achieving this purpose, given that students did not identify system change and indicated high levels of satisfaction for each component of supervision and training. The second survey was more helpful in that some students did identify changes to the monitoring and scoring process, and satisfaction ratings were even higher than they were for the first administration of the survey. This increase in ratings may have been
influenced by the system-improvement efforts that were included in this project, but they also
could have been a function of time alone.

Graduate students’ opinions on new tool development. Graduate students who served as
supervisors at the practicum site were asked to complete surveys to assess their satisfaction with
new tools after they had the opportunity to use them in their supervision practices. Students
completed surveys regarding the storyboards that were implemented during the first week of the
new semesters and regarding the trial-by-trial monitoring form. Figure 4 depicts respondents’
answers to the question, “How likely is it that you will use the training week training storyboards
in the future as part of your training and supervision practices at [your practicum site]?

Figure 4. Results for the new tool satisfaction survey question on likelihood of future use of
training week training storyboard. The average rating for all survey respondents was 4.07.
Figure 5 depicts respondents’ answers to the question, “To what extent have the training week training storyboards had a positive impact on the way that you conduct supervision and training at [your practicum site]?"

Figure 5. Results for the new tool satisfaction survey question regarding positive impact of training week training storyboards on supervision practices. The average rating for all survey respondents was 4.

Ratings were somewhat lower for this question, indicating that some respondents were unlikely to use the storyboards by choice but likely to use them because of the system’s requirements. Respondents were asked to indicate challenges associated with using the storyboards. The most common challenge that respondents indicated were that the documents were too long or wordy. However, respondents were also asked to indicate the aspects of the storyboard that were particularly useful. Respondents noted that the scripts and rationale were especially helpful. These aspects of the storyboards are the aspects that make them lengthy documents. The length of the storyboards may have presented a difficulty for users because they
were developed shortly before training week and were therefore implemented with less than a weeks’ notice. More time to read over the storyboard and develop materials based on the training document prior to conducting training may decrease the challenges associated with length of the document.

Figure 6. Results for the new tool satisfaction survey question regarding likelihood of recommending training week training storyboards to colleagues. The average rating for all respondents was 4.14.

The trial-by-trial data sheet was implemented as a supplement to the existing monitoring form and grading system and included a job aid for summarizing the data. At the request of an advising faculty specialist who oversaw the practicum system, the satisfaction survey regarding the trial-by-trial data sheet was administered using an online survey software. It is likely a result of this change that the response rate for this survey was so low. Seven respondents completed the survey, one of whom declined to participate fully by selecting “I choose not to participate” when presented with the informed consent. Answers were only recorded for five of the remaining 6
respondents, indicating that one respondent exited the web browser without answering survey questions. Results for the remaining six respondents are illustrated in Figures 7, 8, and 9.

Average satisfaction ratings were lower for the trial-by-trial monitoring form, which could have been a function of the small sample size or the increase in difficulty that comes with using a more complex data collection system. Aspects of the form that respondents noted as difficult to use were that the amount of effort it took to take the data interfered with the provision of feedback, some components of the form being irrelevant to certain procedures, and difficulties making calculations after collecting data. Aspects of the data sheet that respondents noted as particularly useful were the objectivity afforded by the use of the tool, the thorough nature of the tool, availability of specific data to show practicum students, and the logical order of the data sheet.

![Histogram](image)

*Figure 7.* Results for the new tool satisfaction survey regarding likelihood of using the trial-by-trial monitoring form in the future at the practicum site. The average rating for all respondents was 3.8.
Figure 8. Results for the new tool satisfaction survey regarding the extent to which the trial-by-trial monitoring form had a positive impact on supervision and training practices. The average rating for all respondents was 3.6.

Figure 9. Results for the new tool satisfaction survey regarding the likelihood of recommending the trial-by-trial monitoring form to colleagues. The average rating for all respondents was 3.8.

Organization of materials. Prior to working toward improving the disconnects identified in this study, the documents related to the completion of job responsibilities at the practicum site were arranged in three main Google Drive folders with 36 sub-folders, many of which had a number of additional sub-folders. Thirty-four sub-folders at multiple levels in the file structure
had no documents in them. Forty-eight files in the practicum Google Drive had redundant file names with at least one other document (i.e., there were 48 files names that were repeated at least once). Another seven documents had the same name as another document but was saved in two different formats. Some files were blank. These redundancies and dead-end folders likely presented challenges for graduate students who attempted to access materials to aid them in completing their practicum responsibilities.

A clearly organized filing system was important for this project because the project was largely aimed at identifying and improving disconnects within the system, and many of the disconnects were addressed with the development of new tools for supporting effective training and supervision practices. The investigator recommended that practicum files be arranged into folders corresponding to each of the 21 job responsibilities outlined in the job model. She also recommended that a screening process be implemented so that any time a new document is added to the system materials it is screened for relevance and placed in the proper location by a member of the practicum support system.

As part of her master’s project, the senior system manager of the practicum support system has begun reorganizing files into folders corresponding with job responsibilities. She has also begun creating tools that allow users to access specific materials by clicking on links embedded into job aids. This file system is still in development.

GENERAL DISCUSSION

An analysis of the disconnects in the system involved in this study lends some support to the supervision system proposed by Garza et al. (2017). A job model, treatment integrity forms, and training storyboards were all developed to address various disconnects within the practicum. However, this study also shed light on challenges associated with improving an established
system (let alone a system in its infancy). This system was chosen for involvement in this study in part due to the eagerness of some of its members to develop new approaches to training and supervision and in part because it had been established for a number of years as a successful practicum site and its leaders had expressed a desire to become replicable. Even with these advantages and a year of improvement efforts, more time is needed to finish developing training and assessment materials for all of the job performances that students participate in over the course of their time in the practicum.

Some of the comments on the New Tool Satisfaction Surveys indicated that successful use of the new tools required time to learn. For example, some students mentioned difficulties collecting data using the trial-by-trial data sheet. It is reasonable to expect those using the data sheet to require repeated practice before reaching proficiency, given that each trial takes only seconds to complete and there are multiple pieces of data to collect regarding each trial. Students also mentioned some challenges related to the length of the training storyboards. Becoming more familiar with the training storyboards can reduce these challenges. However, repeated exposure and practice with these training materials requires effort. Therefore, it is important to introduce new approaches to training and supervision in a graduated fashion to avoid placing too much demand on those responsible for carrying out the changes.

Future system improvement efforts should focus on continuing the analysis of which skills should be taught at each level of undergraduate practicum as well as the conditions under which those skills should be taught at each level. After these differences in practicum levels are delineated, grading structures can be determined. Rather than abruptly changing the grading system, we recommend testing the materials that will be used for grading prior to their official use (as was done with the trial-by-trial data collection form). This would ensure that supervisors
become proficient in using the materials prior to connecting scores to grades. It would also give system managers the opportunity to consider how materials can be used to determine grades fairly. Additionally, projects in the upcoming semesters should focus on the development of training and assessment materials for each job responsibility outlined in the job model and included in the performance tracking sheet.

This study focused on the development of materials for alleviating disconnects in a university practicum. A logical next step would be to evaluate the effectiveness of the supervision system that is in the process of development. However, this kind of evaluation comes with challenges. As mentioned earlier, systems that adapt to environmental changes are more successful than those that maintain their current state without considering internal and external changes. A system that adapts is constantly in development, which presents challenges in identifying independent variables amenable to study. Furthermore, university practicum systems have regular turnover based on the academic calendar. Doctoral students typically spend most time in the system (approximately three-to-five years). Master’s students spend two years in the system. However, only one of those years is spent supervising undergraduate students. Undergraduate students may spend as few as 15 weeks in the system. Demonstrating experimental control while examining the effects of the supervision system on undergraduate and graduate student performance requires that valuable time be spent in baseline when evidence-based supervision practices could be implemented.

Few studies in the behavior analytic literature measure the effectiveness of systems as a whole. Instead, OBM researchers typically measure the effects of a single intervention on employees’ behavior. (Abernathy, 2014). Working within that paradigm, several dependent variables may be of interest. For example, managers of a training system might be interested in
the percentage of BST steps its trainers perform correctly. The system managers might also be interested in the extent to which undergraduate students implement programs with integrity. Perhaps the system managers would be interested in the mediums (e.g., vocal, written, graphic) through which supervisors provide feedback and the effectiveness of each medium. However, these dependent variables would be studied by examining the effects of independent variables that are only small components of the overall supervision system.

Abernathy (2014) recommended using results to measure the effectiveness of organization-wide performance systems for several reasons. Organizations often measure results but not behaviors. Positive and negative impacts of one job on another in an organization is often determined by the results of behavior, rather than the behavior itself. Employee innovation and flexibility may also be limited when behavior is measured rather than results (Abernathy, 2014).

However, it is also important to consider that some performances should not vary in how they are completed. Surgeons and dentists must be precise in their methodologies to achieve their desired results. Behavior analysts prescribe specific interventions, and their clients have the right to treatment as prescribed and to which they have consented (Cook et al., 2015). There is evidence that low levels of treatment integrity can have a negative impact on treatment outcomes (Wilder, Atwell, & Wine, 2006; Fryling, Wallace, & Yassine, 2012; Caroll, Kodak, & Fisher, 2013). However, the degree to which lapses in treatment integrity impact treatment effectiveness may depend on the specific procedure being implemented and the type of integrity error that is committed (Pipkin, Vollmer, & Sloman, 2010).

While much research remains to be done to examine which specific implementation errors have the most negative impact on treatment outcomes and for which procedures these errors have the most negative impact, the fact remains that clinicians make important decisions
regarding the data that are collected under the assumptions that those data are accurate, and the prescribed treatments are being implemented as written (Vollmer, Sloman, & Pipkin, 2008). Therefore, regardless of whether certain results in an organization are identified as appropriate for indicating the overall effectiveness of a system, some performance measures are necessary in clinical organizations—especially those organizations responsible for training the next generation of behavior analysts.

This is not to say that measures of results are not relevant to the training system or that they would be unhelpful. It is merely to say that any result measures would have to be analyzed in addition to performance measures, which would add responsibilities to members of the system. Considerations must be made regarding the value each measure adds to the system compared to the cost in human resources.

There are several results measures that may be of interest to system managers and amenable to experimental study. For example, system managers could examine the effects of a comprehensive supervision system on the percentage of possible job responsibilities each undergraduate and graduate student engages in. In other words, system managers could examine the effects of the supervision system on the breadth or variety of experience students gain in a single semester. The tracking sheet and assessment and training materials developed in this study would provide a means for identifying appropriate learning opportunities for undergraduate and graduate students and tracking their exposure to each available learning opportunity at the practicum site. Prior to development of these materials, system managers had no formal means of conducting this kind of analysis.

