

EVALUATING THE EFFECTIVENESS OF A COMPREHENSIVE STAFF TRAINING  
PACKAGE FOR BEHAVIORAL INTERVENTIONS FOR CHILDREN WITH AUTISM

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The effectiveness of behavioral interventions for the treatment of young children with autism has been well documented in professional literature. The success of these procedures, however, depends on the fidelity of implementation and proper training of the therapist. The purpose of this study was to evaluate a 125-skill, comprehensive staff training package that involved a graduated sequence of teaching. In addition to changes in skills, social validity and training time were also assessed. Results indicate that correct demonstration of skills increased following training, incorrect implementation decreased, teachers rated the procedures favorably, and the total training took between 20 and 32.5 hours for over 120 skills to reach mastery criteria. A discussion of the results as well as implications for future research is also provided.

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## INTRODUCTION

The effectiveness of behavioral interventions for the treatment of young children with autism has been well documented in professional literature (Myers & Johnson, 2007). Children undergoing intensive behavioral interventions based on the science of behavior analysis have made significant gains across many domains, as compared to children receiving alternative interventions who displayed little or no gain (e.g., Eikeseth, Smith, Jahr, & Eldevik, 2002; Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Lovaas, 1987). It has also been documented that outcomes can be maintained over long periods of time (Eikeseth, Smith, Jahr, & Eldevik, 2007; McEachin, Smith, & Lovaas, 1993).

The success of these procedures, however, depends on the fidelity of implementation (Bibby, Eikeseth, Martin, Mudford, & Reeves, 2002). There is evidence that children learn better when interventionists are appropriately trained (e.g., Ala'i-Rosales, Thorisdottir, & Etzel, 2003; Downs, Downs, & Rau, 2008). Therefore, the effectiveness of treatment for children with autism appears to rely heavily on the need to have adequate training for persons responsible for implementing these techniques (Jahr, 1998; McGee & Morrier, 2005; National Research Council, 2001; Shook, Ala'i-Rosales, & Glenn, 2002). Table 1 provides an overview of reviews and empirical literature illustrating the importance of training for change agents.

Early research has shown that it is possible, and necessary, to empirically assess correct implementation of behavioral techniques and it is essential to a child's improvement that teachers be trained to use effective behavioral techniques to a high criterion (Koegel, Russo, & Rincover, 1977). Therefore, not only is systematic training



required to teach the high level of expertise required when providing services to children with autism, but objective assessment is needed to ensure proper implementation of procedures (Koegel, Russo, & Rincover, 1977; Wolery, Anthony, Snyder, & Werts, 1997). Furthermore, the amount of time required for training is a likely factor in the adoption and use of teaching procedures by practitioners. For example, Lavie and Sturmey (2002) found that preference assessment procedures could be rapidly taught to assistant teachers in a school for children with autism. Although proper training is crucial for effective teaching, it must be done in an efficient and cost-effective manner to be useful to practitioners in the field.

Staff training can be conducted in a variety of ways (McGee & Morrier, 2005). One critical feature of staff training, however, is that trainees be provided with many opportunities to practice the skills being trained (National Research Council, 2001). Demchak (1987) reviewed staff training procedures in a variety of special education settings, classifying training procedures into two general categories: antecedent strategies and consequent strategies/contingency management. Antecedent strategies are procedures employed prior to the occurrence of specific staff behaviors; these strategies typically involve procedures such as didactic instructions, written instructions (manuals), modeling, and/or role-playing. Consequent strategies are procedures that follow staff behaviors and primarily include feedback in written, posted, or verbal form.

Both early and recent research has shown that multi-component/multi-faceted training is effective in training staff to teach children with disabilities (Sarokoff & Sturmey, 2008; Schepis, Ownbey, Parsons, & Reid, 2000). Multi-faceted training involves a combination of antecedent and consequent strategies (Demchak, 1987).

Combinations used in previous research have included instructions, feedback, modeling, and rehearsal (Dib & Sturmey, 2007); written lists of skills, instruction, rehearsal, modeling, and feedback (Sarokoff & Sturmey, 2008); in-serving training, consultation, and feedback (Sigafoos, Kerr, Roberts, & Couzens, 1994); verbal and written instructions, role playing, in vivo monitoring, and feedback (Schepis, Ownbey, Parsons, & Reid, 2000); instruction, role playing, in vivo training, and feedback (Schepis, Reid, Ownbey, Parsons, 2001); written manual, individual training session, and verbal feedback (Wolery, Anthony, Snyder, & Werts, 1997); lecture, handout, role-play, and feedback (Lerman, Vorndran, Addison, & Kuhn, 2004); and instruction, modeling, and practice with feedback (Downs, Downs, & Rau, 2008). Table 2 provides an overview of the methods and outcomes of this research.

Techniques combining antecedent and consequent strategies appear to be the most effective and recommended training strategy when training behavior analysts to work with children with autism (Shook, Ala'i-Rosales, & Glenn, 2002) and has been used to teach a range of skills, such as conducting preference assessments (Lavie & Sturmey, 2002), teaching functional communication training (Sigafoos, Kerr, Roberts, & Couzens, 1994), and embedding instructional trials in everyday classroom routines (Wolery, Anthony, Snyder, & Werts, 1997). However, past research has typically focused on training single component skills (Dib & Sturmey, 2007; Downs, Downs, & Rau, 2008; Sigafoos, Kerr, Roberts, & Couzens, 1994).

Based on prior research indicating that training formats using both antecedent and consequent strategies are recommended when training behavior analysts to work with children with autism, this approach was used for training behavior change agents in

the current study. This includes, but is not limited to, verbal instructions, written skill lists, modeling, and feedback (Shook, Ala'i-Rosales, & Glenn, 2002). Thus a combination of these specific antecedent and consequent strategies was selected for the current study.

This study differed from previous research in that multiple skill areas were taught and those skills were introduced in a graduated sequence. Graduated exposure is a technique found in clinical research and involves systematic introduction of events based on learner success (e.g., Ellis, Alai-Rosales, Glenn, Rosales-Ruiz, & Greenspoon, 2005; Hagopian & Jennett, 2008). Thus, in the current study, trainees were introduced to skill clusters in gradually increasing numbers and time periods. This was necessary due to the large amount of skills necessary to effectively implement behavior analytic treatments for children with autism. This approach was taken in order to introduce the trainee to initial and subsequent skill sets without detrimental effects for the trainee (in terms of an overwhelming number of skills) or the child (in terms of a low therapeutic value due to receiving treatment from an unskilled therapist).

In order to train effective intervention skills, it is necessary to identify the competency skills required of a behavior analyst. It is essential that the skills taught will be useful to interventionists when providing services to children with autism (Bernstein, 1982). According to the Association for Behavior Analysis International - Autism Special Interest Group Consumer Guidelines, skills that are important when working with children with autism include, but are not limited to, discrete trial and incidental teaching; specifically, interventionists should be able to implement effective prompting, error correction, multiple learning opportunities, and reinforcement techniques (ABAI –

Autism SIG, 2007). Specific program competencies include the implementation of functional communication training, learning-to-learn programs, and domain specific skills (Leaf, & McEachin, 1999). The Behavior Analyst Certification Board's Guidelines for Responsible Conduct also stresses the importance of ethical and professional considerations, including confidentiality and seeking consultation when necessary (BACB, 2004). A combination of 125 skills was selected for this training package based on the recommended skills discussed above and recommended skills in Ala'i-Rosales, Isley, Laino, Broome, & Hunter (2009). The term "skill" was used to indicate that a combination of behaviors was often incorporated into each skill. For example, the skill "engages child throughout session" would include behaviors such as the teacher manipulating the materials with the child to promote engagement as well as introducing alternative materials when necessary. In summary, behavior analysts working with children with autism are required to learn a complex set of technical and ethical skills (ABAI – Autism SIG, 2007; BACB, 2004) and those skills are best taught using training approach involving antecedent and consequent strategies (Shook, Ala'i-Rosales, & Glenn, 2002).

The purpose of this study was to evaluate a 125-skill comprehensive staff training package that employed gradual introduction of skills. Of particular interest were the effectiveness, desirability, and time spend until mastery of the training package. It should also be noted that this study was part of an ongoing project required by the program's funding agency to evaluate staff training procedures within the center based services.

## METHOD

### Participants

#### *Trainees*

There were four participants that served as the trainees for this study. Trainee 1 was a 56 year old female, who identified as Caucasian, and was a graduate student in a behavior analysis program. She had nine months of direct Applied Behavior Analysis (ABA) therapy experience working with children diagnosed with an autism spectrum disorder. She was a current employee of the center where the study took place and was included on the basis of her request for more intensive training.

Trainee 2 was a 34 year old female, who identified as Arab/Middle Eastern, and was a graduate student in an education program, with a specialization in autism intervention. She had 5 months of experience observing and collecting data for direct ABA therapists. She was seeking certification as a behavior analyst, thus was working toward acquiring the required practical hours for certification. She was a volunteer at the center where the study took place. Prior to the training, she also attended a didactic training workshop at the center, which included a brief introduction to autism, autism intervention evidence, basic terminology, ethical responsibilities, as well as the agency's mission and details of the autism treatment program. For an outline of the didactic training presentation, see Appendix A.

Trainee 3 was a 19 year old female, who identified as Caucasian, and was an undergraduate student in a behavior analysis program. She had completed two years of coursework in behavior analysis. She was interested in working with children with autism and was put into contact with the center through one of her undergraduate

courses, where she then began volunteering. She also attended the didactic training workshop described above.

Trainee 4 was a 23 year old female, who identified as Caucasian/Hispanic, and was a graduate student in a behavior analysis program. She had 5 months of ABA experience through an undergraduate practicum involving observation and small group work with a board certified behavior analyst (BCBA). She began volunteering at the center to fulfill practicum requirements for her graduate program.

Informed consent was obtained after the training was completed. The first four participants agreed to share their training information for purposes of the study (see Appendix B for consent description).

The children in the study were chosen on the basis of availability and scheduling within the treatment program. All of the children ranged in age from 4 years old to 8 years old, all diagnosed with an autism spectrum disorder. The children received between 8 and 20 hours of ABA services each week. Each child's intervention package included functional communication training, increased engagement with materials programs, and appropriate transitioning programs. Each child also had additional learn-to-learn and domain specific programs including, but not limited to, expressive labeling, fine motor, gross motor, drawing imitation, vocal imitation, and personal information question answering.

### *Trainers*

I served as the trainer for the majority of the training sessions. A secondary trainer, a senior level therapist at the agency sponsoring the project, implemented approximately half of the training sessions with Trainee 4. Due to a scheduling conflict,

the lead BCBA for the autism treatment center conducted one of the training sessions. All of the trainers had extensive experience with the majority of the children participating in the study. Procedural integrity was assessed for the primary and secondary trainers. The procedures for assessing procedural integrity are described below.

### Setting and Materials

The study was conducted at a non-profit autism treatment program. Part of the program mission is to serve at-risk children. Qualifying risk factors include but are not limited to low socio-economic status and multiple diagnoses within the child's family. The general mission of the autism treatment program is to provide comprehensive, evidence-based services that are culturally responsive, and transparent and replicable for other urban areas, and to maintain a positive, client-first atmosphere. The autism treatment program serves children from a variety of cultural backgrounds diagnosed with an autism spectrum disorder from the ages of three to nine. The teaching format is a combination of naturalistic, activity based, and discrete trial teaching.

