

Evaluation of a Brief Training to Teach Behavioral  
Intervention and Strategy Terms to Parents

by

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Evaluation a Brief Training to Teach Behavioral  
Intervention and Strategy Terms to Parents

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## ABSTRACT

Applied Behavioral Analysis is a growing and more prominent field. Previous research has indicated that parent training can be beneficial, and the progress moves more quickly with the client when the parent is interactive in the treatment as well. In this research study, the researcher analyzed to see if providing brief ABA training; would increase the knowledge of the parents. In the brief training, the following topics were covered, positive and negative reinforcement, positive and negative punishment, functional behavioral assessments, and behavioral intervention plans. Over 100 flyers were sent out to the families that receive services and 15 responded to participate, however only 14 attended the sessions. The participants took a pre and post-test to determine if knowledge was gained after the classes. It was determined that knowledge did increase after receiving the class based on the post-test. However, it was disclosed by the participants that they would attend more if they were provided. The purpose of this study was to evaluate the effectiveness of a brief ABA training provided in a community behavioral health center to teach basic ABA terminology that may be utilized during treatment with their child.

*Keywords: Applied Behavioral Analysis, Board Certified Behavioral Analyst, parent training,*

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## **Evaluation of a Brief Training to Teach Behavioral Intervention and Strategy**

### **Terms to Parents**

Applied behavior analysis (ABA) is the application of principles of operant behavior to problems of social significance. ABA is best known as a treatment for the symptoms of autism spectrum disorder (ASD). ABA for the treatment of ASD involves various strategies and principles from ABA such as shaping, chaining, and prompting. ABA usually breaks complex skills into small parts and reinforcement is used to increase the frequency of specific behaviors that a client might need to be successful across many domains such as communication, socialization, and self-management. Treatment is provided by trained technicians who work under the direction of certified/licensed behavior analysts. Therapy can be focused on one or a few domains or it can be comprehensive and address multiple domains.

### ***ABA as a Therapy for ASD***

A long history of research has established the effectiveness of ABA as a treatment for ASD. The effectiveness of ABA intervention has already been the subject of several meta-analytic studies (Makrygianni., 2018). In all the meta-analyses, the effectiveness of ABA interventions was demonstrated for the treatment of ASD regardless of what research design was used to evaluate effectiveness. “ABA is a scientific approach in which procedures based on the principles of behavior are systematically applied to identify environmental variables that influence socially significant behavior and are used to develop individualized and practical interventions” (Yu et al., 2020). ABA interventions are recognized as the most effective evidence-based interventions with children with ASD (Fein et al., 2013). Based on previous research, ABA is known to be

highly effective in helping those who have ASD with basic communication skills, games, social interactions, daily living, and self-help skills. According to Yu, Li, and Liang; since the mid-1980s, there has been evidence that ABA has contributed to the steady accumulation of intelligence, language, and social functions in children with ASD. In Eckes (2023), it was concluded that eight meta-analyses found comprehensive ABA-based interventions to be more effective in the treatment of children with ASD than standard care. Solely, Spreckley, and Boyd (2023) concluded that the interventions are not superior to standard care. It was also found that ABA programs showed to be moderate to very effective in improving communication skills.

### ***Therapy Delivered by Technicians***

Therapy is most often delivered by trained technicians who work under the supervision of a behavior analyst. Examples of credentials technicians can hold include the Registered Behavior Technician (RBT) credential, the Applied Behavior Analysis Technician (ABAT), and the International Behavior Technician (IBT). These technician credentials all require ongoing oversight from a certified behavior analyst to implement the treatment protocol designed by the supervising behavior analyst. Services can be provided in schools, clinics, and/or homes.

### ***Generalization to the Home***

The child needs to generalize what they are learning at school or in clinics to the home setting. Generalization happens when a child can apply the skills they have learned in therapy and use them in everyday life. To ensure that a child is generalizing skills being taught in sessions, it is encouraged for parents to recognize various ways their child can successfully generalize learned skills. It is stated in ABSA with ASD, that

generalization is an integral part of the development of any behavioral plan as it allows for the behavior that is being taught to occur (or not occur) under different, non-training conditions. For example, a child may be able to appropriately gain the attention of a teacher, therapist, or peer, but still have trouble getting attention from a sibling at home. To ensure that a child can generalize from a teacher, therapist, or peer to a sibling one must carry over the newly learned behavior by following the same procedures, strategies, and reinforcement schedules that were used to learn the skill initially. Another skill that is imperative to ensure the child can generalize is the skill of counting money. The child may be learning how to count coins at school by using fake plastic coins. At home, the parent can ask the child to count the change on the counter or when they pull it out of their pocket. The child can then generalize it by going to the store with their parent and purchasing an item with their money and having to count it out and give it to the cashier. By generalizing a skill, it sets up the child to be more successful and independent as they get older.

### ***Parent Training***

In addition to therapy implemented by a technician under the direction of a behavior analyst, training the clients' families and/or parents is also an important part of ABA treatment. Having the knowledge and education to understand what their child is receiving during an ABA session is important for parents. According to Helton and Alber-Morgan (2018), parents are unaware of how ABA is implemented in school settings, what the purpose of behavioral goals in an IEP is, and the purpose of a Functional Behavioral Assessment or Behavioral Intervention Plan (FBA/BIP). It was discussed how important it is for parents to understand not only these terms but also to be able to apply

them to their child's plan of care as well. Park, Alber-Morgan, and Fleming (2011) discuss the importance of collaboration with parents and how it can impact the success rate of the child for further success. The article also focuses on how vital it is for the parent to take part in planning and providing the interventions to maximize the effectiveness.