Clinical results are also of major significance to the organization and may be worthwhile to study. The training system exists to produce practitioners who are skilled in the provision of
behavior analytic services. The most important outcomes for the ECSE classroom in which the system operates are related to children’s academic and behavioral progress. Improvements in children’s rates of skill acquisition or problem behavior and increases in the cumulative number of targets met are indicators of the overall success of the system. However, these clinical measures can be influenced by variables other than the training system itself. For example, some of the children served in the classroom may have sleep problems that interfere with progress. It is also expected that some parents will integrate behavior analytic programs in their homes while others will not. Some children served in the classroom may receive additional services that affect their progress on the procedures that undergraduate and graduate practicum students implement in the classroom. Therefore, an analysis of clinical results with respect to system changes should consider the influence that other variables might have on academic and behavioral progress.

Result measures related to the professional success of undergraduate and graduate students may also be of interest to managers of the training system. For example, pass rates on the BCBA exam may be of interest. Job placement measures (e.g., percentage of students who obtain a job as a BCBA within one month of certification, percentage of applications that lead to an interview, percentage of graduates who obtain their first choice of job position) may also be of interest. Again, these measures may be affected by variables other than their practicum training, such as time spent studying for the BCBA exam, specific exam preparation techniques, time spent practicing for the interview, or preexisting connections with potential employers.

A substantial component of this project involved building the infrastructure necessary for measuring the success of the training system examined in this study. The performance of the undergraduate and graduate students who receive training within the system is a direct measure of training effectiveness. Prior to this study, the performances of interest within the training
system had not been identified and objective criteria for each performance had not yet been determined. Therefore, the system did not have the necessary tools for measuring training effectiveness. As a result of involvement in this study, the system now has some tools for measuring undergraduate and graduate student performance. System managers also have a framework for developing more materials for assessing and training additional performances.

**Limitations**

Several limitations should be taken into account when interpreting the results of this study. First and foremost, no experimental manipulations were done, which limits the conclusions that can be drawn regarding functional relationships among variables. This study was also conducted within a unique university practicum training system, and characteristics of that system strongly influenced the process by which changes were made to that system. Any effort to implement supervision systems within other organizations would also have to consider the unique characteristics of those organizations that are likely to impact the success of system improvement efforts. This presents a challenge when it comes to defining independent variables. When studying a supervision system, the independent variable becomes more complex than the system itself. There is a need to operationalize the system itself along with a decision-making process for determining how the characteristics of the larger system will impact the process by which new practices are integrated.

In this study, changes were made quickly due to the needs of its students. For example, rather than using storyboards to build materials to aid in the process of training delivery, supervisors used the storyboards themselves as a guide for training. While the storyboards presented information that several supervisors cited as useful, some supervisors also reported difficulties using the materials. These difficulties could likely have been avoided had further
development been done on the training. However, additional needs required consultation from the investigator, and several sub-projects were begun and will need to be carried on as multiple students’ master’s projects over the course of several years. Because so many projects were started but not finished, this project involved little evaluation of the results of each sub-project.
REFERENCES


Appendix A

Development Team Satisfaction Survey

Since the last development meeting (or within the last month, if this is your first time filling out this survey), was value added to the practicum training system that would not have been added without the involvement of the student investigator?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, not at all</td>
<td>Some value was added</td>
<td>A lot of value was added</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How likely would you have been to make the same systems changes you have made since the last development meeting/within the last month had it not been for the involvement of the student investigator?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not likely at all</td>
<td>Somewhat likely</td>
<td>Very likely</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On the table below, please list the changes that have been made to the undergraduate training system at West Campus since the last development meeting/within the last month, and, for each, indicate whether you would have made these changes without involvement in this study, and whether you would have made them as well or as in-depth as you did had you not been involved in this study.

<table>
<thead>
<tr>
<th>System Change</th>
<th>How likely is it that this change would have been made without the involvement of this study?</th>
<th>If the change would likely have been made independently of this study, how likely is it that the change would have been of as high of quality or as in-depth?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not likely at all</td>
<td>Somewhat likely</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1</td>
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<td>2</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Please describe any areas of the training system that need improvement that are not yet being addressed or could be addressed more thoroughly:

Please describe any aspects of this system improvement project that are going especially well:
Appendix B

Undergraduate Practicum Student System Change Survey

In which level of practicum are you currently enrolled at West Campus?

☐ Basic (first semester)  ☐ Intermediate (second semester)  ☐ Advanced (third semester)

Please describe any changes you have noticed in the training practices at West Campus since the last time you took this survey, or in the last month, if this is your first time filling out this survey (indicate if your experience in the system is too limited to answer this question):

Of the changes that you have noticed, which ones do you feel have been the most beneficial? Please explain:

Of the changes that you have noticed, are there any that you feel were detrimental? Please explain:

Were there any changes you noticed that were beneficial, but could use further development? Please explain:
Please rate your level of satisfaction with each of the areas of training and supervision at West Campus below:

<table>
<thead>
<tr>
<th>Area</th>
<th>Not Satisfied</th>
<th>Somewhat Satisfied</th>
<th>Very Satisfied</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarification of Performance Expectations (i.e., an explanation of what your role is in the practicum and what the standards are for satisfactory performance)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Rationale (i.e., explanation of why each job task is important)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Instruction (i.e., teaching of knowledge-based prerequisites to job tasks)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Modeling (i.e., demonstration of new skills or skills needing improvement)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Practice opportunities (i.e., chances to practice job tasks and receive feedback afterwards)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Ongoing Feedback (i.e., vocal, written, and/or graphic information about your performance that leads to performance improvement)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Goal setting (i.e., specific, measurable targets for improvement)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Evaluation (i.e., final assessment of mastery of your practitioner skills)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix C

New Tool Satisfaction Survey

How likely is it that you will use [tool name] in the future as part of your training and supervision practices at West Campus?

1  2  3  4  5
Not likely at all  Somewhat likely  Very likely

To what extent has [tool name] had a positive impact on the way that you conduct supervision and training at West Campus?

1  2  3  4  5
Not at all  A little  Very much

How likely is it that you would recommend [tool name] to colleagues who conduct training or supervision within their professions?

1  2  3  4  5
Not likely at all  Somewhat likely  Very likely

Please describe any aspects of [tool name] that were difficult to use or that could otherwise use improvement:

Please describe any aspects of [tool name] that were particularly useful:
Appendix D

Training Week Training Storyboards

### Performance

**OBTAIN RELEVANT INFORMATION FROM THE STUDENT'S BEHAVIOR PROFILE**

### Rationale

Much of the information you will need to effectively teach skills and minimize problem behaviors with each of the students you work with can be found in the student's behavior profile.

### Instruction

The behavior profile can be found on the first page of each student's protocol binder. The protocol binders are always on the binder shelf in the classroom.

### Modeling

<table>
<thead>
<tr>
<th>Do</th>
<th>Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide instructions and practice opportunities only for this skill. It is likely that trainees will be able to perform this skill without a model. See “practice” section for training procedures.</td>
<td>I'm going to ask you a few questions to make sure you are able to find the relevant information on a child's behavior profile.</td>
</tr>
</tbody>
</table>

### Practice

1. Tell the trainee that the binder can be found on the binder shelf (if the child is just arriving) or in the child's workstation (if the child is already at the site), and that the behavior profile can be found on the first page of the protocol binder. Ask the trainee:
   - Turn to the behavior profile
     - Wait 5 seconds. If the trainee does not find the behavior profile, provide verbal prompts every 5 seconds until he or she finds the behavior profile. On the data sheet, record the number of prompts required for the trainee to find the profile.
   - What are some of [child's] preferred items?
     - Wait 5 seconds. If the trainee does not list preferred items from the behavior profile, provide verbal and gestural prompts every 5 seconds until he or she says some of the child's preferred items.
   - What are some ELOs that might be appropriate to try with [child's name]?
     - Wait 5 seconds. If the trainee does not list preferred items from the behavior profile, provide verbal and gestural prompts every 5 seconds until he or she says some ELOs listed in the child's behavior profile.
   - What are some problem behaviors that [child] might engage in?
     - Wait 5 seconds. If the trainee does not list problem behaviors from the child’s behavior profile, provide verbal and gestural
prompts every 5 seconds until he or she says some of the child's problem behaviors.

2. If any prompts were necessary for the trainee to answer any of the above questions, provide another practice opportunity (as above) on the next day of training week. Provide these opportunities each day of training week until the trainee answers all questions without any prompts.

| Feedback | As trainees find and give the correct answers to the above questions, give praise statements such as, “right!”, “definitely!”, “perfect!”
If a trainee takes longer than 5 seconds to find the correct answer, point it out in the student's binder, and ask the trainee to say out loud the information to which you are pointing.
If a trainee gives an incorrect answer, tell/show the trainee where to find the relevant information in the student's binder, and ask the student to give information from the section to which you are pointing. |
| Evaluation | This performance will be evaluated using the integrity sheet for Day 1: Pairing & Structured Play.
This performance will be considered mastered if the trainee engages in all target responses without any prompts (i.e., the trainee earns 20 points on the feedback form). The trainee need only demonstrate this skill once for it to be considered mastered. |
| Delivery System(s) | This training will be delivered in vivo, using this training outline and the materials specified within. |
**Performance**

**PAIRING AND STRUCTURED PLAY:**

Pairing oneself with reinforcers while engaging in structured play

**Rationale**

Structured play allows you, as a tutor, to present learning opportunities to a child while taking steps to make yourself a reinforcer for the child. Without engaging in activities that pair you with existing reinforcers, there is a chance that your presence would come to evoke problem behavior. This is because you will inevitably be paired with high-effort tasks, as your ultimate goal is to teach your client new skills. We try to make learning as fun as possible to decrease the likelihood of problem behavior and maximize our clients' contact with reinforcers.

**Instruction**

To engage in structured play, you will need to know what items have functioned as reinforcers for the learner, items that are aversive or non-preferred, toileting protocols, allergies, and what kinds of problem behaviors you might expect from the client. You will also need to know which skills the student regularly demonstrates so that you can integrate learning opportunities into play without placing difficult demands on the child. This information can all be found in the student's behavior profile. We already practiced finding some of this information when we looked at the student's behavior profile.

**Modeling**

<table>
<thead>
<tr>
<th>Do</th>
<th>Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Turn to the student's behavior profile</td>
<td>1. It is helpful to have the student's behavior profile handy when engaging in structured play and establishing yourself as a reinforcer because you want to make sure you don't place any demands on the student that will be too hard and because you want to make sure that the items you pair yourself with have reinforcing value.</td>
</tr>
<tr>
<td>2. Use the items the trainee identified as reinforcers (in the earlier exercise) to engage in the type(s) of play indicated as preferred for the child. While doing so, explain the type of play in which you are engaging and how you are choosing to keep playing with the same toy or switch toys, and how you are choosing to keep engaging in the same activity or switch activities</td>
<td>2. When I [describe activity], that's [anticipatory play, interactive play, social play, pretend play]. [Child's Name] really likes [specific activity]. I can tell (s/he) is enjoying this activity because [describe child's behavior] OR I'm going to switch activities because s/he is [describe child's behavior]</td>
</tr>
<tr>
<td>3. Open the student's binder to the list of mastered skills. Show the trainee where to find the list of skills. Begin to implement learning opportunities into structured play.</td>
<td>3. [Child's Name] is really good at [specific skills]. You can see that in the behavior profile. If prompting was required for student to successfully</td>
</tr>
</tbody>
</table>
4. Present at least 4 learning opportunities per minute, while varying the type of learning opportunity based on the skills listed in the student's behavior profile.