The rooms where the study took place consisted primarily of small therapy rooms within the center. Occasionally training took place in the area in which the child's caregiver dropped the child off to meet the therapist, as well as the hallway connecting the drop-off point, and the classrooms. Multiple, although similar, rooms were used throughout the study depending on availability and scheduling.

Materials used for the study consisted of a small table, chairs, toys, the child's program materials (applicable flashcards and objects), a small video camera and tripod, datasheets, and pencils. Recorded assessments were uploaded to a desktop computer where graduate students scored the tapes on the datasheets.

## Measures and Data Collection

The skills measured throughout the training were divided into three clusters (see Table 3 for examples). Skills in Cluster 1 consisted primarily of rapport with the child, functional communication, ethical considerations, program material management, and session management. Cluster 2 consisted of professionalism, rapport with supervisors and coworkers, additional functional communication, program material management, session management, and learn to learn program implementation. Cluster 3 consisted of additional ethical considerations, professionalism, program material management, session management, rapport with supervisors and coworkers, as well as domain specific skill acquisition (for a full list of skills in each cluster see Appendix C). In vivo data were collected during all baseline and training sessions to assess the skills demonstrated in each respective cluster. Complete datasheets are included in Appendix D.

Time spent in training was also measured. Time spent was divided into hours in training, as well as hours in assessment. Each cluster was measured independently, separated by assessment and training, as well as for the entire training package with assessment and training combined.

## Interobserver Agreement

Baseline scores for all trainees, as well as two random data points for each cluster per trainee were scored for interobserver agreement (with the exception of the baseline for Trainee 1, Cluster 3 due to technological difficulties with the videotape). The observer was trained by the author through discussion of the skills, examples and non-examples of the skills, as well as watching practice videos and discussing the skills



demonstrated. After training, the observer scored videos randomly selected by the author (with the exception of the baseline videos for which all sessions were scored). The interobserver agreement for the skills assessed ranged from 82% to 100%. Definitions were developed and evaluated prior to initiation of study. Those skills in which more extensive definitions were required are displayed in Table 4.

### Procedures

The study was conducted over the course of three months with each trainee entering the training program at different times according to availability and completing the program at different times based on the basis of mastery of skills. Training sessions were conducted during each trainee's scheduled day at the center.

### *Assessments*

Assessments for Clusters 1, 2, and/or 3 were always conducted at the beginning and the end of the session. The assessment for each cluster only differed in the instruction given (see below). The training session began with the trainer entering the trainee's therapy session or accompanying a trainee to a therapy session. The trainee was given the instruction "I'm going to start the assessment now. You can start by working on functional communication." If the trainee was not familiar with the terminology used, the trainer provided a definition. Following the instruction, the video camera was started and the first 10 minute assessment began. If the participant demonstrated 90%-100% of the skills in Cluster 1, the assessment was continued for another 10 minutes to assess Cluster 2. For the second 10 minute assessment the trainee was given the instructions "We are going to move into the second 10 minute assessment. You can continue working on functional communication and implement a

learn-to-learn program.” If the trainee was unfamiliar with the terminology the trainer provided a definition and an example of an acceptable program to implement, such as an applicable imitation program. If the participant demonstrated 90%-100% of the skills in the respective cluster, the assessment was continued for another 10 minutes to assess Cluster 3. For the third 10 minute assessment the trainee was given the instructions “We are going to move into the third 10 minute assessment. You can continue to work on functional communication and implement a domain specific program.” If the trainee was unfamiliar with the terminology the trainer provided a definition and an example of an acceptable program to implement, such as an applicable question answering program. Following all applicable assessments, the trainer shut off the video camera to begin the training portion of the session.

### *Training Procedure*

If the trainee did not demonstrate the criterion-level skills in one of the assessments, no further assessment was conducted and training began immediately. For example, if the trainee demonstrated only 50% of skills in Cluster 1, the assessment was stopped after the first 10 minutes and training took place.

The training began with the trainer identifying the skills that would be the focus of that training session. Targeted skills were those that were not demonstrated, or incorrectly demonstrated, during the assessment. The easier, prerequisite skills were taught first, followed by the implementation order, thus antecedent skills were taught prior to consequent skills. A maximum of 10 skills were taught during each training session to allow adequate time for the trainee to practice the skills before the training session was completed.

Once training began, the trainee was provided with a list of the skills in that cluster. After receiving the list of skills in each cluster, the trainee was asked to bring the skill cluster list to all subsequent training sessions (however, if the trainee failed to bring the skill list with them, she was provided with another list). The trainer then acknowledged and praised the skills that were appropriately demonstrated by the trainee during the assessment and asked if the trainee had any questions or comments regarding those skills that she had correctly demonstrated. The trainer emphasized any skills that were demonstrated that had not been previously demonstrated. The trainer then identified those skills that would be the focus for training and provided a description, example, and rationale for those skills. The trainee was periodically asked if the information was understandable and if she had any questions.

Following the verbal description of the skill(s) the trainer modeled the correct implementation of the skill(s) with the child while the trainee observed. The trainee was then allowed time to practice the skills with the child while the trainer provided feedback in the form of praise or corrective feedback. The trainee was able to practice skills that were not initially performed correctly for an additional amount of while feedback was provided. The trainer also periodically offered to model the skills again. These procedures were repeated for the remainder of the training session, which typically lasted between one and two hours.

Following the training portion of the session, the trainee was instructed to leave the room and perform other tasks for a period of 15-30 minutes (e.g., disinfecting toys, organizing materials, etc.). After the trainee's break, she returned to the therapy room to begin the final assessment. The purpose of the final assessment was to test for

acquisition of the skills after the training session. The procedures for the final assessment were to the assessment at the beginning of the training session.

Mastery of the entire training package was based on the trainee demonstrating a minimal amount of errors, as well as a consistent level of correct skill implementation across all three clusters of skills.

### *Social Validity*

Social validity was assessed in order to ensure that the trainees were satisfied with the training procedures (Bernstein, 1982). Following their participation in the study, trainees were provided with a satisfaction/feedback survey and an unlabeled envelope. After trainees completed the survey, they placed it in the envelope and delivered it to the principal investigator's academic department where the surveys were electronically compiled by a third party and the anonymous results delivered to the researcher. See Appendix E for a copy of the satisfaction survey.

### Design

A within subject changing criterion design across skill clusters and replicated across trainees was used to evaluate the effects of the intervention on the correct and incorrect demonstration of the teaching skills.

### Procedural Fidelity

An independent observer observed the training portion of sessions and scored whether the trainer correctly conducted the major components of the training procedures. Procedural fidelity was assessed in 28% of training sessions and 100% of training steps were correctly demonstrated by the trainer. See Appendix F for a copy of the checklist.

## RESULTS

Figure 1 displays the results for trainees' progress by component skills for all clusters for all trainees. The top panel represents Trainee 1 with the subsequent panels representing Trainees 2-4 respectively. The x-axis represents successive assessments for all trainees. The y-axis represents the total number of correct (closed symbols) and incorrect (open symbols) demonstrations of skills. The length of the assessment is indicated in parentheses under the condition labels. Figure 2 displays the hours of training required to reach mastery criteria (90% demonstration of skills to move onto next cluster, stable data and low errors to complete the entire training package) for all trainees.

Figure 1 depicts correct and incorrect demonstration of skills for all clusters separated by trainee. Trainee 1 completed the training program after 23 assessments, Trainee 2 after 22 assessments, Trainee 3 after 28 assessments, and Trainee 4 after 34 assessments. Each trainee had one baseline assessment for each cluster, the first data point being the baseline assessment for Cluster 1 with baseline for the subsequent cluster being assessed after mastery criteria for the previous cluster had been met.

The top panel shows overall outcomes for Trainee 1. During baseline for Cluster 1, Trainee 1 demonstrated 15 skills correctly and 10 skills incorrectly. Upon introduction of Cluster 2, Trainee 1 scored 29 correct and 6 incorrect across Clusters 1 and 2. Upon introduction of Cluster 3, Trainee 1 scored 103 correct and 11 incorrect across clusters 1, 2, and 3. The second panel displays overall outcomes for Trainee 2. During baseline for Cluster 1, Trainee 2 demonstrated 15 skills correctly and 10 skills incorrectly. Upon introduction of Cluster 2, Trainee 2 scored 49 correct and 9 incorrect across Clusters 1 and 2. Upon introduction of Cluster 3, Trainee 2 scored 87 correct and 6 incorrect

across Clusters 1, 2, and 3. The third panel displays overall outcomes for Trainee 3. During baseline for Cluster 1, Trainee 3 demonstrated 11 skills correctly and 11 incorrectly. Upon introduction of Cluster 2, Trainee 3 scored 41 correct and 17 incorrect across Clusters 1 and 2. Upon introduction of Cluster 3, Trainee 3 scored 84 correct and 12 incorrect across Clusters 1, 2, and 3. The fourth panel displays overall outcomes for Trainee 4. During baseline for Cluster 1, Trainee 4 demonstrated 13 skills correctly and 11 skills incorrectly. Upon introduction of Cluster 2, Trainee 4 scored 45 correct and 21 incorrect across Clusters 1 and 2. Upon introduction of Cluster 3, Trainee 4 scored 86 correct and 11 incorrect across Clusters 1, 2, and 3.

Overall, the outcomes for all trainees showed increasing trends in skill demonstration scores, with increased slopes at the introduction of each Cluster. Trainees 1, 2, and 4 showed consistently lower scores for incorrect than correct skill demonstration during both baseline and training, with increasingly divergent scores following the introduction of training procedures. In the case of Trainee 3, initial baseline scores for correct and incorrect demonstration of skills were equal (11 correct, 11 incorrect) with the onset of training resulting in rapid increases in correct demonstration of skills and decreases in incorrect responses. A breakdown of individual results for each trainee is included in Appendix G.

Figure 2 depicts the time spent to mastery data for all four trainees. Clusters are represented across the x-axis, separated by assessment and training conditions, and total in-session time for all three clusters is displayed at the far right of the panels. The y-axis shows the total number of hours spent in each condition. Trainee 1 reached mastery criteria for all clusters after a total of 20 hours; Trainee 2 reached mastery

criteria for all clusters after 20 hours; Trainee 3 reached mastery criteria for all clusters after 25.5 hours; Trainee 4 reached mastery criteria for all clusters after 32.5 hours.

Table 5 provides the social validity results in terms of the staff satisfaction survey. Overall, staff indicated that they felt staff training at the agency was extremely important. They felt the training was either effective or very effective in improving their ABA implementation skills and were satisfied with their improvement. Most staff felt that the training process was comfortable, although some indicated that the videotapes made training uncomfortable initially. When comparing the present staff training procedures with past experiences, they indicated that the current training was much better than previous experiences, specifically in terms of receiving more instruction and feedback. See Table 5 for specific written responses provided by trainees.