Engage in ELO, say:
Notice how I delivered the reinforcer right away, even though the response was prompted. We do this for every student, unless otherwise specified. Be sure to read each student's behavior profile carefully for student-specific protocols.
If prompting was not required for student to successfully engage in ELO, say: [Child's name] did great with these ELOs.
If prompting is required while doing ELOs with a student, still provide a reinforcer immediately after the prompted response. We do this for every student, unless otherwise specified. Be sure to read each student's behavior profile carefully for student-specific protocols.

4. Notice how many LOs I present. We try to shoot for at least 4 learning opportunities each minute, and get as much variety as we can to make it fun and teach a variety of skills.

Practice

1. On the first day of training week, as immediately as possible after the trainee has the opportunity to observe as the trainer models structured play, the trainee will engage in structured play for five minutes while the trainer observes and provides prompts/immediate feedback as necessary.
   - Provide immediate prompts to the trainee under the following circumstances:
     - The trainee delivers more than 1 demand that is not on the child's behavior profile as an ELO or mastered skill, and the skill requires prompts for the child to demonstrate
1. During the first practice session, the trainer will provide feedback during the practice session, as possible. For example, if the trainee is using a toy, but the student seems disinterested, the trainer might say, "try a different toy. S/he really likes (name of toy)". If the trainee does not immediately provide a reinforcer after the student completes an ELO, the trainer might say, "remember to provide reinforcers immediately after successful ELOs, even when prompted." Conversely, if the trainee is engaging in appropriate play activities, the trainer might say, "it looks like [child's name] is having fun! Great idea to do [specific activity]"

2. On the first day of training week, at the next available opportunity (after the trainee has the opportunity to practice engaging in structured play with coaching from the trainer), the trainer will observe the trainee as he or she engages in structured play for five minutes. The trainer will collect data on the trainee's performance during the observation and provide feedback as immediately as possible after the 5-minute observation.
   - On the data sheet, for each 10-second observation interval, record whether the trainee places a difficult task demand, whether the trainee engages with the student (circle “E” if the tutor does not engage with the student at any point during the interval), and whether the trainee missed any opportunities to follow the child's initiation of an activity.

   - On the data sheet, tally the number of learning opportunities the trainee presents during each one-minute observation interval.

   - On the data sheet, tally the number of learning opportunities for which the trainee did not reinforce the learner's correct response (even when the learner was prompted).

3. Repeat the 5-minute observations and feedback until the trainee presents at least four learning opportunities every minute, engages with the student during every 10-second observation interval, engages in 5 minutes of structured play without presenting difficult task demands, and goes without reinforcing a maximum of 3 successful LO completions.
2. During subsequent practice sessions, the trainer will provide feedback as immediately after the practice session as possible. The trainer will use the integrity data sheet/tutor feedback form to guide specific, objective feedback (e.g., “you placed 3 difficult demands on [student]”, “there were 2 intervals in which you did not engage in play with [student]”) as well as evaluative feedback (e.g., “that’s not many at all. Great job!”, “That’s an improvement from last time!”)

**Evaluation**

A treatment integrity form for structured play/pairing will be used to evaluate performance mastery for structured play/pairing. The performance will be considered mastered when all requirements specified in the data sheet have been met without prompts for 5 consecutive minutes in a single observation. If the trainee does not successfully meet the requirements, specific feedback will be given, and the trainer will model the correct responses, noting the critical aspects of the model. The learner will then have the opportunity to practice with coaching until no prompts are necessary during a 5-minute play session.

A formal evaluation of this skill will be completed during the final day of Training Week. If the evaluation indicates that further modeling/training is necessary for this skill (i.e., the student scores 3 or lower on any element of this skill on the data sheet), more opportunities for coaching and feedback will be provided throughout the practicum semester.

**Delivery System(s)**

PowerPoints will be used to deliver instruction during Pre-Practicum seminar. An Instruction sheet and treatment integrity data sheet will be provided to the trainee to allow him or her to see the critical aspects of the performance.
ADLs
Providing the appropriate level of prompting when assisting a child with activities of daily living (ADLs).

Rationale
We want our clients to be self-sufficient, to the extent possible. When we provide too many prompts for activities of daily living, the client may come to depend on those prompts. [Give an anecdote (e.g., "I've seen children stand at the door and wait for it to be opened when they are perfectly capable of opening the door. Think of how confined your life would be if you were dependent on others to open doors for you!")]

At West Campus, we'll assist kids with activities of daily living such as toileting, washing hands, and putting on/taking off a jacket as the kids arrive and depart from school.

Instruction
The steps to engaging in activities of daily living are fairly straightforward, as we all have to engage in them ourselves. However, there are some protocols you should be aware of. When changing a diaper you must wear gloves. If a diaper has solid waste, put it in a plastic bag and tie it before disposing of it. If a child is potty training, be sure to follow his or her toilet training protocol.

Modeling

<table>
<thead>
<tr>
<th>Do</th>
<th>Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide only instructions and prompts for this skill. Trainees should have already been exposed to a model of this skill during pre-practicum, and should be familiar enough with the skill to learn it with only instructions and prompts.</td>
<td>I am going to let you walk [child's name] through [skill (e.g., washing hands, changing a diaper)]. Feel free to ask for help if you need it. Otherwise, I will provide prompts as necessary. Remember to give the child an opportunity to respond independently before providing prompts. If prompts are necessary, remember to follow the prompting protocol for this individual, and repeat the instruction with every time you provide a prompt.</td>
</tr>
</tbody>
</table>

Practice
1. On the first opportunity for a child to complete an ADL (upon the child's arrival, when "bathroom" is listed in the student's schedule, when the child requests to use the restroom, or as the child is departing the classroom), provide the instructions listed above in the instructions section, and give the trainee the information listed in the "Say" column of the modeling section.

Provide prompts under the following circumstances:
- The trainee is about to change a diaper without putting on gloves
- The trainee is about to throw away a soiled diaper without bagging it
- The trainee does two steps of the ADL without giving the child an opportunity to engage in the task independently
- The trainee provides two prompts without repeating the SD
- The trainee does not follow the specified prompting protocol
2. On subsequent opportunities for the child to complete an ADL during training week, allow the trainee to lead the child through the completion of the ADL while collecting data. On the data sheet, tally:
   - The number of prompts delivered before providing the student with an opportunity to respond independently
   - The number of times the trainee failed to follow the prompting protocol (usually least-to-most)
   - The number of prompts the trainee delivers without repeating the $S^P$
   - Assign a score based on the point system indicated on the data sheet

3. Provide feedback as immediately as possible after each measurement of the trainee's performance on assistance with ADLs. Continue to repeat practice opportunities until the trainee scores 4 or better on each element of the ADL data sheet.

   During practice sessions, the trainer will provide feedback as immediately after the practice session as possible. The trainer will use the integrity data sheet/tutor feedback form to guide specific, objective feedback (e.g., "you prompted without delivering the instruction three times", "there were two occasions on which your prompts were out of order") as well as evaluative feedback (e.g., "That's pretty high; let's make some goals for decreasing that error." "That's an improvement from last time!")

   Below are some potential feedback statements to use under specific circumstances:

   If a trainee is about to change a diaper without using gloves, remind him or her that there is a protocol for his or her protection. For example: "Remember that the protocol when dealing with bodily fluids is to wear gloves. This is for your protection and the protection of others at the school"

   If a trainee is about to throw a dirty diaper away without bagging it, remind him or her that the classroom environment is small, and it's important to keep a pleasant environment for staff and students. For example: "Please bag any diapers with solid waste prior to throwing them away. This way, we can avoid the smell getting into the classroom."

   Conversely, if the trainee follows the correct protocols, provide descriptive praise statements. For example: "Thank you for remembering your gloves. This will keep you and your colleagues and students safe." "Thank you for bagging that diaper!"

   If a trainee is providing excessive prompts or failing to provide opportunities for the child to engage in prompts independently, remind the trainee that the goal is to facilitate independence. For example: "Remember that we don't want [child's name] to depend on someone else to wash her hands. Give her an opportunity to respond independently so that she can learn."

   Conversely, if the trainee allows for opportunities for independent engagement and follows the prompting protocol, provide descriptive praise statements. For
<table>
<thead>
<tr>
<th>Evaluation</th>
<th>A formal evaluation of this skill will be completed during the final day of Training Week. If the evaluation indicates that further modeling/training is necessary for this skill (i.e., the student scores 3 or lower on any element of this skill on the data sheet), more opportunities for coaching and feedback will be provided throughout the practicum semester.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery System(s)</td>
<td>This training will be delivered in vivo, using this training outline and the materials specified within.</td>
</tr>
</tbody>
</table>
PROCEDURE SETUP

Given a procedure protocol, the trainee successfully identifies the materials necessary for the procedure, the discriminative stimulus, the circumstances under which the pupil's response will be considered correct, the circumstances under which a pupil's response would be considered incorrect, and the appropriate consequences for a pupil's correct and incorrect response.

Rationale

It is important to be able to read a protocol and set up the procedure according to what is written in the protocol. This way, the setup of the procedure will be consistent across tutors. Additionally, it’s important for all tutors to use the same criteria when counting a response correct or incorrect. Otherwise discrepancies in the data can occur that are due to differences between tutors’ definitions of correct and incorrect responses rather than actual differences in pupil performance. We want our data to reflect changes in pupil performance, rather than differences between tutors’ interpretations of the protocol. You also should be familiar with the consequences for incorrect responding verses correct responding. Differential reinforcement is the most essential component of our skill acquisition procedures. You will notice that your effective behavior in the booth is reinforced by your pupils’ success as well!

Instruction

You should be familiar with how the procedures for West Campus are written because of your experience in the pre-practicum course. You will find every procedure in your pupil’s schedule in his or her program binder. For each procedure, before beginning, identify the necessary materials, the discriminative stimulus (or stimuli), which responses are considered correct, which responses are considered incorrect, and how to consequate correct and incorrect performance.