## DISCUSSION

Previous research has shown that behavioral interventions can be effective in teaching children with autism (e.g., Eikeseth, Smith, Jahr, & Eldevik, 2002; Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Lovaas, 1987). However, it is necessary that individuals providing those interventions are appropriately trained to deliver them effectively (Bibby, Eikeseth, Martin, Mudford, & Reeves, 2002; Jahr, 1998; McGee & Morrier, 2005; National Research Council, 2001; Shook, Ala'i-Rosales, & Glenn, 2002). The purpose of this study was to evaluate the effectiveness of a 125-skill staff training package for interventionists working with children with autism. The training utilized antecedent and consequent strategies for training and a graduated sequence of introduction to the intervention skills. The skills targeted for training were identified through a review of professional guidelines for behavior analysts working with children with autism (ABAI – Autism SIG, 2007; BACB, 2004) as well as skills targeted by Ala'i-Rosales, et al. (2009).

The results of the present study indicate that the training format was effective in teaching the skills to the trainees. All trainees showed decreases in incorrect implementation of targeted skills and increases in the correct implementation of the skills following training. Furthermore, over 120 skills reached mastery criteria within 20-32.5 hours. It should also be noted that consistent results were obtained regardless of varying settings, children, programs, and trainers; indicating the effectiveness of the package in multiple conditions.

These results are consistent with previous studies indicating that an approach combining antecedent and consequent strategies is effective for training behavior analysts to work with children with autism (Dib, & Sturmey, 2007; Koegel, Russo, &



Rincover, 1977; Lavie, & Sturmey, 2002; Lerman, Vorndran, Addison, & Kuhn, 2004; Sarokoff, & Sturmey, 2008; Schepis, Ownbey, Parsons, & Ried, 2000). Also consistent with past research, a component analysis was not conducted; therefore, it was not possible to determine if one training component was more important than another in producing successful teaching of the targeted skills (e.g., Schepis, Reid, Ownbey, Parsons, 2001). It should be noted, however, that over 120 skills reached mastery in 20-32.5 hours. It is not likely that removing one component would have greatly decreased training time.

The results were also consistent with research that has indicated that a graduated introduction to the instructional stimulus conditions can be an effective and “learner friendly” approach when training a complex skill set (e.g., Ellis, Alai-Rosales, Glenn, Rosales-Ruiz, & Greenspoon, 2005; Hagopian & Jennett, 2008). In general, trainees described the training as highly satisfactory and were pleased with the procedures and outcomes. The results for all trainees indicated that previously trained skill sets maintained as new skill clusters were introduced, providing support for the notion that a graduated sequence format can promote acquisition of a large number of skills without decrements in previously acquired skills. It is unclear if the treatment package without graduated exposure would have been equally effective and/or desirable to participants. However, considering the large number of skills taught, it is likely that trainees would find a simultaneous training method overwhelming.

In addition to verbal instructions, modeling, and feedback, the current package also included a gradually increasing sequence of skill clusters. Each trainee showed an immediate and rapidly increasing ability to correctly demonstrate the targeted skills after

baseline, followed by a more gradual increase as each component progressed. This was probably due to the use of the graduated sequence format, thus a greater amount of skills were available for the trainee to demonstrate at each introduction of a new skill set. For example, introducing skill Cluster 2 allowed for 48 more skills to be added to the total amount of skills targeted. The introduction of subsequent skills allowed the trainee the opportunity to demonstrate them, whereas that opportunity was not present until baseline assessments.

Only one data point was obtained for baseline for each skill cluster. It might have been more informative to have a longer baseline; however a disadvantage of doing this would have been allowing an unskilled teacher to be with the child for a longer period of time prior to intervention. The children participating in this study had limited access to effective procedures and one goal of the agency was to maintain high frequencies of quality learning opportunities (Greer, 1994) throughout all intervention periods. Furthermore, given that the project was supported by state money for service, as opposed to research, it would have been inappropriate for children to have a teacher that was inexperienced and therefore not able to provide quality services to a child in need. Within the initial observation it was apparent that the teacher was not able to demonstrate the necessary skills; therefore it was necessary to begin training as quickly as possible. Based on these considerations, one baseline data point was deemed sufficient to demonstrate the effects of the training package. The limited baseline information did not, however, give any information regarding generalization and this should be addressed in future research. For example, it may be beneficial to do an

initial probe of all clusters prior to each training to determine if any skills are obtained prior to the introduction of each cluster being directly targeted.

Another notable issue is the skill organization of Cluster 3. Baselines scores for skill Cluster 3 were generally higher, relative to the baselines for the other two clusters.

This finding is likely due to generalization of skills learned in other skill clusters.

Approximately half of the skills in Cluster 3 had been targeted in skill Cluster 2, with the only difference being that skill Cluster 3 focused on the application of the skills to a

different type of program (learn-to-learn versus domain specific skills). There were also

more skills in Cluster 3 that were only applicable during some assessments. For

example, during assessments in which the trainee did not interact with the care-giver,

skills that targeted care-giver interactions would be scored as non-applicable, thus

dropping the total amount of possible skills assessed. This was responsible for the

increased variability in scores observed during the acquisition stage of skill Cluster 3.

Future research could investigate the reorganization of the skill distribution across

clusters to potentially capture all skills during the respective assessment and limit the

amount of skills that are not captured. An additional example indicating the necessity of

reorganizing skill clusters lies in Trainee 1's baseline assessment for Cluster 2. Total

skill implementation was significantly lower than other trainees because she omitted one

program during the assessment. It is not clear why this was omitted but future research

could investigate how to set the occasion for skills to be displayed and captured.

For several reasons, the training time required for Cluster 3 was longer than the

time required for the first two clusters. First and foremost, the assessment length

required for each subsequent cluster is an additional 10 minutes. Therefore, the

assessment length for Cluster 3 is 30 minutes, thereby increasing the amount of training time required based solely on the longer assessment. After combining the initial assessment and final assessment of the day, Cluster 3 has a total assessment time per session to 60 minutes, as compared to Cluster 1 with a total assessment time of 20 minutes and Cluster 2 with a total assessment time of 40 minutes. The criterion for completion of Cluster 3 was also different than the first two clusters, resulting in longer training time. The criteria for Clusters 1 and 2 was 90%-100% correct demonstration of skills, whereas mastery of Cluster 3 was based on stability in the data and low errors due to it being the final set of skills. Thus mastery criterion had to be consistent with the amount of time required to complete the entire training package. It would have been optimal to continue Trainee 1's training due to the incorrect demonstration of a few skills, however, due to scheduling constraints Trainee 1 was unable to continue until mastery criteria was reached to complete the training.

Although the treatment package was effective in teaching the targeted skills recommended by professional guidelines (ABAI – Autism SIG, 2007; BACB, 2004), future research should also investigate these training procedures along with child outcome data to ensure that the skills taught are benefiting the child's progress. The effectiveness of the training procedures would be greatly strengthened with data indicating that successful implementation of skills coincided with significant child progress.

Past research has typically focused on training a single component skill, such as discrete trial teaching (Downs, Downs, and Rau, 2008), increasing opportunities to learn (Sigafos, Kerr, Roberts, & Couzens, 1994), or reducing stereotypy (Dib & Sturmey,

2007). This study contributes to the current literature by indicating the effectiveness of a 125-skill comprehensive staff training package as opposed to training a single set of skills. Although the skills addressed by past research are valuable skills for a behavior analyst, it is beneficial to have a comprehensive training package that includes multiple skill areas critical for providing services to children with autism. Research evaluating procedures for training wide ranges of skills in an applied setting are of value to practitioners. A comprehensive staff training package, as opposed to several partial training procedures, may increase the adoption of behavioral approaches to staff training within agencies serving children with autism.

Table 1

*Review Literature*

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Citation	Contribution
Bernstein, G. S. (1982).	More staff training research is necessary on the specific competency skills required of individuals working with client, training procedures, social validity, and efficiency of training.
Demchak, M. (1987)	Staff training is necessary to improve quality of services delivered. Training can be generally broken down into antecedent and consequent strategies.
Jahr, E. (1998).	Having competent staff working with children with autism is crucial. Adequate training is required to accomplish this. More effective staff training procedures should be researched.
McGee, G. G., & Morrier, M. J. (2005).	Adequate training is necessary for individuals working with children with autism. There are a variety of things to consider when training, including giving instructions, hands-on training, and training to mastery.
Myers, S. M., & Johnson, C. P. (2007).	The primary goal of treatment for children with autism is to increase functional behaviors and quality of life. It has been well-documented that children with autism receiving ABA-based interventions have shown substantial gain, as opposed to children in control groups.
National Research Council (2001).	There is a shortage of personnel trained to work with children with autism. Adequate preparation of those personnel is crucial. Effective training programs for new personnel are required.

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*(table continues)*

Table 1 (continued).

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Citation	Contribution
Shook, J., Ala'i-Rosales, S. & Glenn, S. (2002).	Article emphasizes the necessity of skilled trainers. It is beneficial to include multiple training strategies, such as antecedent arrangements, modeling and role play, in vivo feedback, and continued support.

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Table 2

*Training Method and Outcomes of Training Interventions*

Citation	Method	Outcome
Alai-Rosales, S.A., Thorisdottir, S. Etzel, B.C. (2003)	Written instructions, models, role-play with feedback, in vivo feedback, performance reviews/reminders, grade incentive	As teaching skills were improved by the teachers, child errors decreased and correct responses increased
Dib, N.E. & Sturmey, P. (2007).	Instructions, feedback, modeling, and rehearsal	Improvements in accurate teaching, reduction in student stereotypy
Downs, A., Downs, R.C., & Rau, K. (2008).	Didactic instruction, modeling, practice with feedback, practice with children	After intervention instructors improved in their ability to implement DTT
Ellis, E. M., Ala'i-Rosales, S.S., Glenn, S.S., Rosales-Ruiz, J., & Greenspoon, J. (2005).	Graduated exposure, modeling, contingent social attention	Combination of procedures were successful in teaching tolerance to skin care products
Koegel, R.L., Russo, D.C. & Rincover, A. (1977).	Manual, video modeling, attempt with child, feedback, modeling	Possible to empirically assess correct implementation, necessary to teach to high criterion, rapidly trained skills, learned generalized skills
Lavie, T., & Sturmey, P. (2002).	Instructions, checklist with skills, verbal description, video modeling, rehearsal, verbal feedback	Staff quickly (80 min) learned how to conduct preference assessments
Lerman, D.C., Vorndran, C.M., Addison, L., & Kuhn, S.C. (2004).	Workshop: lecture, handout, and roleplay with feedback. In vivo observations: verbal feedback	Mastered skills during role play, implemented them with children successfully

*(table continues)*



Table 2 (continued).