Modeling

<table>
<thead>
<tr>
<th>Do</th>
<th>Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use only instructions, prompts (as necessary), and practice opportunities to teach this skill. Trainees should have exposure to procedures though pre-practicum, and should have the prerequisite skills necessary for reading through the procedure and identifying the relevant components.</td>
<td>I’m going to have you look through the procedure binder, identify the procedure that you should be following, and ask you a few questions to make sure you have all the information you need to run the procedure with integrity (that is, as it is written).</td>
</tr>
</tbody>
</table>

Practice

1. Once the trainee opens the binder to the relevant procedure, give him or her one minute to read the relevant phase of the procedure. After one minute has elapsed, ask him or her the following questions:
   - What materials will you need to set up this procedure?
     - Wait 5 seconds. If the trainee does not begin to tell you the materials necessary for the procedure within 5 seconds, provide verbal or gestural prompts every 5 seconds until he or she begins to say the relevant information. Tally the number of prompts on the data sheet.
   - What SD will you use for this procedure?
Wait 5 seconds. If the trainee does not begin to tell you the S0 for the procedure within 5 seconds, provide verbal or gestural prompts every 5 seconds until he or she begins to say the relevant information. Tally the number of prompts on the data sheet.

- What does the pupil have to do for his or her response to be considered correct?

  Wait 5 seconds. If the trainee does not begin to tell you what a correct response looks like for the procedure, provide verbal or gestural prompts every 5 seconds until he or she begins to say the relevant information. Record the number of prompts on the data sheet.

- What should you do if the pupil engages in the correct response?

  Wait 5 seconds. If the trainee does not begin to tell you what to do when the pupil emits the correct response within 5 seconds, provide verbal or gestural prompts every 5 seconds until he or she begins to say the relevant information. Record the number of prompts on the data sheet.

- What are some examples of an incorrect response for this procedure?

  Wait 5 seconds. If the trainee does not begin to tell you what would constitute an incorrect response. If the trainee does not begin to tell you what would constitute an incorrect response within 5 seconds, provide verbal or gestural prompts every 5 seconds until he or she begins to say the relevant information. Record the number of prompts on the data sheet.

- What should you do if the pupil engages in the incorrect response?

  Wait 5 seconds. If the trainee does not begin to tell you what to do when the pupil emits an incorrect response within 5 seconds, provide verbal and gestural prompts every 5 seconds until the trainee begins to say the relevant information. Record the number of prompts on the data sheet.

2. Repeat the practice exercise (as written above) for all procedures in the pupil’s binder, just before providing training on the implementation of the procedure. If the trainee needs prompts to correctly answer any questions for the last procedure covered, continue presenting practice opportunities in the same manner on the following day of training week. Do this until the trainee identifies all relevant information without prompts for two procedures.
| Feedback | As trainees find and give the correct answers to the above questions, give praise statements such as, "right!", "exactly," "yes!"  
If a trainee takes longer than 5 seconds to find the correct answer, point it out in the pupil's binder, and ask the trainee to say out loud the information to which you are pointing.  
If a trainee gives an incorrect answer, tell/show the trainee where to find the relevant information on the procedure sheet, and ask the student to give information from the section to which you are pointing. |
| Evaluation | This performance will be formally evaluated on the last day of training week, using the integrity sheet for Day 2: Procedure Implementation.  
On the last day of training week, a trainer will choose a random procedure from the child's binder and ask the trainee to answer the questions indicated above in the "practice" section. The trainer will provide 5 seconds for the trainee to answer each question and record whether or not the trainee gives the correct answer. No prompts will be delivered during the evaluation.  
This performance will be considered mastered when, during an evaluation, the trainee answers all questions correctly without prompts. The trainee need only perform this task once without any prompts for it to be considered mastered.  
If the trainee does not master this performance during training week, further practice opportunities will be delivered during the first week of the practicum semester. |
| Delivery System(s) | This training will be delivered in vivo, using this training outline and the materials specified within. |
## Performance

**ANTECEDENT CONDITIONS**

Given a procedure binder and a student's schedule, the trainee successfully sets up the materials required for the procedure as the protocol specifies while simultaneously ensuring that the student is engaged in an activity during setup time.

## Rationale

Setting up a procedure as it is written helps ensure consistency for the learner, and allows the BCBA to be confident that he or she is aware of the contexts under which skills are being demonstrated or not demonstrated. This will be a specific focus during training week because it can sometimes be a challenge to set up procedures quickly while maintaining the student's engagement and preventing problem behavior. We'll take steps to make sure you can set up a procedure efficiently during training week so that it's less overwhelming to do when you're on your own.

## Instruction

To set up antecedent conditions, you'll simply locate the materials specified in the procedure (which we did earlier), set them up within 20 seconds, and make sure that, while you are setting up the procedure, the student does not wait idly for more than 5 seconds.

## Modeling

<table>
<thead>
<tr>
<th>Do</th>
<th>Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Set up the procedure within 20 seconds and while keeping the student engaged by interacting with him or her at least every 5 seconds. As you locate the materials, point out where you found them. As you set up the procedure, note any specific aspects of setup that are particularly important.</td>
<td>1. Procedure materials can be found in each student’s procedure bin. I'm setting up the [materials] in this manner because the procedure says [instructions from procedure]</td>
</tr>
<tr>
<td>2. After setting up the procedure, note how you interacted with the student to keep him or her engaged during the setup process.</td>
<td>2. Notice how I kept interacting with [child's name]. I wanted to reinforce her independent play while also preventing faulty stimulus control that could occur if she closely watched the setup process.</td>
</tr>
</tbody>
</table>

## Practice

1. After demonstrating the procedure setup, remove the procedure materials from the workspace, and have the trainee set up the materials. For the trainee's first practice opportunity, ask the trainee to set up the materials while you time him or her. For the first opportunity, tell the trainee not to worry about interacting with the child while setting up the materials. You can provide that interaction. After the trainee sets up the procedure, tell the trainee how long it took him or her to set up. Repeat practice opportunities in this manner until the trainee sets up procedure materials in 30 seconds or fewer for two consecutive procedures (these will likely be two different procedures).

2. After the trainee demonstrates fluent procedure setup, provide practice opportunities in which the trainee is responsible for engaging with the student while simultaneously setting up the procedure. Observe as the trainee sets up the procedure, and take data using the “Antecedent Conditions” section of the Day 2 Tutor Feedback Form. Note whether the student is watching while the trainee sets up the procedure, how often the child sits idly for more than 5 seconds, and how long the procedure is taking the trainee to set up. Provide feedback immediately following procedure setup. Repeat practice opportunities.
<table>
<thead>
<tr>
<th>Feedback</th>
</tr>
</thead>
</table>
| During the first practice opportunities (in which the trainee is only responsible for setting up the procedure materials), tell the trainee how long it took him or her to set up the procedure, and that the goal is to set up procedures in 20 seconds or less. Then give an evaluative statement, such as, "you're close to that goal!" or "you set up the procedure even faster than that!" or "you'll want to focus on getting set up faster so that we can maximize learning time and reduce idle sitting."

<table>
<thead>
<tr>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>This performance will be formally evaluated during the last day of training week, using the data sheet for Day 2: Procedure Implementation. On the last day of training week, a trainer will observe the trainee while he or she sets up and implements procedures. The &quot;Antecedent Conditions&quot; skillset will be considered mastered if, during the final evaluation on training week, the learner scores a &quot;5&quot; on the data sheet. If the learner scores less than 5, supervisors will provide additional coaching on these skills throughout the practicum semester.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delivery System(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>This training will be delivered in vivo, using this training storyboard and the materials specified within.</td>
</tr>
</tbody>
</table>
### INFORMAL PREFERENCE ASSESSMENT

#### Rationale
We do informal preference assessments periodically to make sure that the items we're delivering after the pupil engages in a correct response have the potential to reinforce correct responses. If we don't have items that function as reinforcers, we run the risk of extinguishing responding or rendering our training ineffective. It can also be disappointing as a tutor when you "reinforce" a correct response, but the pupil is clearly having no fun engaging with the intended reinforcer.

#### Instruction
To do an informal preference assessment, simply take two items from the child’s reinforcer bin, present them within the pupil’s line of sight, and allow the pupil to point to or select one of the items. If the pupil does not select an item, present two different items. Repeat until the pupil chooses an item.

#### Modeling
<table>
<thead>
<tr>
<th>Do</th>
<th>Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Take two items from the pupil's bin and present them to the pupil.</td>
<td>1. I've seen [child] play with these items, so I'll try these first. Notice how I'm holding the items so that [child] can see them</td>
</tr>
<tr>
<td>2. IF the pupil chooses an item, set the item that was not chosen aside, and allow the pupil to play with the item for 3-5 seconds. Then ask for the item back.</td>
<td>2. My turn!</td>
</tr>
<tr>
<td>Use the item as a reinforcer as you follow the procedure (see below).</td>
<td>We'll use this item to reinforce correct responses on [procedure name].</td>
</tr>
<tr>
<td>IF the pupil does not choose an item, select two different items from the child's bin, and repeat steps 1 and 2</td>
<td>[Child] didn't seem interested in either one of those items. Let's try these ones.</td>
</tr>
<tr>
<td>3. Try to provide a model of what to do when the pupil chooses an item as well as a model of what to do when the pupil does not choose an item</td>
<td></td>
</tr>
</tbody>
</table>

#### Practice
1. After you model for the trainee how to run a procedure (see the section below), provide an opportunity for the trainee to conduct an informal preference assessment. Collect data on the trainee’s performance using the Tutor Feedback Form for Day 2: Procedure Implementation. Provide feedback before the trainee practices running a procedure. Coach the trainee until he or she identifies an item that is likely to reinforce the student’s responding. Repeat this practice opportunity (providing feedback immediately following the trainee’s completion of a preference assessment) until the trainee earns all 5 points as indicated on the “Preference Assessment” section on the data sheet on two consecutive occasions.

2. After the trainee successfully demonstrates all components of the informal preference assessment (as indicated on the data sheet), continue to observe and collect data on this performance as you observe the trainee running procedures with a student. Provide feedback at the end of your observation (rather than immediately following each preference assessment).
<table>
<thead>
<tr>
<th>Feedback</th>
<th>Give behavior-specific feedback (e.g., &quot;you selected two items from the bin, waited for the student to make a selection, and used the selected item as a reinforcer. That was exactly right!&quot; &quot;[Child's name] did not select an item, but you presented the [specific toy] after each trial. When [child's name] does not select an item, you should choose different items and repeat the process until you see a selection response.&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation</td>
<td>This performance will be formally evaluated during the last day of training week, using the data sheet for Day 2: Procedure Implementation. On the last day of training week, a trainer will observe the trainee while he or she sets up and implements procedures. The &quot;Preference Assessment&quot; skillset will be considered mastered if, during the final evaluation on training week, the learner scores a &quot;5&quot; on the data sheet. If the learner scores less than 5, supervisors will provide additional coaching on these skills throughout the practicum semester.</td>
</tr>
<tr>
<td>Delivery System(s)</td>
<td>This training will be delivered in vivo, using this training storyboard and the materials specified within.</td>
</tr>
</tbody>
</table>
### PERFORMANCE

**RUNNING A PROCEDURE (Attending, SD, and Consequence)**

Given a procedure, the relevant materials, and an identified preferred item (putative reinforcer), the trainee will establish the student's attending, deliver the relevant discriminative stimulus as written, and provide the appropriate consequence for the student's correct or incorrect response as outlined in the procedure document.