Citation	Method	Outcome
Sarokoff & Sturmey (2008).	Written list of components, instructions, rehearsal, modeling, feedback	Improved accuracy in implementation of DTT procedures, high social validity
Schepis, M.M., Reid, D.H., Ownbey, J., & Parsons, M.B. (2001).	Classroom-based instruction, role playing, brief in vivo training and feedback	Correct teaching procedures increased after training
Schepis, M.M., Ownbey, J.B., Parsons, M.B., & Reid, D.H. (2000).	Verbal and written instructions, role playing, in vivo monitoring and feedback	Staff became more proficient at correct teaching procedures, children made better progress
Sigafoos, J., Kerr, M., Roberts, D., & Couzens, D. (1994).	In-service training, consultation, feedback	Procedures were effective in helping teachers create opportunities for functional communication in the classroom
Wolery, M., Anthony, L., Snyder, E.D., & Werts, M.G. (1997).	Written manual, individual training session, verbal feedback	All children demonstrated learning when trials were embedded but training was required to effectively embed instructional trials

Table 3

*Examples of Skills*

Skill Categories	Cluster	Examples
Ethics	1	Demonstrates attentive, kind, and loving behavior towards child
	2	N/A
	3	Refers to supervisor for appropriate consultation
Professionalism	1	N/A
	2	Behaves in a confident manner with clients
	3	Describes treatment program accurately
Rapport with Supervisor	1	N/A
	2	Responsive to feedback
	3	Collaborates and offers suggestion in a positive manner
Rapport with Co-Workers	1	N/A
	2	Appropriate voice tone and inflection throughout interaction
	3	Collaborates and offers suggestion in a positive manner
Rapport with Child	1	Arranges the environment to allow for independent social approaches
	2	N/A
	3	N/A
Functional child's Communication Training signals	1	Delivers consequences contingent on functional communication
	2	Applies time-delay when child attends, "intent"
	3	N/A

*(table continues)*

Table 3 (*continued*).

Skill Categories	Cluster	Examples
Program Material Management	1	Starts session with materials prepared
	2	Collects reliable data on treatment performance
	3	Graphs data correctly within same day of session
Learn-to-Learn Program Implementation	1	N/A
	2	Detects and responds to error patterns appropriately
	3	N/A
Domain Specific Skill Acquisition	1	N/A
	2	N/A
	3	Maintains spatial control over reinforcers
Session Management	1	Engages child throughout session
	2	Sets the occasion for high rates of responding
	3	Conditions neutral stimuli as reinforcers

Table 4

*Skills Requiring More Extensive Definitions*

Skill	Definition
Arranges the environment to allow for independent social approaches	Staff member provides situations in which the child is not instructed to approach but must move to be within proximity to staff member
Offers choice of activities and reinforcers	Staff member presents two or more choices to child, either by gesture (holds two items up) or verbally (Ask child which of two items they would like)
Avoids reprimand and nagging	Staff member provides a higher level of positive feedback than reminders
Reinforcement schedule is appropriate	Staff member uses a continuous reinforcement schedule (one answer per access to preferred item) for difficult tasks and a lower density of reinforcement for easier tasks
Spaces high/low preference activities	Staff alternates between discrete trial teaching and incidental teaching, as well as alternating between tasks that are more preferred by child and less preferred
Provides differential reinforcement for higher quality/harder responses	Staff member provides a higher level of reinforcement (praise, access to preferred item) for responses that are closer to the final behavior than the previous attempt, or are skills not previously demonstrated by child

*(table continues)*

Table 4 (continued).

Skill	Definition
Provides high preference events for approaches and initiations	Staff member praises and provides preferred items to child when child approaches (independently or instructed) or initiates to staff member or materials
Uses a variety of high preference events	Staff member uses at least three different preferred items/activities within 10 min.
Delivers appropriate criterion related prompts	Correct responses are modeled for child consistent with the response that is required
Allows appropriate amount of time for	Allow 3-5 seconds for child's response before representing or prompting child's response
Fades prompts quickly	Staff member allows the child an opportunity to perform the behavior independently
Provides reinforcement for attending	Praise and/or access to a preferred item is delivered when child is engaging in appropriate attending behaviors (e.g., looking at materials, sitting in chair, etc.)

Table 5

*Social Validity Results*

<b>Question</b>	<b>Ratings</b>	<b>Comments</b>
<b>Do you feel the staff training at the [agency] is important?</b>	<ul style="list-style-type: none"> <li>• Extremely important</li> <li>• Extremely important</li> <li>• Extremely important</li> <li>• Extremely important</li> </ul>	<ul style="list-style-type: none"> <li>• My previous experience in no way prepared me for the work I was to do at [the agency]. Training 7 months into my time there made me a more effective teacher—a benefit for the children, other teachers, and me.</li> <li>• I feel that in order to properly implement effective treatment, staff training is extremely vital.</li> </ul>
<b>In your opinion, how effective has the staff training process been in improving your ABA implementation skills?</b>	<ul style="list-style-type: none"> <li>• Very effective</li> <li>• Very effective</li> <li>• Effective</li> <li>• Effective</li> </ul>	<ul style="list-style-type: none"> <li>• Previous experience did not prepare me as much as this training did.</li> <li>• The training immediately began to generalize to my work with other children.</li> <li>• This training process was effective in improving my ABA implementation skills by teaching me how to cope in certain situations with the child and how that affects the child’s learning.</li> </ul>
<b>Overall, how do you feel about your improvement in ABA implementation since starting the staff training process?</b>	<ul style="list-style-type: none"> <li>• Very satisfied</li> <li>• Satisfied</li> <li>• Satisfied</li> <li>• Satisfied</li> </ul>	<ul style="list-style-type: none"> <li>• While I get a clear feedback (Read: Help) from case managers, I could benefit from further training on how to do maintenance, work with more than one child at a time, and evaluative probes from [the primary trainer].</li> <li>• Since starting the staff training, I am more confident in implementing ABA.</li> </ul>
<b>How comfortable did you feel during the staff training process?</b>	<ul style="list-style-type: none"> <li>• Comfortable</li> <li>• Uncomfortable</li> <li>• Comfortable</li> <li>• Comfortable</li> </ul>	<ul style="list-style-type: none"> <li>• There was some discomfort with the videotape but then became used to it.</li> <li>• This is a measure of the vulnerability I feel when I am not comfortable with my <i>own</i> performance. [The primary trainer] <i>never</i> did anything to contribute to that.</li> <li>• At the beginning of the training process, I was a little uncomfortable, only because I did not know if I was implementing treatment correctly. However, as training progressed, I became a lot more comfortable.</li> </ul>

*(table continues)*

Table 5 (continued).

Question	Ratings	Comments
<p><b>How would you describe your relationship with the staff training provider?</b></p>	<ul style="list-style-type: none"> <li>• Satisfactory</li> <li>• Very satisfactory</li> <li>• Satisfactory</li> <li>• Satisfactory</li> </ul>	<ul style="list-style-type: none"> <li>• Overall, I had a good relationship, especially near the end. However, in the beginning, I could not determine how much I improved.</li> <li>• I felt I could ask her anything and “confess” any shortcoming.</li> <li>• The staff was very helpful and respectful.</li> </ul>
<p><b>How does this compare to your previous training experience?</b></p>	<ul style="list-style-type: none"> <li>• Different</li> <li>• Different</li> <li>• Different</li> <li>• Different</li> </ul>	
<p><b>If different was it:</b></p>	<ul style="list-style-type: none"> <li>• Much better</li> <li>• Much better</li> <li>• Much better</li> <li>• Slightly better</li> </ul>	
<p><b>In what way:</b></p>	<ul style="list-style-type: none"> <li>• More feedback, more instruction</li> <li>• More feedback, more instruction</li> <li>• More feedback, more instruction</li> <li>• More feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Previous experience was in small business setting and there was not a lot of room for direct instruction.</li> <li>• Her training style was perfect!</li> <li>• I have never been trained in ABA implementation. However, compared to other staff training I have experience, this one was much more organized, informative, and helpful.</li> </ul>
<p><b>What improvements would you suggest for the staff training process?</b></p>		<ul style="list-style-type: none"> <li>• I think expanding it would be great. I believe [the primary trainer’s] contributions are a valuable start.</li> <li>• I would have liked more feedback on the work I did during “breaks” in the training sessions—I wasn’t sure if I was doing them correctly/ if it was what the staff wanted.</li> <li>• Discussing the overall performance of the trainee after terminating the training, and also inform her if there’s further training in the future. Moreover, the trainee has the right to know exactly what level of training (ABA) she is given, and if she’s eligible to the second level.</li> </ul>

(table continues)

Table 5 (continued).

Question	Ratings	Comments
Additional comments		<ul style="list-style-type: none"> <li>• I thought it was a wonderful process and glad I was able to experience it.</li> <li>• I often felt so inept that I would contemplate quitting and finding another job. On my way to work I often felt discouraged going to work and cried on my way home. I cannot begin to tell you the appreciation I felt for [the primary trainer] on the day I couldn't <i>wait</i> to get to [the agency] She has made a valuable contribution to [the agency] with her training. For [the agency's] sake I hope more training can be added. All of us there want to make a difference in the child's life and that of his family. There is little more disheartening in my world than the times I feel my contributors have been less than beneficial . . . or even worse, that they may have been a detriment. Thank you, [primary trainer]. I will be forever grateful for your guidance.</li> <li>• The ending of the training was sudden and the trainer didn't communicate the number of sessions the trainee has to finish for the training to be complete, not even an estimation number. This action made the trainee (me) feels as being used as an object not a person who should be provided with better information about her overall performance and ending time.</li> </ul>



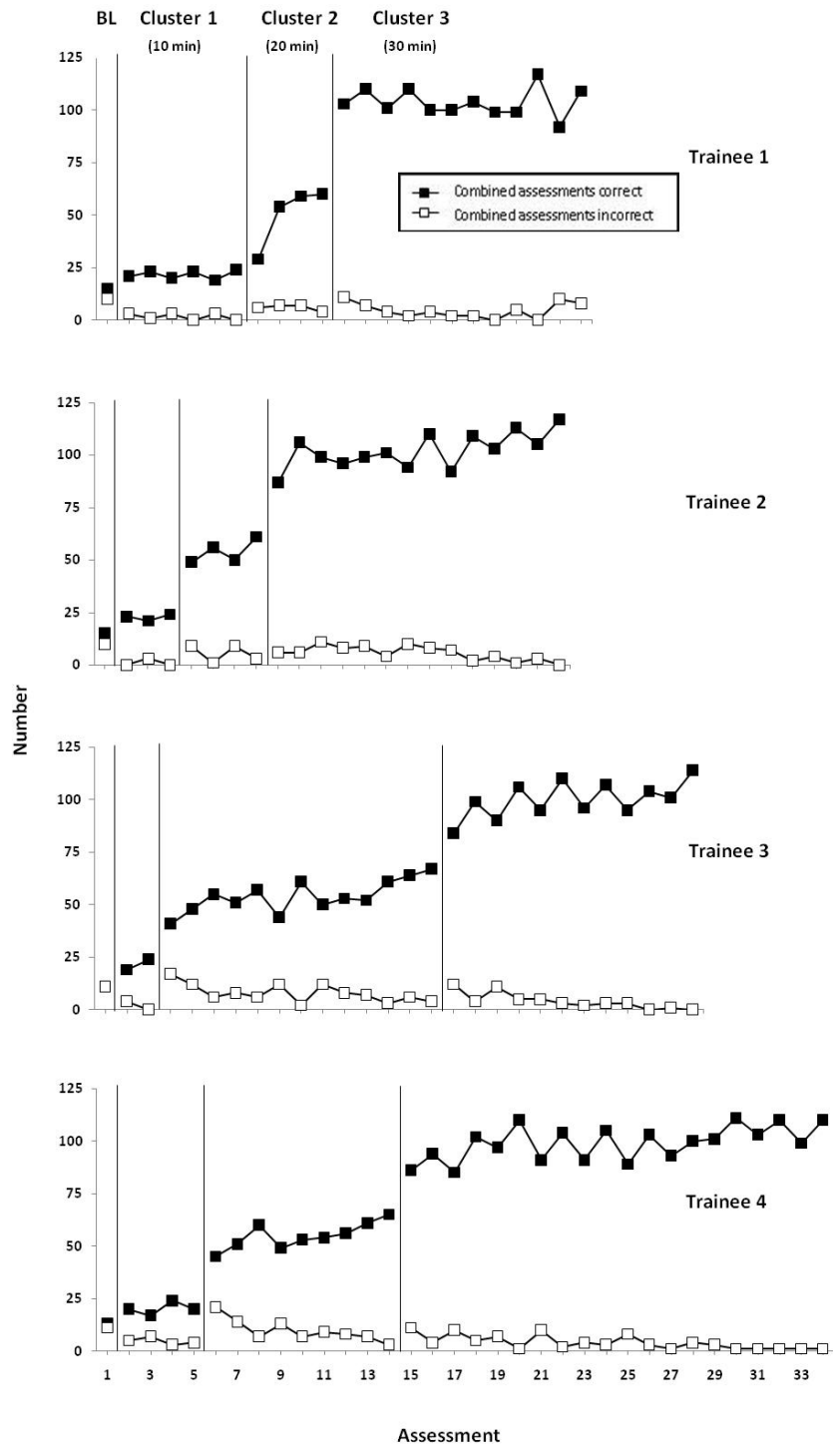


Figure 1. Progress by component skills for all clusters for all trainees.