### RATIONALE

This set of skills is the core of your work here as a tutor at West Campus. BCBA and MA students write and prescribe procedures based on their expertise and evaluate students' progress on those procedures assuming that they have been run as they are written. When procedures are not followed, or attending is not established before running each trial, behavior analysts' data are not valid, and therefore data-based decisions become impossible to make.

### INSTRUCTION

You have already identified the necessary components for running the procedures earlier when you did procedure setup. Now, we focus on making sure that the student is attending, running the trial, and providing the appropriate consequence based on the student's response. If the student is not attending, as indicated by eye contact or "quiet hands", you can do some ELOs or increase the salience of the discriminative stimulus. You want to avoid saying the student's name before every trial. After delivering the SD, give the student a chance to engage in the response. For correct responses, deliver the tangible reinforcer immediately while pairing it with praise in a lively tone. For incorrect responses, proactively block the incorrect response if possible, and engage in error correction by using the appropriate prompt hierarchy. Move through the prompt hierarchy as necessary, allowing 3-5 seconds for the student to respond each time. Each time you move to the next prompt, you'll repeat the discriminative stimulus. Do not reinforce incorrect responses.

### MODELING

Run all prescribed trials for the procedure. Point out the essential aspects of the procedure and process, as appropriate (see "say" section for examples).

<table>
<thead>
<tr>
<th>Do</th>
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<tbody>
<tr>
<td>Attending: I could tell [child's name] was attending because s/he was looking at me and had quiet hands OR [child's name] was looking away from the materials, so I did some ELOs quickly to make sure I had his attention.</td>
<td>Say</td>
</tr>
<tr>
<td>SD: For this procedure, the SD can vary, as indicated by the program specialist, which is why I used multiple SDs.</td>
<td></td>
</tr>
<tr>
<td>Reinforcer: [Child's name] seemed to lose interest in the [specific toy], so I just did another preference assessment to see if something else might work.</td>
<td></td>
</tr>
<tr>
<td>Consequence: This response was incorrect, so even after going through the prompt hierarchy, we don't deliver a reinforcer. We move on to</td>
<td></td>
</tr>
</tbody>
</table>
another trial (or ELO) so that we can reinforce a correct response. [Child's name] really likes when you engage in praise with high excitement, so make sure you have a party when he gets it right.

<table>
<thead>
<tr>
<th>Practice</th>
<th>Feedback</th>
</tr>
</thead>
</table>
| 1. Allow the trainee to run the procedure after observing your implementation. Provide live coaching while using the data sheet for Day 2: Procedure Implementation ("Attending/SD" and "Consequence" sections) as a guide for providing feedback (you need not collect data during the initial practice phases. When feedback is mostly positive (3 or fewer corrective statements in a session), move to the next practice level.  
2. Conduct a 5-minute observation while collecting data using the Day 2: Procedure Implementation data sheet (paying specific attention to the "Attending/SD" and "Consequence" sections), and provide feedback as immediately as possible after the observation. Complete this step until the trainee makes 3 or fewer errors during an observation.  
3. Conduct a 10-minute observation while collecting data using the Day 2: Procedure Implementation data sheet ("Attending/SD" and "Consequence" sections). Provide feedback as immediately as possible after the observation. Continue these practice opportunities as available until the end of training week. | During the initial practice phase, provide live feedback as often as feasible using quick statements, such as, "great neutral SD," "perfect use of the prompt hierarchy," "remember to praise excitedly," "try another preference assessment," etc.  
After the 5-minute and 10-minute observation periods, describe the data you collected and how it compares to the desired performance. For example, "You established student attending for about half of the trials I observed. That makes it hard to determine whether the incorrect responses were due to a lack of attending or the need to build the skill. Next time, make sure you do some ELOs to capture [child's name]'s attention before the trials." "You did a great job following the protocol and saying the SD as written every time." Provide additional modeling as necessary (i.e., if the same error is made repeatedly, or 4 or more errors occur during a session, or at your own discretion). |

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<td>This performance will be formally evaluated during the last day of training week, using the data sheet for Day 2: Procedure Implementation. On the last day of training week, a trainer will observe the trainee while he or she sets up and implements procedures. The &quot;Running a Procedure&quot; skillset will be considered mastered if, during the final evaluation on training week, the learner scores a &quot;5&quot; on the data sheet. If the learner scores less than 5, supervisors will provide additional coaching on these skills throughout the practicum semester.</td>
<td>This training will be delivered in vivo, using this training storyboard and the materials specified within.</td>
</tr>
</tbody>
</table>
**Performance**

**FILL OUT DATA SHEET PRIOR TO RUNNING PROCEDURES**

Given the student's schedule and data sheets from previous sessions, the tutor correctly fills out data sheets prior to running each procedure.

**Rationale**

Behavior analysts make programming decisions based on the data collected on their clients' performance. Here, as with most organizations that practice ABA, there are not enough human resources to have observers and data collectors in addition to behavior technicians to run programs. It is important, therefore, that you become fluent in collecting data and running procedures at the same time. To make this easier, there are some pieces of the data sheets you can fill out prior to running the procedure. We're going to focus on these components now.

**Instruction**

To fill out the portions of the data sheets that are relevant prior to running procedures, you will look at the schedule, identify the number of times the procedure is run throughout the day, and write your initials and date on a corresponding data sheet for the procedure as many times as the procedure is written into the student's schedule. For some procedures, you will indicate the prompt level in the corresponding box indicated on the data sheet. There are also some procedures for which you will write the targets for the specific phase in the corresponding box on the data sheet. To determine the phase you will need to run, you'll look at the procedure to identify the phase change criterion, and the data that have been collected thus far to determine whether it is time to start a new phase or remain on the current phase of the procedure.

**Modeling**

<table>
<thead>
<tr>
<th>Do</th>
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<tbody>
<tr>
<td>1. Walk through the process of filling out the data sheet for one procedure, using the trainee's initials. As you fill out the data sheets, point to where you are accessing the necessary information in the child's binder, and say out loud why you are putting certain information into the data sheet.</td>
<td>1. I see [child's name]'s schedule that the first procedure that will be run is [name of procedure]. This procedure is run [x] times throughout your shift. I'm writing your initials and the date on the data sheet for [name of procedure] [x] times because you are going to run the procedure [x] times throughout your shift. I can see on the procedure that the phase changes when [describe phase change criteria], and I can see on previous data sheets that [child's name] left off on [phase number] and [did/did not] meet those phase change criteria. So, we're going to start on phase [x], and indicate that phase number on the data sheet here. For this procedure, prompt level [is/is not] applicable</td>
</tr>
</tbody>
</table>
because [describe rationale], so I [am/am not] going to write the prompt level here
For this procedure, targets [are/are not] relevant to write in this box because [describe rationale], so I [am/am not] going to indicate the targets here.

| Practice | 1. After modeling the process of filling out data sheet(s) for one procedure, provide an opportunity for the trainee to fill out the data sheet(s) for another procedure. Watch closely, and show the trainee where to access the necessary information in the student's binder if the trainee pauses for more than 10 seconds or so.
2. Repeat the above process for the remaining procedures, but without providing coaching. Check that the data sheets are filled out correctly by matching the trainee's work to the first section of the Tutor Feedback Form for "Day 3: Data Collection" titled "Skill; Filling Out Data Sheet (before procedure)". If any pieces are missing or filled out incorrectly, provide immediate feedback. |
| Feedback | Provide specific, positive feedback for any pieces of the data sheet that are filled out correctly. For example, "you filled out your initials and the date in all the relevant places. Great job" "I see that the phase is filled out correctly. Excellent!"
Provide specific, corrective feedback for any pieces of the data sheet that are not filled out correctly, including what was done incorrectly and what should be done instead. For example, "You filled out your initials and date for this procedure twice, but it's actually in the schedule three times during your shift. It's helpful to fill out all of your data sheets at the beginning of your shift so that you don't have to multitask more than necessary when you're trying to run procedures." "You didn't fill out the targets for this phase in these boxes here. Be sure to do that so that you can balance the number of times you're running each target." |
| Evaluation | This performance will be evaluated using the integrity sheet for Day 3: Data Collection & Codes in the section titled "Skill: Filling Out Data Sheet (before procedure). This performance will be considered mastered if the trainee engages in all target responses without any prompts for 3 procedures in the student's schedule (i.e., the trainee earns 5 points on the feedback form for at least 3 procedures). If these criteria are not met during training week, additional support will be provided during the beginning of the semester. |
| Delivery System(s) | This training will be delivered in vivo, using this training outline and the materials specified within. |
**Performance**

**FILL OUT DATA SHEET WHILE RUNNING PROCEDURES**

Given the criteria for a student’s correct response, the tutor accurately marks whether each response was correct or incorrect and what level of prompt was needed for the student to engage in the correct response.

**Rationale**

BCBAs depend on accurate data for making decisions regarding each student’s programming. When the data are accurate, it can prevent you from running procedures that are too easy or too difficult for the student, which allows you, as a tutor, to engage in practices that are most helpful to your students.

**Instruction**

For each trial, you'll indicate whether the response was correct by marking a "+" or incorrect by marking a "-". If the response was incorrect, you'll indicate what level of prompt was necessary for the student to engage in the correct response. Circle G for gestural prompt, P for a partial physical prompt, or F for a full physical prompt.

**Modeling**

<table>
<thead>
<tr>
<th>Do</th>
<th>Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Run a procedure while collecting data for 5 trials. Have the trainee collect data simultaneously.</td>
<td>1. I'm going to run [procedure name] and collect data. At the same time, I'm going to have you collect data, and afterwards we'll calculate IOA. This way, we can make sure you can identify correct from incorrect responses and correctly mark the correctness of the response and prompt level on the data sheets.</td>
</tr>
<tr>
<td>2. Calculate IOA (Agreements/Total number of trials * 100)</td>
<td>2. We agreed on [x] number of trials. By dividing that number by the total number of trials and multiplying by 100 we get [specific IOA percentage].</td>
</tr>
<tr>
<td>3. If IOA was 80% or above for both correctness of the responses and prompt levels, have the trainee run the remaining 5 trials of the procedure while collecting data simultaneously.</td>
<td>3. We're shooting for 80% or better IOA. We [reached/didn't reach that goal]. Let's [try again/have you try running the procedure while collecting data, and I'll take IOA data].</td>
</tr>
<tr>
<td>If IOA was below 80%, repeat steps 1 and 2 until 80% or better IOA is achieved.</td>
<td>4. I'm going to observe as you run procedures while collecting data. I'm going to continue collecting IOA data, and we'll calculate IOA after each procedure to make sure you're able to collect data and</td>
</tr>
</tbody>
</table>
5. Once IOA is reliably at 80% or above, observe the trainee’s procedure implementation while collecting data using the “Day 2: Procedure Implementation” Tutor Feedback Form to make sure that the tutor is still able to run procedures fluently while collecting data. Give feedback as immediately as possible after the observation.