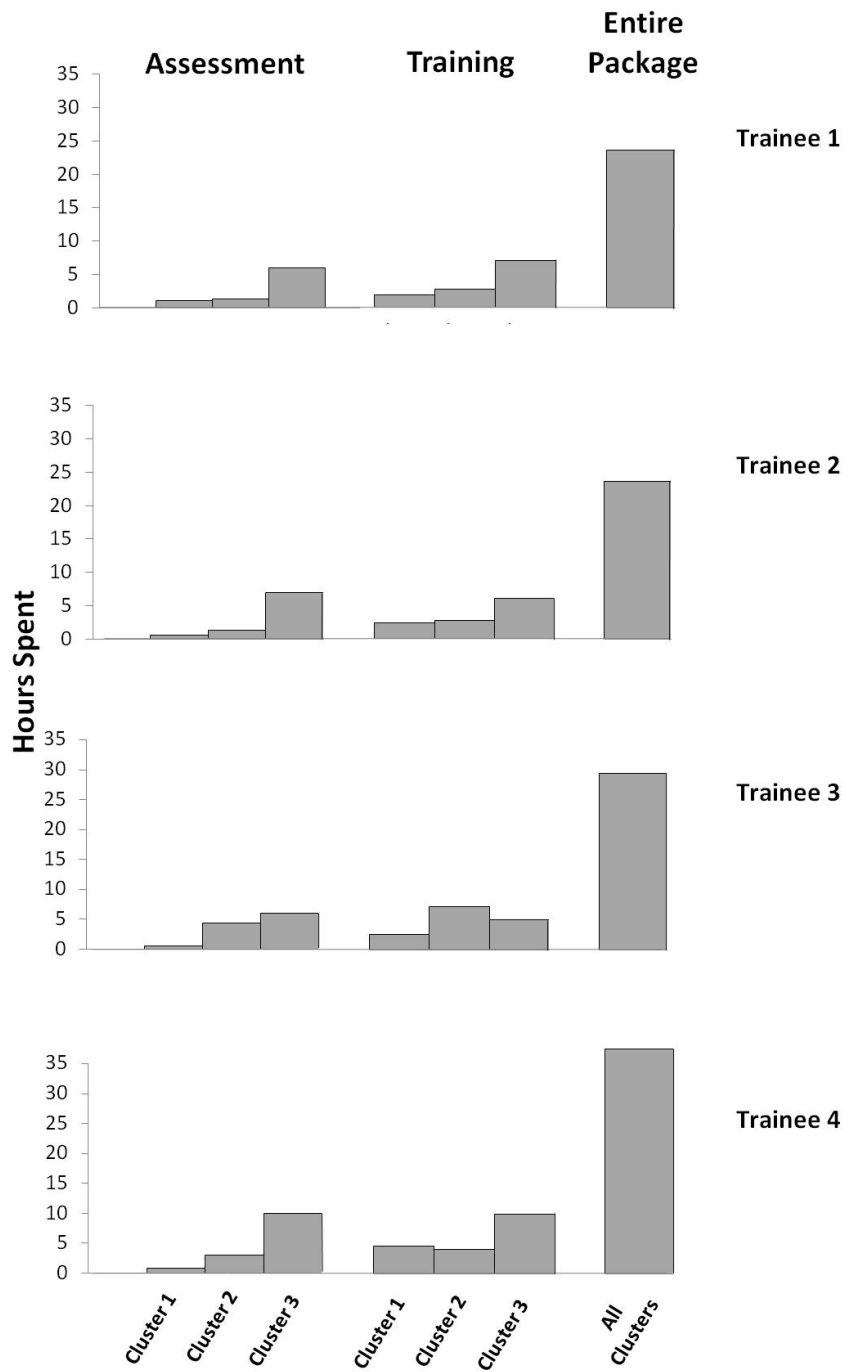


Figure 2. Time spent until mastery of skills for all trainees.

APPENDIX A  
OUTLINE OF DIDACTIC TRAINING WORKSHOP

# **An introduction to the Science and Art of Applied Behavior Analysis and Autism Intervention: Programs Designed with Evidence and Compassion**

## I: Autism

A: What is Autism?

B: What is Applied Behavior Analysis?

## II: A Natural Science Approach to Intervention

## III: The Intervention Construct

## IV: Current Intervention Evidence

A: Early intensive behavioral intervention comprehensive outcome studies

1: Initial investigations

2: Replications and extensions

## V: ABA Scientist-Practitioner Skills

A: Intervention skills

B: Professional and ethical skills

C: Problem solving skills

## VI: Basic Terms and Procedures

A: Antecedents

B: Responses

C: Consequences

D: Instructional arrangements

## VII: Ethical Responsibilities in ABA

A: Behavior Analyst Certification Board (BACB) Guidelines for Responsible Conduct

B: Association for Behavior Analysis – Autism Special Interest Group Consumer Guidelines

## VIII: Agency Mission

## IX: Agency's Autism Treatment Program

## X: Quiz

APPENDIX B  
INFORMED CONSENT

## University of North Texas Institutional Review Board

### **Informed Consent Form**

Before agreeing to your participation in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

#### **Title of Study:**

A Staff Training Package for ABA Therapists:  
Program Description, Outcomes and Participant Satisfaction

#### **Principal Investigator:**

Sara Weinkauff, a graduate student in the University of North Texas (UNT) Department of Behavior Analysis.

#### **Purpose of the Study:**

Employees at Easter Seals have participated in several staff training programs. One training program in particular has proven to be very effective and well liked by staff. The purpose of this study is to report the results of that training protocol. We would like to provide a description of the GSTAT (Graduated Sequence for Training ABA Therapists) staff training procedures, performance outcomes and participant satisfaction so that other trainers can benefit and extend our efforts. This is important in that if staff are appropriately trained they can effectively deliver ABA services to children diagnosed with autism spectrum disorders (ASD). Proper training provides an increase in treatment fidelity as a result of consistent training and on-going monitoring and feedback systems.

The outcomes we would like to report include the teaching skills you learned, the pattern of learning across training assessments, and the amount of time required to complete training (total and per skill section). We will report outcomes so that other trainers understand the types of skills that are demonstrated after completion of the training package.

We would also like you to provide us with your evaluation of the staff training package. We would like your opinion of the experience (benefits, difficulties, suggestions) and how you view your participation after completion of the training. We will report this information to help us and others benefit from your perspectives on this type of training.

#### **Study Procedures:**

1) We are asking you to fill out a questionnaire that describes your satisfaction during the staff training process. You will also be asked to evaluate your experience with the training process (benefits, difficulties, suggestions). You will be provided with a self addressed, stamped envelope at your convenience. Your names will in no way be linked to this information. You will be referred to by pseudonyms.

2) We are asking you to give consent for the data from your training assessments to be reanalyzed and summarized in order to assess the degree to which additional changes occurred (in addition to your teaching skills). Your name will never be associated with any of the data. We will use pseudonyms to describe you in any publications.

**Voluntary Participation:**

Participation in this research study is voluntary. You have completed your participation in the staff training process and refusal to participate or a decision to discontinue participation will not involve any penalty or loss of benefits.

**Foreseeable Risks:**

No foreseeable risks are involved in this study. Previous clinical and research reports have identified no harm and substantial benefit from participation in the training that was associated with this study and there is no foreseeable harm in completing the questionnaire.

**Benefits to the Subjects or Others:**

This study is not expected to be of any direct benefit to you; however, the results of the study may add directly to the knowledge of other service providers delivering staff training to ABA therapists for children with autism. This, in turn, may benefit future staff and the children they serve.

**Procedures for Maintaining Confidentiality of Research Records:**

Surveys will be returned to the principal investigator in a pre-addressed, stamped envelope and brought unopened to an on-campus service where they will be electronically compiled. The results will then be delivered to the principal investigator thus being kept completely anonymous. All data will remain coded throughout the study and unidentifiable to anyone outside of the research team.

For trainees consenting to participate in this study, pseudonyms will be assigned to each trainee and those pseudonyms will be used when referring to that participant data. These pseudonyms will be maintained throughout the course of research. Following the completion of the research study, the files and videotapes will be kept for a period of three years and then destroyed. Personally identifiable data will not be disclosed to anyone outside of the research team. The confidentiality of the participants' personal information will be maintained in any public dissemination, such as appearance in academic journals and/or academic conferences.

**Questions about the Study:**

If you have any questions about the study, you may contact Sara Weinkauf at [REDACTED], or the faculty advisor, Dr. Shahla Ala'i Rosales at [REDACTED]

**Review for the Protection of Participants:** This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

**Research Participants' Rights:** Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- Sara Weinkauf has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You have been told you will receive a copy of this form.

\_\_\_\_\_  
Printed Name of Participant

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

**For the Principal Investigator or Designee:** I certify that I have reviewed the contents of this form with the participant signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

\_\_\_\_\_  
Signature of Principal Investigator or Designee

\_\_\_\_\_  
Date



APPENDIX C  
FULL SKILL LIST BY CLUSTERS

## **Skill Cluster 1:**

### A. Ethics

1. Demonstrates attentive, kind, and loving behavior towards child
2. Does not engage in abusive or neglectful behavior toward child

### E. Rapport with Child

1. Greets with positive affect
2. Appropriate voice tone & inflection throughout interaction
3. Arranges the environment to allow for independent social approaches
4. Less than 2 retreats per 10 min sample
5. Identifies potential reinforcers and high preference events
6. Provides high preference events for approaches and initiations
7. Regulates access & rotates exposure to high preference events
8. Delivers a large amount of high preference event consequences
9. Uses natural, response characteristic high preference events when possible
10. Uses variety of high preference events

### F. Functional Communication Training

1. Items of interest are controlled by interventionist
2. Recognizes interest indicated by child (reach, gesture, proximity, etc.)
4. Arranges the environment to allow access contingent on communication
6. Presents verbal model related to the child's interest
8. Varies stimulus items every few trials
9. Allow appropriate amount of time for child's response
10. Expands or repeats child's communication attempts
11. Delivers consequences contingent on child's functional communication
12. Reinforcer delivered within 2 seconds of child's response
14. Provides multiple response opportunities

### G. Program Material Management

1. Starts session with materials prepared
2. Play materials available
7. Returns materials following session
8. Leaves room clean for next session

### J. Session Management

1. Engages child throughout session
11. Varies instructional settings

## **Skill Cluster 2:**

### B. Professionalism

10. Behaves in a confident manner with clients
11. Behaves in a confident manner with co-workers
12. Behaves in a confident manner with supervisors

### C. Rapport with Supervisor

1. Greets with positive affect
2. Appropriate voice tone & inflection throughout interaction
3. Responsive to feedback

### D. Rapport with Co-workers

1. Greets with positive affect
3. Appropriate voice tone & inflection throughout interaction
4. Responsive to feedback

### F. Functional Communication Training

3. Applies time-delay when child attends, signals “intent”
5. Arranges turn taking/sharing opportunities
7. Offers choice of activities and reinforcers
13. Reinforces approximations when shaping behavior
15. Differentially reinforces correct responses over prompt/corrected resp.
16. Fades prompt quickly

### G. Program Material Management

3. Instructional materials available
9. Collects reliable data on treatment performance
10. Data collected as responding occurs or shortly after

### H. Learn-to-Learn Program Implementation

1. Teacher’s proximity to child is appropriate
2. Gains child’s attention before instruction
3. Instructional stimuli arranged for instruction
4. Sets expectations – clear description of task
5. Uses appropriate voice tone (instructions, praise, corrections)
6. Appropriate physical praise
7. Appropriate verbal praise
8. Maintains spatial control over reinforcers
9. Delivers reinforcer within 2 seconds of criterion response
10. Reinforcement includes descriptive praise
11. Provides differential reinforcement for higher quality/harder responses
12. Allows appropriate amount of time for child to respond
13. Uses a variety of reinforcers (social, tangible, etc.)

14. Provides reinforcement for attending
15. Avoids reprimands and nagging
16. Offers choices
17. Follows through with requests
18. Maintains appropriate instructional pace
19. Delivers appropriate criterion related prompts
20. Delivers immediate, effective, least intrusive prompts
21. Fades prompts quickly
22. Detects & responds to error patterns appropriately
23. Reinforcement schedule is appropriate
24. Errorless prompts occur prior to response and used when task is new

#### J. Session Management

5. Positive feedback rather than reminds
6. Ignores minor misbehavior
7. Stops & redirects dangerous behavior
8. Sets the occasion for high rates of responding
10. Spaces high/low preference activities

### **Skill Cluster 3:**

#### A. Ethics

3. Respectful and honest interactions with clients (children and caregivers)
4. Maintains confidentiality
5. Uses language that is understandable to the target audience
6. Refers to supervisor for appropriate consultation
7. Reports necessary information to supervisor

#### B. Professionalism

1. Good general attendance
2. Follows attendance policy – calling, etc.
3. Arrives to all sessions on time
4. Greets family members (parents & siblings) with positive affect
5. Positive debriefing of session (to caregiver)
6. Describes treatment program accurately
7. Does not discuss diagnosis or prognosis
8. Cooperates with & supports team members
9. Provides rationales for ideas during discussions

#### C. Rapport with Supervisor

4. Collaborates and offers suggestions in a positive manner

#### D. Rapport with Co-workers

4. Collaborates and offers suggestions in a positive manner

#### G. Program Material Management

4. Includes meaningful, positive and interesting information on the Parent Home Notes sheet
5. Gives copy of Parent Home Notes to parent or guardian picking up child
6. Makes copy of Parent Note to file
11. Graphs data correctly within same day of session
12. Writes objective and descriptive treatment notes

#### I. Domain Specific Skill Acquisition

1. Teacher's proximity is appropriate
2. Gains child's attention before instruction
3. Applicable program materials present
4. Sets expectations – clear description of task
5. Uses appropriate voice tone (instructions, praise, corrections)
6. Allows appropriate amount of time for child to respond
7. Appropriate physical praise (for approximations)
8. Appropriate verbal praise (for approximations)
9. Delivers reinforcer within 2 seconds of criterion response
10. Reinforcement includes descriptive praise
11. Provides differential reinforcement for higher quality/harder responses
12. Maintains spatial control over reinforcers
13. Uses a variety of reinforcers (social, tangible, etc.)
14. Provides reinforcement for attending
15. Avoids reprimands and nagging
16. Offers choices
17. Maintains appropriate instructional pace
18. Provides extension opportunities
19. Delivers appropriate criterion related prompts
20. Delivers immediate, effective, least intrusive prompts
21. Fades prompts quickly
22. Detects & responds to error patterns appropriately
23. Reinforcement schedule is appropriate
24. Errorless prompts occur prior to response and used when task is new

#### J. Session Management

2. Attempts to condition neutral stimuli as reinforcers
3. Incorporates functional activities
4. Balances contingent access & fun
9. Spaces activity levels (moving, sitting, etc.)
12. Includes peers in activities

APPENDIX D  
DATASHEETS BY CLUSTER

**Staff Training Assessment**

Cluster 1

Trainee: \_\_\_\_\_

Trainer: \_\_\_\_\_

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

Stop Time: \_\_\_\_\_

Start Time: \_\_\_\_\_

Stop Time: \_\_\_\_\_

Y: Yes N: No

N/A: Not applicable

N/O: Not observed

perm product/report

Instructions: Mark "yes" if the specified behavior occurs. Mark "no" if it does not occur. Mark "N/O" if it is not-observed (could have happened but opportunity was not presented during one hour session) Mark "N/A" if the behavior was not applicable (not allowed to occur) or does not apply to that specific child

Yes	No	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

**A. Ethics**

1. Demonstrates attentive, kind, and loving behavior towards child
2. Does not engage in abusive or neglectful behavior toward child

Yes	No	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

**E. Rapport with Child**

1. Greets with positive affect
2. Appropriate voice tone & inflection throughout interaction
3. Arranges the environment to allow for independent social approaches
4. Less than 2 retreats per 10 min sample
5. Identifies potential reinforcers and high preference events
6. Provides high preference events for approaches and initiations
7. Regulates access & rotates exposure to high preference events
8. Delivers a large amount of high preference event consequences
9. Uses natural, response characteristic high preference events when possible
10. Uses variety of high preference events

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

**F. Functional Communication Training**

1. Items of interest are controlled by interventionist
2. Recognizes interest indicated by child
4. Arranges the environment to allow access contingent on communication
6. Presents verbal model related to the child's interest
8. Varies stimulus items every few trials
9. Allow appropriate amount of time for child's response
10. Expands or repeats child's communication attempts
11. Delivers consequences contingent on child's functional communication
12. Reinforcer delivered within 2 seconds of child's response
14. Provides multiple response opportunities

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

**G. Program Material Management**

1. Starts session with materials prepared
2. Play materials available
7. Returns materials following session
8. Leaves room clean for next session

Y	N	N/O	N/A
Y	N	N/O	N/A

**J. Session Management**

1. Engages child throughout session
11. Varies instructional settings

# Staff Training Assessment

Cluster 2

Trainee: \_\_\_\_\_

Trainer: \_\_\_\_\_

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

Stop Time: \_\_\_\_\_

Start Time: \_\_\_\_\_

Stop Time: \_\_\_\_\_

Y: Yes N: No

N/A: Not applicable

N/O: Not observed

perm product/report

Instructions: Mark "yes" if the specified behavior occurs. Mark "no" if it does not occur. Mark "N/O" if it is not-observed (could have happened but opportunity was not presented during one hour session) Mark "N/A" if the behavior was not applicable (not allowed to occur) or does not apply to that specific child

## B. Professionalism

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

- 10. Behaves in a confident manner with clients
- 11. Behaves in a confident manner with co-workers
- 12. Behaves in a confident manner with supervisors

## C. Rapport with Supervisor

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

- 1. Greets with positive affect
- 2. Appropriate voice tone & inflection throughout interaction
- 3. Responsive to feedback

## D. Rapport with Co-workers

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

- 1. Greets with positive affect
- 2. Appropriate voice tone & inflection throughout interaction
- 3. Responsive to feedback

## F. Functional Communication Training

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

- 3. Applies time-delay when child attends, signals "intent"
- 5. Arranges turn taking/sharing opportunities
- 7. Offers choice of activities and reinforcers
- 13. Reinforces approximations when shaping behavior
- 15. Differentially reinforces correct responses over prompt/corrected resp.
- 16. Fades prompt quickly

## G. Program Material Management

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

- 3. Instructional materials available
- 9. Collects reliable data on treatment performance (See reliability check - Pg 4)
- 10. Data collected as responding occurs or shortly after



Staff: \_\_\_\_\_

Assessor: \_\_\_\_\_

Yes	No	N/O	N/A	H. Learn-to-Learn Program Implementation
Y	N	N/O	N/A	1. Teacher's proximity to child is appropriate
Y	N	N/O	N/A	2. Gains child's attention before instruction
Y	N	N/O	N/A	3. Instructional stimuli arranged for instruction
Y	N	N/O	N/A	4. Sets expectations
Y	N	N/O	N/A	5. Uses appropriate voice tone
Y	N	N/O	N/A	6. Appropriate physical praise
Y	N	N/O	N/A	7. Appropriate verbal praise
Y	N	N/O	N/A	8. Maintains spatial control over reinforcers
Y	N	N/O	N/A	9. Delivers reinforcer within 2 seconds of criterion response
Y	N	N/O	N/A	10. Reinforcement includes descriptive praise
Y	N	N/O	N/A	11. Provides differential reinforcement for higher quality/harder responses
Y	N	N/O	N/A	12. Allows appropriate amount of time for child to respond
Y	N	N/O	N/A	13. Uses a variety of reinforcers
Y	N	N/O	N/A	14. Provides reinforcement for attending
Y	N	N/O	N/A	15. Avoids reprimands and nagging
Y	N	N/O	N/A	16. Offers choices
Y	N	N/O	N/A	17. Follows through with requests
Y	N	N/O	N/A	18. Maintains appropriate instructional pace
Y	N	N/O	N/A	19. Delivers appropriate criterion related prompts
Y	N	N/O	N/A	20. Delivers immediate, effective, least intrusive prompts
Y	N	N/O	N/A	21. Fades prompts quickly
Y	N	N/O	N/A	22. Detects & responds to error patterns appropriately
Y	N	N/O	N/A	23. Reinforcement schedule is appropriate
Y	N	N/O	N/A	24. Errorless prompts occur prior to response and/or used when task is new

Y	N	N/O	N/A	J. Session Management
Y	N	N/O	N/A	5. Positive feedback rather than reminders
Y	N	N/O	N/A	6. Ignores minor misbehavior
Y	N	N/O	N/A	7. Stops & redirects dangerous behavior
Y	N	N/O	N/A	8. Sets the occasion for high rates of responding
Y	N	N/O	N/A	10. Spaces high/low preference activities