5. I’m going to keep observing your procedure implementation, only now I’m going to make sure you are still hitting all the components that we targeted in yesterday’s training. Sometimes when we add data collection, it’s harder to run procedures, so I want to make sure you get some coaching on both procedure implementation and data collection.

### Practice

See "Modeling" numbers 4 and 5. These repertoires (procedure implementation and data collection) will be those most targeted during the trainee’s practicum experience, and practice opportunities will occur throughout the student's practicum semester.

### Feedback

Be aware that there may be a lot of need for corrective feedback while the trainee is initially learning this skill. It may be helpful to graph the trainee’s performance over the course of training week and throughout the practicum semester so that trainees can see their improvements over the course of the semester.

For sessions when you are collecting IOA data, provide the IOA percentage, how it compares to the trainee’s previous performance, and any goals associated with IOA. For example, "IOA was 80% for this session. That’s 10% better than last time, and within the range of our goal! Great!"

For sessions when you are collecting integrity data on procedure implementation, point out everything that the trainee did perfectly or improved on from last time. For example, "You set up the materials exactly as the procedure specified and always gave the SD in a neutral tone. Last time I observed you on this, you would sometimes say the SD incorrectly, and I can see that you implemented the feedback I gave you. Great job!"

Choose one or two areas for which to give corrective feedback. For example, "I see that you're often giving prompts without giving the student enough time to respond to the less intrusive prompt. You should be waiting 3-5 seconds in between prompts. Let's work on that for next time." OR "I've noticed that your pacing is a little slow since you’ve started collecting data while running procedures. We’re aiming for at least 4 learning opportunities per minute, and you’re averaging about 2.5. Let's focus on increasing your pace over the next few sessions."

### Evaluation

This performance will be formally evaluated during the last day of training week, using the data sheet for Day 3: Data Collection & Codes in the section titled “Skill: Filling Out Data Sheet (during procedure).
<table>
<thead>
<tr>
<th>Delivery System(s)</th>
<th>On the last day of training week, a trainer will observe the trainee while he or she sets up and implements procedures. The &quot;Filling Out Data Sheet (during procedure) skill will be considered mastered if, during the evaluation, IOA is 80% or better. This skill should, however, be evaluated throughout the semester to assess for drift. If IOA is below 80%, corrective action should be taken during the next week of the semester.</th>
</tr>
</thead>
</table>

This training will be delivered in vivo, using this training outline and the materials specified within.
**FILL OUT DATA SHEET AFTER RUNNING PROCEDURE**

After running procedures, the tutor correctly indicates the percentage of correct trials (if the procedure was completed), whether it is time for a phase change, and whether the student achieved mastery or needs a whistle blow on the procedure.

**Rationale**

In the past, procedures have been run at the wrong phase because of missed phase changes, procedures have been kept in children’s schedules for too long because they have met mastery or whistle blown without tutors noticing. Preventing these errors means that students are more likely to receive instruction that meets their needs, and you, as a tutor, are more likely to see your student succeed.

**Instruction**

When a procedure is finished, write the percentage of trials the student got correct, indicate whether the phase change criteria have been met, and indicate whether the student has met mastery criteria or whistle blow criteria for the procedure.

<table>
<thead>
<tr>
<th>Modeling</th>
<th>Do</th>
<th>Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Flip to completed data sheets in the student's binder, and point to places where percentages are written, phase changes have been indicated, and where mastery criteria and whistle blow criteria have been met. As you point to each place in the binder, explain what was circled and why it was circled.</td>
<td></td>
<td>2. You can see here that all trials of [name of procedure] were completed, and the tutor indicated [percentage correct]. Phase change criteria for this procedure are [say specific criteria], and these criteria were [met/not met] so the tutor circled [yes/no]. You can see also that the tutor identified that the procedure was [mastered/whistle blown/Neither] because [describe rationale].</td>
</tr>
</tbody>
</table>

**Practice**

1. Once the trainee completes all prescribed trials for a procedure, tell them to complete all the sections that should be completed after a session is run (i.e., percentage, phase change, mastery/whistle blow). Verify the correctness of the data sheet, and provide feedback. Tell the trainee to continue to fill out those portions of the data sheet for every completed procedure from that point forward.
2. For the remaining procedures, do not provide prompts for the trainee to fill out these portions of the data sheet. Simply check the data sheets at various points throughout the rest of the day (2-3 times) and verify that the sheets are filled out correctly. Provide feedback as needed.

**Feedback**

Tell the student which pieces of the data sheet they filled out correctly and which portions were filled out incorrectly, along with how you arrived at the conclusion. For example, “You indicated the percent correct in the designated spot on the data sheet, indicated that there was no need for a phase change yet, which is accurate, and identified, that the student neither met mastery nor whistle blow criteria, which is also accurate. Great job!” OR, “You indicated the percent correct in the designated location on the data sheet. That’s great. You indicated that there was no need for a phase change, but the student met the
<table>
<thead>
<tr>
<th>Evaluation</th>
<th>phase change criteria [say specific criteria]. Make sure you are attending to the data from previous sessions so that you can move forward as soon as the student is ready.&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery System(s)</td>
<td>This performance will be formally evaluated during the last day of training week, using the data sheet for Day 3: Data Collection &amp; Codes in the section titled &quot;Skill: Filling Out Data Sheet (after procedure). On the last day of training week, a trainer will evaluate the filled out data sheets and indicate whether they will filled out correctly. This performance will be considered mastered if the trainee receives 5 points on at least 3 data sheets, and receives no fewer than 4 points for any data sheets. Trainees who do not meet mastery criteria during training week will receive targeted coaching during the first few weeks of the semester.</td>
</tr>
<tr>
<td></td>
<td>This training will be delivered in vivo, using this training outline and the materials specified within.</td>
</tr>
</tbody>
</table>
### Performance

**OBTAIN CODES FOR INCOMPLETE PROCEDURES OR PHASE CHANGES**

After each shift is finished, the tutor will obtain codes for procedures that were not completed. As students meet phase change criteria, the tutor will contact a supervisor to indicate the phase change on the data sheet.

### Rationale

BCBAs need to know how often students are practicing each skill they have targeted for improvement. If certain skills are repeatedly being missed for the same reason, the BCBA may be able to rearrange the student’s schedule to make sure that the procedure is being done or write a behavior reduction protocol to prevent problem behavior during specific procedures.

### Instruction

At the end of your shift, you will need to obtain codes from a supervisor for any procedures you were unable to complete during the day. If a student is engaging in problem behavior during the session, you will need to obtain an “OT” code. If the student is in occupational therapy or speech therapy or some other appropriate alternative activity, you will need to obtain the “AAA” code. If a session is not completed because you spent time reading over a new phase of a procedure, or for some other problem related to the implementation of a procedure, you will need to obtain the “IP” code. If the student is not at school while the procedure is scheduled, you will need to obtain the “SA” code. When a student meets phase change criteria, you need a supervisor to indicate the phase change on the data sheet. You should get a supervisor’s attention to do this as immediately as possible after the student meets phase change criteria.

### Modeling

<table>
<thead>
<tr>
<th>Do</th>
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</tr>
</thead>
<tbody>
<tr>
<td>You will not model this performance during training week, but rather, you will quiz the student to make sure he or she knows the circumstances under which to obtain a code, and which codes will correspond to each circumstance. Additionally, you will make sure the student knows when to ask a supervisor for a phase change.</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Practice

This skill will be practiced based on the opportunities that are presented throughout the semester. During training week, after you introduce the codes to the student by following the "instruction" section above, ask the student the questions on the data sheet for Day 3: Data Collection & Codes under the section titled, “Skill: Codes”. Provide feedback immediately following each question. If the trainee scores 4 or better, do not repeat the practice exercise. If the trainee scores less than 4, repeat the exercise later in the day for additional practice.

### Feedback

After each question, tell the trainee whether s/he was right or wrong, and, if s/he was wrong, indicate the correct answer.

### Evaluation

This performance will not be assessed for mastery because practice opportunities will be variable. Ultimately, supervisors are responsible for knowing codes. Tutors need only explain the situation that led to the incomplete session. During the semester, tutors will receive corrective feedback whenever they miss a phase change, and missed phase changes will result in missed points. It is highly likely that all trainees know how to ask a supervisor for a phase
<table>
<thead>
<tr>
<th>Delivery System(s)</th>
<th>change. Therefore, this behavior will be monitored using performance management techniques, rather than training.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This training will be delivered in vivo, using this training outline and the materials specified within.</td>
</tr>
</tbody>
</table>
IECS PROCEDURE SETUP

Given a procedure protocol for any phase of IECS, the trainee successfully identifies the materials necessary for the procedure phase, the correct way to set up the materials, the discriminative stimulus, the circumstances under which the pupil’s response will be considered correct, the circumstances under which a pupil’s response would be considered incorrect, and the appropriate consequences for a pupil’s correct and incorrect response.

Rationale

It is important to be able to read a protocol and set up the procedure according to what is written in the protocol. This way, the setup of the procedure will be consistent across tutors. Additionally, it’s important for all tutors to use the same criteria when counting a response correct or incorrect. Otherwise discrepancies in the data can occur that are due to differences between tutors’ definitions of correct and incorrect responses rather than actual differences in pupil performance. We want our data to reflect changes in pupil performance, rather than differences between tutors’ interpretations of the protocol. You also should be familiar with the consequences for incorrect responding verses correct responding. Differential reinforcement is the most essential component of our skill acquisition procedures. You will notice that your effective behavior in the booth is reinforced by your pupils’ success as well!

Instruction

So far, we have been practicing following procedures with the exception of Icon Exchange procedures. Icon Exchange can be especially difficult for some tutors to run, so we are spending a large portion of today’s training focusing on how to run these procedures. Today we’re going to practice the phase that [child’s name] is on. In the future, you will need to know how to run other phases of the procedure, which may only differ slightly from this phase, or include steps that are significantly different. Throughout the semester, if you know you are approaching a phase of Icon Exchange with which you are unfamiliar, please ask the BCBA on the case or a supervisor for assistance so that you can be sure you are running the procedure as it is written.

Modeling

<table>
<thead>
<tr>
<th>Do</th>
<th>Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use only instructions, prompts (as necessary), and practice opportunities to teach this skill. Trainees should have exposure to procedures though pre-practicum, and should have the prerequisite skills necessary for reading through the procedure and identifying the relevant components.</td>
<td>I’m going to have you look through the procedure binder, identify the procedure that you should be following, and ask you a few questions to make sure you have all the information you need to run the procedure with integrity (that is, as it is written).</td>
</tr>
</tbody>
</table>

Practice

1. Once the trainee opens the binder to the relevant procedure, give him or her one minute to read the relevant phase of the procedure. After one minute has elapsed, ask him or her the following questions:
   - What materials will you need to set up this phase of IECS?
     - Wait 5 seconds. If the trainee does not begin to tell you the materials necessary for the phase within 5 seconds, provide verbal or gestural prompts every 5 seconds until he...
or she begins to say the relevant information. Tally the number of prompts on the data sheet.

- **How will you set up this phase?**
  
  - Wait 5 seconds. If the trainee does not begin to tell you how to set up the relevant phase of the procedure within 5 seconds, provide verbal or gestural prompts every 5 seconds until he or she begins to say the relevant information. Tally the number of prompts on the data sheet.

- **What $S^0$ will you use for this phase?**
  
  - Wait 5 seconds. If the trainee does not begin to tell you the $S^0$ for the phase within 5 seconds, provide verbal or gestural prompts every 5 seconds until he or she begins to say the relevant information. Tally the number of prompts on the data sheet.

- **What does the pupil have to do for his or her response to be considered correct?**
  
  - Wait 5 seconds. If the trainee does not begin to tell you what a correct response looks like for the phase, provide verbal or gestural prompts every 5 seconds until he or she begins to say the relevant information. Record the number of prompts on the data sheet.

- **What should you do if the pupil engages in the correct response?**
  
  - Wait 5 seconds. If the trainee does not begin to tell you what to do when the pupil emits the correct response within 5 seconds, provide verbal or gestural prompts every 5 seconds until he or she begins to say the relevant information. Record the number of prompts on the data sheet.

- **What are some examples of an incorrect response for this procedure?**
  
  - Wait 5 seconds. If the trainee does not begin to tell you what would constitute an incorrect response within 5 seconds, provide verbal or gestural prompts every 5 seconds until he or she begins to say the relevant information. Record the number of prompts on the data sheet.

- **What should you do if the pupil engages in the incorrect response?**
  
  - Wait 5 seconds. If the trainee does not begin to tell you what to do when the pupil emits an incorrect response
| Feedback | within 5 seconds, provide verbal and gestural prompts every 5 seconds until the trainee begins to say the relevant information. Record the number of prompts on the data sheet.  
2. Repeat the practice exercise (as written above) if the trainee has another student during the day who will be learning Icon Exchange.  
As trainees find and give the correct answers to the above questions, give praise statements such as, "right!", "exactly," "yes!"  
If a trainee takes longer than 5 seconds to find the correct answer, point it out in the pupil's binder, and ask the trainee to say out loud the information to which you are pointing.  
If a trainee gives an incorrect answer, tell/show the trainee where to find the relevant information on the procedure sheet, and ask the student to give information from the section to which you are pointing. |
| Evaluation | This performance will be formally evaluated on the last day of training week, using the relevant integrity sheet for Day 4: IECS.  
On the last day of training week, a trainer will observe the trainee as he or she implements the Icon Exchange program. Rather than evaluating whether the trainee can say the relevant information regarding the setup of the procedure, the trainer will evaluate whether the tutor independently sets up the procedure, says the SD correctly, and correctly consequates both correct and incorrect responses.  
This performance (all components of running the IECS procedure) will be monitored throughout the practicum semester, and specific feedback will be given after each observation. Extra coaching will be given when scores fall below 4 points, or when the same error is committed across multiple observations.  
Note that the trainee may not master this performance during training week, and further practice opportunities will be delivered during the first week of the practicum semester. |
| Delivery System(s) | This training will be delivered in vivo, using this training outline and the materials specified within. |
**IECS ANTECEDENT CONDITIONS**

Given a procedure binder and a student's schedule, the trainee successfully determines whether an appropriate item has been identified (i.e., that there is an MO for the child to mand for an object), and the Icon Exchange procedure is appropriately set up (e.g., no inadvertent prompts are given, the book/icon(s) are in the appropriate places, positions of icons are varied as necessary for the phase).

**Rationale**

Setting up a procedure as it is written helps ensure consistency for the learner, and allows the BCBA to be confident that he or she is aware of the contexts under which skills are being demonstrated or not demonstrated. This will be a specific focus during training week because it can sometimes be a challenge to set up procedures quickly while maintaining the student's engagement and preventing problem behavior. We'll take steps to make sure you can set up a procedure efficiently during training week so that it's less overwhelming to do when you're on your own.

**Instruction**

**Specific instruction may vary, depending on which phase of Icon Exchange is being taught during training week. The following is a structure that can be used as an outline for instruction:**

The purpose of this phase of Icon Exchange is to teach [child’s name] [specific skill (e.g., to pick up the icon of an item for which the MO is clearly present, and release that icon into the communication partner's hand, to promote manding even when the communication partner is further away or not paying attention, etc.)]

For any phase of Icon Exchange, it is important to make sure you are teaching the child to engage in a true mand. Per Skinner's definition of a mand, a response can only be considered a mand if it is under control of a motivating operation (for example, deprivation of a specific item). We assume that the MO is in place if the child reaches for the item, either on his or her own, or during a preference assessment. Because we want the manding response to be under control of the item for which the child is manding, and not under control of the icon itself or the icon book, it is important not to provide any inadvertent prompts such as placing the book on the table, sliding the book toward the child, or looking at the book, no matter how tempting doing so may be.

For this particular phase of Icon Exchange, set up each trial by [describe the appropriate setup (e.g., placing the reinforcer on the table and the corresponding icon between the child and the item; placing the reinforcer on the table and the book with relevant icon between the child and the item, etc.)]

**Explain all relevant aspects of setup, including the need to vary placement of the icon(s).**

**Modeling**

1. Determine whether it is an appropriate time to run the Icon Exchange procedure by running an informal preference assessment. If you are unable to find items for which the child would mand, look for additional items, either in the child's bin or in other areas of the classroom.

1. The first step is to run an informal preference assessment to make sure we can expect [child's name] to mand for an object. I can tell that there is an MO because [child's name] (describe indicators such as reaching or grabbing) OR I am having some trouble identifying an item for which [child's name] might mand. Let's try some other items.
2. Once an item is identified, set up the relevant phase of Icon Exchange according to the procedure in the student's binder. As you set up the procedure, say out loud what you are doing.

2. I am putting the icon [describe location], and the reinforcer [describe location]. As the communication partner, I'm going to stand [describe location] because [describe rationale]. Every few trials I will [describe any variations of icon location that might be relevant for this phase, as necessary].

<table>
<thead>
<tr>
<th>Practice</th>
<th>1. After the trainee has an opportunity to observe a session of at least 5 trials of the Icon Exchange procedure as a prompter (see section below on running IECS), the trainee will practice running the procedure as a communication partner, including the antecedent conditions. See the section below for details on how to run these practice opportunities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback</td>
<td>If, during initial practice, the trainee is about to make an error in setting up the antecedent conditions, provide coaching to prevent setup errors (e.g., the icon goes between the child and the item for this phase, avoid inadvertent prompts so we know any responses are true mands, etc.) If no errors occur, include in your feedback after the session specific, positive statements about the trainee’s setup of the Icon Exchange procedure (e.g., I could see that you were working hard to establish MO before running trials; you were patient and did not provide any extra prompts, which can be hard when you’re waiting for a response; etc.)</td>
</tr>
<tr>
<td>Evaluation</td>
<td>This performance will be formally evaluated during the last day of training week, using one of the data sheets for Day 4: IECS. It will also be evaluated several times throughout the practicum semester. On the last day of training week, a trainer will observe the trainee while he or she sets up and implements the IECS procedure. Mastery of the &quot;Antecedent Conditions&quot; skillset will be evaluated throughout the course of the practicum semester. Specific mastery criteria to be determined.</td>
</tr>
<tr>
<td>Delivery System(s)</td>
<td>This training will be delivered in vivo, using this training storyboard and the materials specified within.</td>
</tr>
</tbody>
</table>
### Performance

**IECS IMPLEMENTATION (CONSEQUENCE AND 4-STEP ERROR CORRECTION)**

Given the written ICES procedure, access to a prompter, and data sheets indicating the appropriate phase at which to run the procedure, the tutor runs Icon Exchange as written in the protocol.

### Rationale

Many of our students do not have an established vocal verbal repertoire. Furthermore, denied access to tangibles or extinction of unclear mands can lead to aggressive behavior. Establishing a manding repertoire through the Icon Exchange Communication System can provide a functional alternative to problem behavior and potentially facilitate the development of a vocal verbal repertoire.

### Instruction

After setting up the antecedent conditions for the Icon Exchange procedure, you will wait for the student to make a manding response by picking up the icon (or sentence strip) and handing it to you (the communication partner). This may require some help from the prompter, who sits behind the student and provides prompts as necessary. After the icon or sentence strip reaches the communication partner's hand, the communication partner will label the object or read the sentence strip, then deliver the object and provide social praise.

When a student engages in an incorrect response, the communication partner’s reaction varies by phase. For phases 1 and 2, if the student engages in an incorrect response, the communication partner should label the item and deliver it, while saying, "good" neutrally, rather than delivering social praise. For phases 3 and 4, if the student chooses an icon for an item other than the one for which there is a clear MO, the communication partner should engage in the 4-step error correction procedure.

The 4-step error correction procedure is designed to facilitate discrimination among icons. If the student chooses an icon other than the one for which there is a clear MO, place the incorrect icon back on the book, point to the correct icon, and give the student an opportunity to make the correct response. If the student makes the correct response, say "good" in a neutral tone, do not give the student the item, flip over the book, and do an ELO (distractor trial). Turn the book back over, and repeat the process up to 4 times. If the student chooses the right icon independently, provide the reinforcer and social praise. If the student chooses the wrong icon during the last error correction, end the trial on a neutral, "good".

You'll have a model of this to help you learn, as well as some coaching through the process once it's time for you to run the error correction on your own.

### Modeling

| 1. Run at least 5 trials of the relevant phase of the Icon Exchange procedure as the communication partner while the trainee serves in the prompter role. Point out where in the phase the prompting strategy is outlined, and ask the trainee to read the prompting strategy and then describe in his or own words what s/he will do to prompt. As possible, provide a model of what to do when the student engages in a correct response as well as what to do if the student engages in an incorrect response. Use the existing data on the student's performance |
| 1. I am going to serve as the communication partner for the first five trials or so. I'd like you to serve as the prompter. Please read the prompting strategy for phase [x]. Once you are done reading the strategy, describe to me how you will provide prompts for this phase. It sounds like you're ready. Let's run through a few trials. |
as a guide for how many trials to run. For example, if the child is averaging about 60%, it is likely that the child will make an error within 7 or 8 trials. However, if the child is averaging about 90%, more trials might be required before the student makes an error, and you can choose to have the trainee practice without having seen a model of an error (you can provide coaching during the practice phase).