Reliability Check				
Program _____				
Correct	Approx	Incorrect	Reliability %	

# Staff Training Assessment

Cluster 3

Trainee: \_\_\_\_\_

Trainer: \_\_\_\_\_

Date: \_\_\_\_\_

Start Time: \_\_\_\_\_

Stop Time: \_\_\_\_\_

Start Time: \_\_\_\_\_

Stop Time: \_\_\_\_\_

Y: Yes N: No

N/A: Not applicable

N/O: Not observed

perm product/report

Instructions: Mark "yes" if the specified behavior occurs. Mark "no" if it does not occur. Mark "N/O" if it is not-observed (could have happened but opportunity was not presented during one hour session) Mark "N/A" if the behavior was not applicable (not allowed to occur) or does not apply to that specific child

Yes	No	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

## A. Ethics

3. Respectful and honest interactions with clients (children and caregivers)
4. Maintains confidentiality
5. Uses language that is understandable to the target audience
6. Refers to supervisor for appropriate consultation
7. Reports necessary information to supervisor

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

## B. Professionalism

1. Good general attendance
2. Follows attendance policy
3. Arrives to all sessions on time
4. Greets family members with positive affect
5. Positive debriefing of session (to caregiver)
6. Describes treatment program accurately
7. Does not discuss diagnosis or prognosis
8. Cooperates with & supports team members
9. Provides rationales for ideas during discussions

Y	N	N/O	N/A
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## C. Rapport with Supervisor

5. Collaborates and offers suggestions in a positive manner

Y	N	N/O	N/A
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## D. Rapport with Co-workers

5. Collaborates and offers suggestions in a positive manner

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

## G. Program Material Management

4. Includes meaningful, positive and interesting info on the Parent Notes
5. Gives copy of Parent Notes to parent/guardian picking up child
6. Makes copy of Parent Note to file
11. Graphs data correctly within same day of session
12. Writes objective and descriptive treatment notes

Staff: \_\_\_\_\_

Assessor: \_\_\_\_\_

I. Domain Specific Skill Acquisition
--------------------------------------

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

1. Teacher's proximity is appropriate
2. Gains child's attention before instruction
3. Applicable program materials present
4. Sets expectations
5. Uses appropriate voice tone
6. Allows appropriate amount of time for child to respond
7. Appropriate physical praise
8. Appropriate verbal praise
9. Delivers reinforcer within 2 seconds of criterion response
10. Reinforcement includes descriptive praise
11. Provides differential reinforcement for higher quality/harder responses
12. Maintains spatial control over reinforcers
13. Uses a variety of reinforcers
14. Provides reinforcement for attending
15. Avoids reprimands and nagging
16. Offers choices
17. Maintains appropriate instructional pace
18. Provides extension opportunities
19. Delivers appropriate criterion related prompts
20. Delivers immediate, effective, least intrusive prompts
21. Fades prompts quickly
22. Detects & responds to error patterns appropriately
23. Reinforcement schedule is appropriate
24. Errorless prompts occur prior to response and/or used when task is new

J. Session Management
-----------------------

Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A
Y	N	N/O	N/A

2. Attempts to condition neutral stimuli as preferred items
3. Incorporates functional activities
4. Balances contingent access & fun
9. Spaces activity levels
12. Includes peers in activities

## APPENDIX E

### STAFF SATISFACTION SURVEY

This instrument is adapted from Pritchett's (2010) Staff Satisfaction Questionnaire

**EASTER SEALS NORTH TEXAS AUTISM TREATMENT PROGRAM  
TRAINEE SATISFACTION AND FEEDBACK**

Directions: Please do not put your name on the questionnaire so that all answers may be kept confidential. Answer each question by placing a checkmark in the box that most closely matches your opinion. Use the lines provided to comment on your answer. Please complete all three pages of the questionnaire. Once complete, place the questionnaire in the provided envelope labeled 'Trainee Satisfaction/Feedback.' Please return envelope to the mailbox of Dr. Shahla Ala'i-Rosales in the Department of Behavior Analysis at the University of North Texas at your earliest convenience. Your answers are completely anonymous and will not be directly read by anyone associated with the training process. Your feedback is greatly appreciated and will be considered when improving the training process.

1. Do you feel staff training at the ATP of Easter Seals North Texas is important?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not	Somewhat	Unsure	Important	Extremely
Important	Important			Important

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2. In your opinion, how effective has the staff training process been in improving your ABA implementation skills?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very Ineffective	Ineffective	Unsure	Effective	Very Effective

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3. Overall, how do you feel about your improvement in ABA implementation since starting the staff training process?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very				Very
Dissatisfied	Dissatisfied	Unsure	Satisfied	Satisfied

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4. How comfortable did you feel during the staff training process?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very Uncomfortable	Uncomfortable	Neutral	Comfortable	Very Comfortable

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5. How would you describe your relationship with the staff training provider(s)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very Unsatisfactory	Unsatisfactory	Not Applicable	Satisfactory	Very
Satisfactory				

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6. How does this training process compare to your previous training experience(s)?

(circle one) Same / Different

If "different", was it:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Much Worse Better	Slightly Worse	Equal	Slightly Better	Much

In what way: (please circle one from each line)

More Feedback	Less Feedback
More Instruction	Less Instruction

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7. What improvements would you suggest for the staff training process?

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Additional Comments:

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Thank You!!



APPENDIX F  
TRAINING PROCEDURAL CHECKLIST

## **Staff Training Procedural Checklist**

Trainee: \_\_\_\_\_

Trainer: \_\_\_\_\_

Date: \_\_\_\_\_

Observer: \_\_\_\_\_

### Instructions:

(+): Step completed correctly within training session

(-): Step not completed or completed incorrectly within training session

(N/A): Step not applicable to training session

### Training Procedure:

- \_\_\_ Trainer provides Trainee with Skill list  
(N/A after first session teaching each skill cluster)
- \_\_\_ Trainer praises skills/skill areas in which criteria was met
- \_\_\_ Trainer states first skill(s) in which criteria was not met to target for teaching
- \_\_\_ Trainer provides definition for first targeted skill in which criteria was not met
- \_\_\_ Trainer provides example(s) of targeted skill
- \_\_\_ Trainer models target skill for trainee
- \_\_\_ Trainee practices skill with child in presence of trainer
- \_\_\_ Trainer provides feedback on Trainee's demonstration of the skill
- \_\_\_ If trainee incorrectly implements skill, trainer repeats steps 6 - 8
- \_\_\_ Trainer repeats steps 3 - 9 for remaining skills requiring training during session

### Quality Components:

- \_\_\_ Trainer asks Trainee if he/she has any questions periodically throughout training
- \_\_\_ Trainer speaks respectfully and kindly to trainee
- \_\_\_ Training periodically verbally checks trainee for understanding
- \_\_\_ Trainer adjusts training according to trainee comfort, if possible

APPENDIX G  
INDIVIDUAL BREAKDOWN OF RESULTS

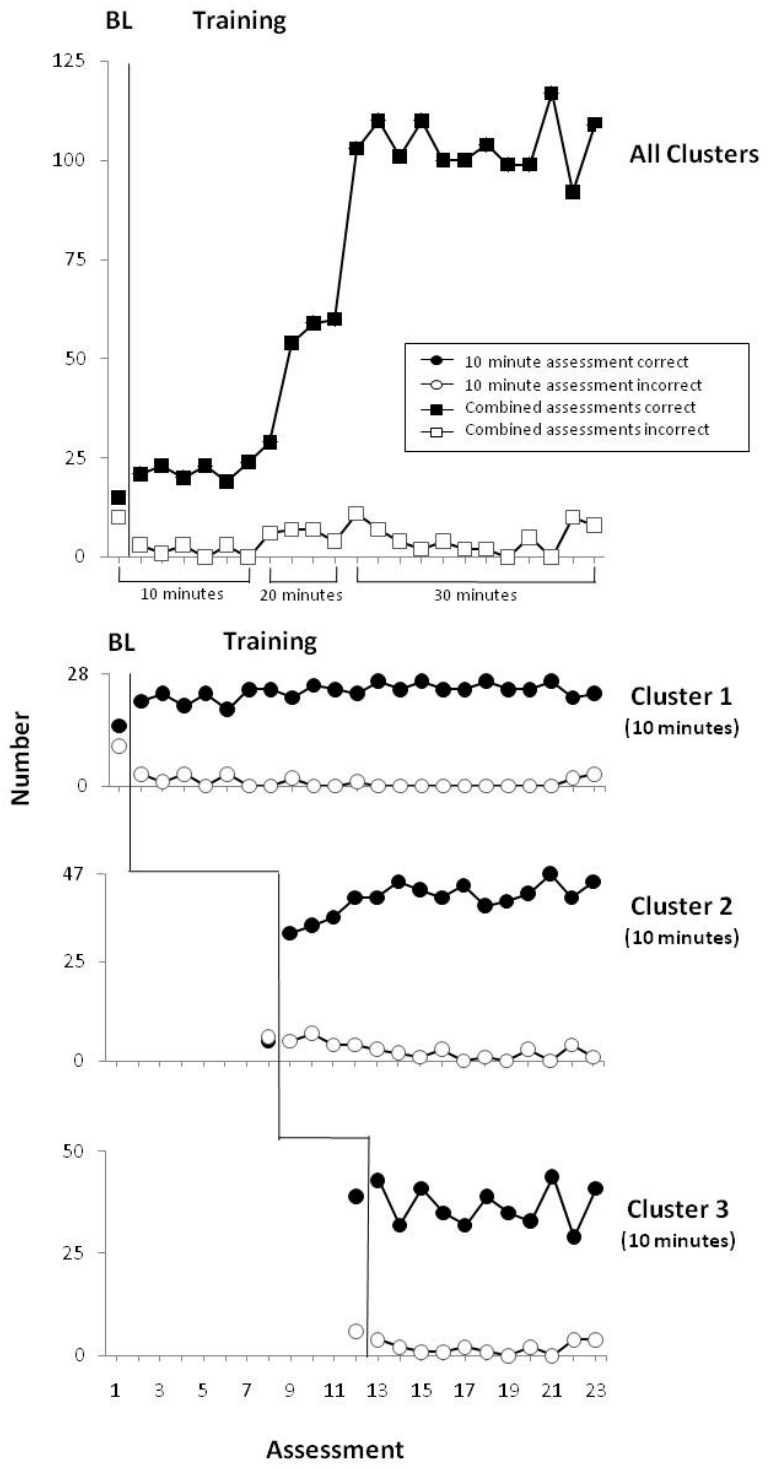


Figure G.1. Progress by component skills for Trainee 1.