2. Provide an opportunity for the trainee to ask questions about the procedure. Ask the trainee if s/he is ready to be the communication partner.

<table>
<thead>
<tr>
<th>Practice</th>
</tr>
</thead>
</table>
| 1. After you model the relevant phase of the Icon Exchange procedure, provide an opportunity for the trainee to practice serving as the communication partner while you serve as the prompter. If the trainee pauses, asks questions, or is about to make an error, provide coaching to prevent or correct the error/answer questions. Also provide nonvocal positive feedback (e.g., smiles, nods, thumbs up) for aspects of the procedure that are done correctly. After the trainee completes 5-10 trials, give specific positive feedback on what s/he did well. Repeat this practice opportunity until 0-2 coaching statements are needed during a 5-minute observation.
| 2. Observe the trainee as s/he runs the Icon Exchange procedure as a communication partner, without providing within-session coaching. Provide feedback as immediately as possible after the observation, using the Tutor Feedback Form for Day 4: IECS (whichever phase is relevant) as a guide. Continue a rich observation schedule until the trainee earns at least 4 points on all sections of the data sheet. |

<table>
<thead>
<tr>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>For within-session coaching, give brief corrective feedback statements/prompts, such as, &quot;turn the book over&quot;, &quot;only neutral praise when incorrect&quot;, etc. Provide as many nonvocal forms of positive feedback as possible within session (e.g., smile, nod, thumbs up). After the session, specifically delineate what was done well and what could use improvement.</td>
</tr>
<tr>
<td>For after-session feedback, use the data sheet as a guide for providing an objective evaluation of the targets that were either met or not met. Show the trainee the completed data sheet and describe the errors that were made, how many times they were made, and what can be done to improve. Also describe where few or no errors were made, and provide praise (e.g., Well done! That's not easy to do! etc.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>This performance will be formally evaluated during the last day of training week, using the data sheet for Day 4: IECS. On the last day of training week, a trainer will observe the trainee while he or she sets up and implements procedures. Specific mastery criteria for the &quot;Consequence&quot; and &quot;4-Step Error Correction&quot; skillsets are yet to be determined.</td>
</tr>
</tbody>
</table>

2. Do you have any questions about what we did for those few trials? Are you ready to switch roles and learn to be the communication partner?
<table>
<thead>
<tr>
<th><strong>Delivery System(s)</strong></th>
<th>These skillsets will be monitored and evaluated throughout the practicum semester, and extra coaching will be provided when repeated errors are made or the trainee does not reach performance criteria (yet to be determined).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This training will be delivered in vivo, using this training storyboard and the materials specified within.</td>
</tr>
</tbody>
</table>
## Appendix E

### Screenshot of Performance Tracking Sheet

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Exposure 1</th>
<th>Exposure 2</th>
<th>Exposure 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish Rapport with New Client</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Discrete Trial Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Environment Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select an Appropriate Preference Assessment</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Run a Preference Assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Stimulus</td>
<td></td>
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<td></td>
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<tr>
<td>MSWO</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Single Stimulus</td>
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<tr>
<td>Free Operant</td>
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<td></td>
<td></td>
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<tr>
<td>Run a VB-MAPP</td>
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<td></td>
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</tr>
<tr>
<td>Milestones</td>
<td></td>
<td></td>
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<tr>
<td>Echoc</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Transitions</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Barriers</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Graph VB-MAPP Results</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milestones</td>
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<td></td>
<td></td>
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<tr>
<td>Echoc</td>
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<td></td>
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<tr>
<td>Transitions</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Barriers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpret VB-MAPP Results</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Milestones</td>
<td></td>
<td></td>
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<tr>
<td>Echoc</td>
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<tr>
<td>Transitions</td>
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<tr>
<td>Barriers</td>
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<td></td>
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<tr>
<td>Write a Treatment Plan</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Run a Functional Behavior Assessment</td>
<td></td>
<td></td>
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<tr>
<td>Indirect Assessment</td>
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<td></td>
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<tr>
<td>Direct Descriptive Assessment</td>
<td></td>
<td></td>
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<tr>
<td>Functional Analysis</td>
<td></td>
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</tr>
<tr>
<td>Write a Functional Behavior Assessment Protocol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect Assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix F

Discrete Trial Training Integrity Data Sheet

DATE: __________  OBSERVER: ______________  CLIENT: ______________

STUDENT: ______________  PROCEDURE(S): ______________

TIME OF OBSERVATION: ___:___ TO ___:___

<table>
<thead>
<tr>
<th>Before Session (Procedure 1):</th>
<th>Before Session (Procedure 2):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct phase?</td>
<td>Correct phase?</td>
</tr>
<tr>
<td>□ Yes □ No</td>
<td>□ Yes □ No □ N/A</td>
</tr>
<tr>
<td>Materials set up correctly?</td>
<td>Materials set up correctly?</td>
</tr>
<tr>
<td>□ Yes □ No</td>
<td>□ Yes □ No □ N/A</td>
</tr>
<tr>
<td>Putative tangible or edible</td>
<td>Putative tangible or edible</td>
</tr>
<tr>
<td>reinforcer identified?</td>
<td>reinforcer identified?</td>
</tr>
<tr>
<td>□ Yes □ No</td>
<td>□ Yes □ No □ N/A</td>
</tr>
</tbody>
</table>

Table: Tutor Responses

Trial # | Antecedent | Consequence | Consequence | Problem (If no protocol) |
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Present SD as prescribed</td>
<td>+/−</td>
<td>Correct Response</td>
<td>Incorrect Response</td>
</tr>
<tr>
<td>1</td>
<td>Establish attending</td>
<td>Student Response (+)</td>
<td>Praise delivered within 1 second</td>
<td>Block incorrect response</td>
</tr>
<tr>
<td>2</td>
<td>Neutral SD tone</td>
<td>Praise in appropriate tone</td>
<td>Repeat SD while following hierarchy</td>
<td>Repeat SD while following hierarchy</td>
</tr>
<tr>
<td>3</td>
<td>Student Response (+−)</td>
<td>Tangible/edible provided</td>
<td>Neutral * good</td>
<td>Neutral * good</td>
</tr>
<tr>
<td>4</td>
<td>Engage in play</td>
<td>Engage in play</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
</tr>
<tr>
<td>5</td>
<td>Block incorrect response</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
</tr>
<tr>
<td>6</td>
<td>Repeat SD while following hierarchy</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
</tr>
<tr>
<td>7</td>
<td>Neutral * good</td>
<td>Neutral * good</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
</tr>
<tr>
<td>8</td>
<td>Upon prompted completion</td>
<td>Neutral * good</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
</tr>
<tr>
<td>9</td>
<td>Continue delivering instructions</td>
<td>Correct response</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
</tr>
<tr>
<td>10</td>
<td>Praise/Tangibles withheld</td>
<td>Praise/Tangibles withheld</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
</tr>
<tr>
<td>11</td>
<td>Continue delivering instructions</td>
<td>Praise/Tangibles withheld</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
</tr>
<tr>
<td>12</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
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<tr>
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<td>ELO or new trial</td>
<td>ELO or new trial</td>
<td>ELO or new trial</td>
</tr>
</tbody>
</table>

*Count only 1st 2 columns in category
**Number of different ELOs delivered

Summary: LOs/Minute: 100 (Student Response): Other

109
OBSERVATION NARRATIVE FORM

Focus from last observation:

**Professionalism**

Strengths:

Suggestions:

**Delivery of Instructional Programming**

Strengths:

Suggestions:

**Problem Behavior Reduction**

Strengths:

Suggestions:

General Comments:

Next Focus:
# Appendix G

## Pairing Data Sheet

Staff:_________  
Client:_________  
Observer:_________  
Date:_________

Time (5-10 minute window): __________

Tally the specified desired and undesired BT responses specified in the table below:

<table>
<thead>
<tr>
<th>Desired BT Responses</th>
<th>Rate/Minute</th>
<th>Undesired BT Responses</th>
<th>Rate/Minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of different putative reinforcers presented:</td>
<td></td>
<td>Number of demands given:</td>
<td></td>
</tr>
<tr>
<td>Number of reinforced appropriate client behaviors:</td>
<td></td>
<td>Number of reinforcer removals:</td>
<td></td>
</tr>
<tr>
<td>% appropriate client behaviors reinforced:</td>
<td></td>
<td>Number of unreinforced appropriate client interactions:</td>
<td></td>
</tr>
</tbody>
</table>

IF the client approaches the item:

<table>
<thead>
<tr>
<th></th>
<th>Does the BT deliver the item?</th>
<th>Does the BT allow uninterrupted play?</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opportunity 1</strong></td>
<td>Yes/No/N/A</td>
<td>Yes/No/N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Opportunity 2</strong></td>
<td>Yes/No/N/A</td>
<td>Yes/No/N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Opportunity 3</strong></td>
<td>Yes/No/N/A</td>
<td>Yes/No/N/A</td>
<td></td>
</tr>
</tbody>
</table>

IF the client avoids/backs away from the behavior tech or putative reinforcer:

<table>
<thead>
<tr>
<th></th>
<th>Does the BT offer a new item within 10 seconds?</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opportunity 1</strong></td>
<td>Yes/No/N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Opportunity 2</strong></td>
<td>Yes/No/N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Opportunity 3</strong></td>
<td>Yes/No/N/A</td>
<td></td>
</tr>
</tbody>
</table>

IF the client is no longer engaging with an item:

<table>
<thead>
<tr>
<th></th>
<th>Does the BT offer a new item within 10 seconds?</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opportunity 1</strong></td>
<td>Yes/No/N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Opportunity 2</strong></td>
<td>Yes/No/N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Opportunity 3</strong></td>
<td>Yes/No/N/A</td>
<td></td>
</tr>
</tbody>
</table>
Focus from last observation:

**Professionalism**

Strengths:

Suggestions:

**Engagement in the Pairing Process**

Strengths:

Suggestions:

**Problem Behavior Reduction**

Strengths:

Suggestions:

General Comments:

Next Focus:
Appendix H

HSIRB Approval

Date: March 23, 2017

To: Stephanie Peterson, Principal Investigator
    Katie Garza, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair

Re: HSIRB Project Number 17-02-42

This letter will serve as confirmation that your research project titled “The Effects of a Supervision System for Behavior Analysts on Supervision Practices” has been approved under the expedited category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note: This research may only be conducted exactly in the form it was approved. You must seek specific board approval for any changes in this project (e.g., you must request a post approval change to enroll subjects beyond the number stated in your application under “Number of subjects you want to complete the study.”) Failure to obtain approval for changes will result in a protocol deviation. In addition, if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

Reapproval of the project is required if it extends beyond the termination date stated below.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: March 22, 2018