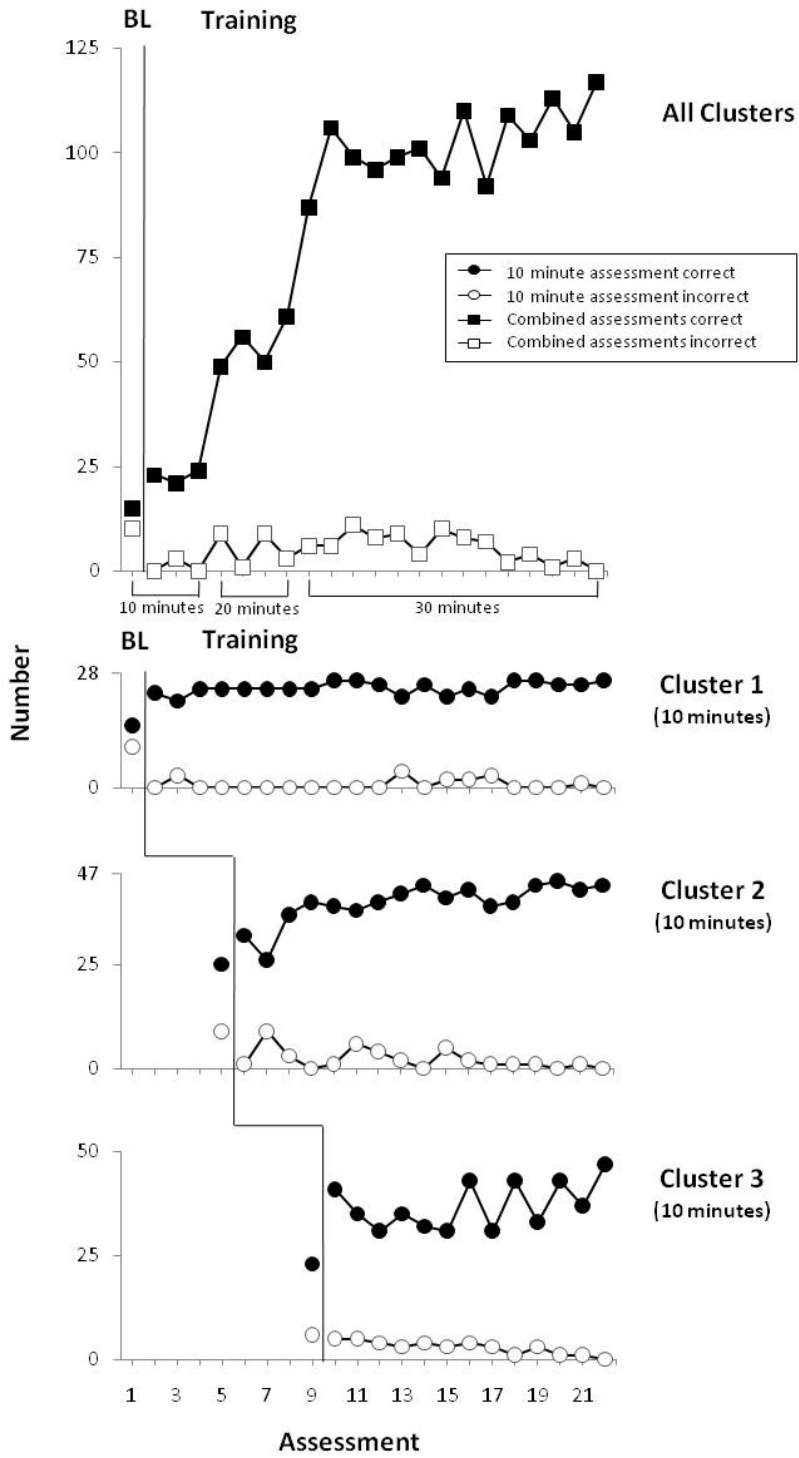


Figure G.2. Progress by component skills for Trainee 2.

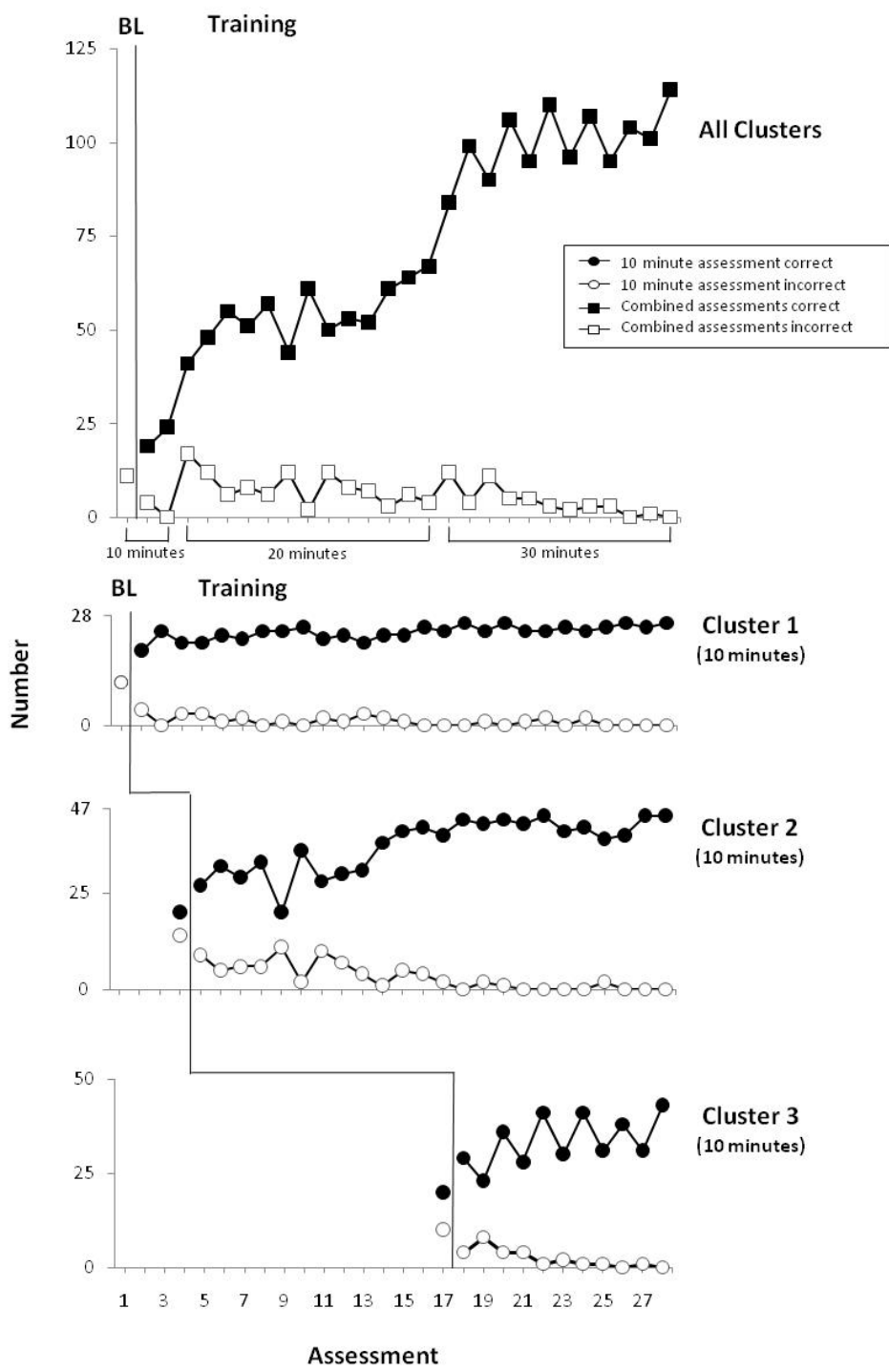


Figure G.3. Progress by component skills for Trainee 3.

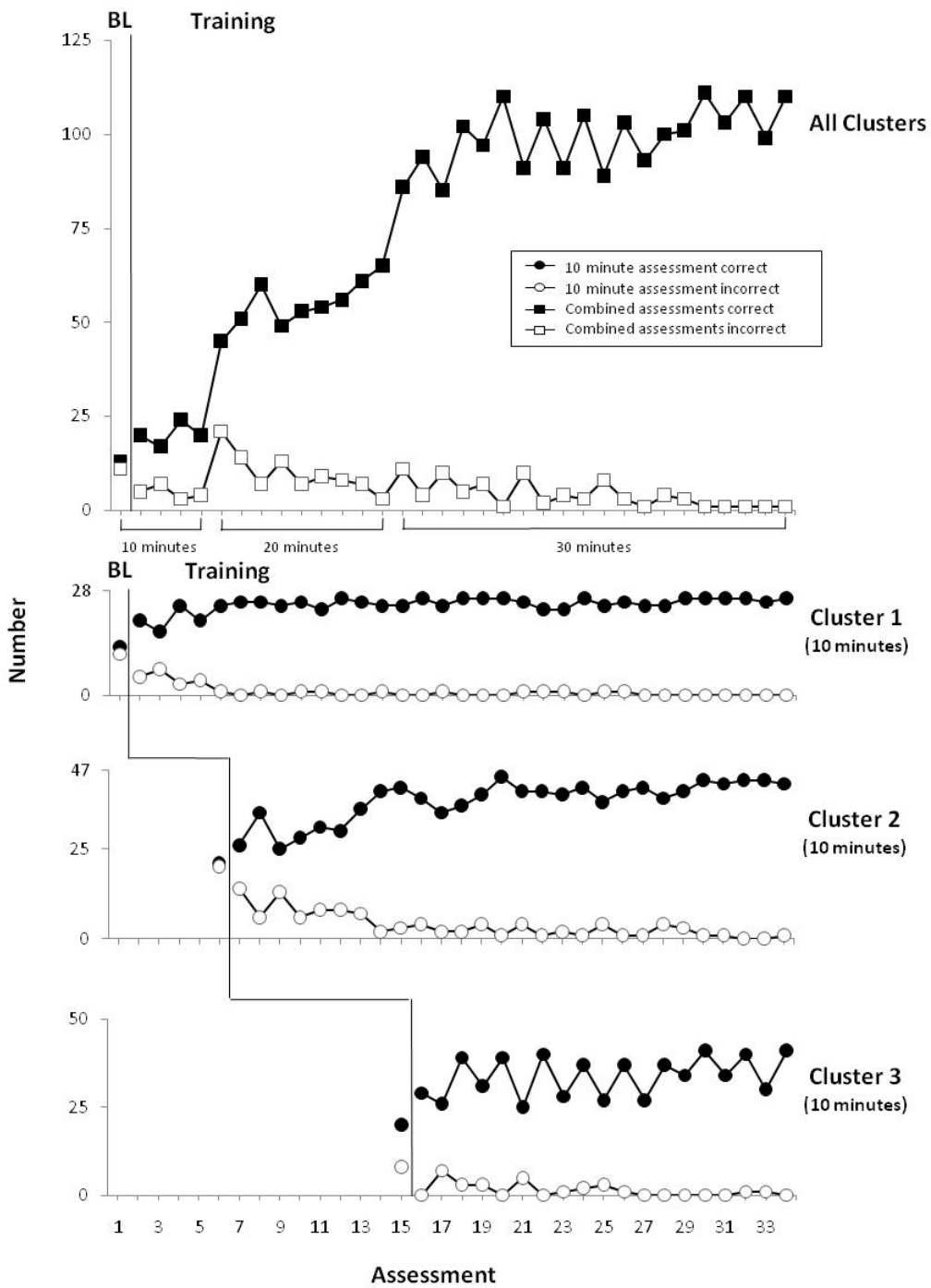


Figure G.4. Progress by component skills for Trainee 4.

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