For this to happen, the parents need to be educated on the interventions to not only participate in the plan but also implement them at home for a higher success rate. As parents become more knowledgeable and have a better understanding, it is more likely for them to be involved in the process and continue learning. According to *A Parent's Interactive Guide to ABA* (Curtin., et al., 2014) it provided significant knowledge acquisition and met with high levels of satisfaction by providing parent training. Based on previous research, it has been identified that educational parenting classes are beneficial to increase the effectiveness of parent involvement and success of the child. "Autism is about having a pure heart and being very sensitive... It is about finding a way to survive in an overwhelming, confusing world... It is about developing differently, at a different pace and with different leaps" (Autism Parenting Magazine).

### ***Barriers to Parent Training***

Providing effective ABA in the clinical, home, and school setting continues to be a battle of gaining parent involvement. The BCBA, RBT, ABAT, or IAT must encourage or ask the parent to be involved in the sessions so they can have a clear understanding of what is being implemented throughout the sessions and implement it when the BCBA, RBT, ABAT, or IAT are not present. According to Allen and Warzark (2000), what is consistently missing is a thorough behavioral analysis of the contingencies that



strengthen or weaken parental adherence. More specifically, a functional assessment (FA) of reasons for lack of parent involvement is needed. Completing an FA would give a better outlook on why parents are unable to participate in treatment based on analyzing the target problem. If the main target problem could be discovered, it is believed that this could reduce the nonadherence of engaging in treatment.

Another possible barrier to parent engagement is the daily stress of a parent of a child with autism. While parent training is a promising form of support for the parents, it also adds another task they must add to their daily/weekly agenda. This can impact the parent's mental health, such as causing more anxiety or depression. Since the COVID-19 pandemic, more virtual training sessions have been implemented to help with this barrier to provide a more effective way to help parents (Marino., et al., 2022).

### ***Statement of The Problem***

By participating and engaging in parent training, the parent becomes an active member of their child's treatment team. BCBA, are held to ethical standards (such as code 2.09 *Involving Clients and Stakeholders*) to ensure that appropriate efforts to involve clients and stakeholders throughout the service relationship, including selecting goals, selecting, and designing assessments and behavior-change interventions, and conducting continual progress monitoring as stated by the Behavior Analyst Certification Board (2020). As a BCBA, one must ensure that the parents/stakeholders have a voice in their child's treatment but are also aware of the effectiveness of their active participation as well. As the BCBA on the case, it is pertinent that the plan is written and explain the environmental conditions necessary for effective implementation of the behavior plan to occur and explained to the parent how to effectively implement it at home too. This is

when parent training is vital. The treatment is ineffective if the parent is unaware of how to implement the interventions and strategies. Today, parents often express their frustration with the child engaging in problem behaviors within the school setting but do not understand why. Thus, the purpose of this study was to evaluate the effectiveness of a brief ABA training provided in a community behavioral health center to teach basic ABA terminology that may be utilized during treatment with their child. Is to discover if educating parents on positive and negative reinforcement and consequences, and FBA's and IEPs will allow them to have a better understanding to help their child become more successful in the school setting.

## **Method**

### **Participants and Setting**

The participants, who were parents of children with mental health diagnosis were identified and recruited through the school-based program at a Community Behavioral Health Center in Northeast Ohio. A flyer was sent to the families that currently receive services through the school-based program. The flyer contained basic information on the training such as the topic and times of the training. Participants self-selected by volunteering to participate in the study based on the flyer. Participants were required to send an email to the experimenter indicating which day and time they wanted to participate. Prospective participants were told there would be no change in treatment status for their child based on participation/non-participation or for stopping the parent training after it started. The project received institutional review board (IRB) approval from Youngstown State University (IRB No: 2024-68) All meetings were 45 minutes to

an hour in length and were available in person at the agency or live via synchronous video feed.

### ***Materials***

Participants were presented with information on basic ABA therapy terminology via PowerPoint presentation. A copy of the PowerPoint was handed to them after completion of the pretest and signing the consent form. The information was obtained from the Behavioral Analysis Certification Board (2018), Tarbox (2017), Cooper, Heron, Heward (2007), Johnston & Pennypacker (1980), and Skinner (1938), as well as video sources online that explained the therapeutic interventions and strategies. Topics covered during the training included understanding what ABA is, understanding the purpose of an FBA/BIP, information on positive and negative reinforcement and how to effectively implement it, and information on positive and negative punishment and how to effectively implement it.

### **Procedure**

#### ***Pretest and Posttest***

Parents were recruited through a flyer that was handed out in the schools and signed a consent via email or in person. All meetings were forty-five minutes to an hour in length and available in person at the agency or live via synchronous video feed. Before the start of the lessons, each parent who consented was given a brief pretest on the topics that were covered. Questions included those about terms to be used, their effect on behavior, and other relevant topics (Appendix I). An identical copy of the test was provided to parents immediately after the conclusion of the final lesson. The

effectiveness of the lesson series was analyzed by examining the differences in pretest and posttest scores on information provided in the PowerPoint.

### ***Parent Training Session***

Next, the experimenter (who was a graduate student in ABA at a local state university) proceeded to read from the slides and went more in-depth or provided more examples if asked by the participants as well as provided video clips throughout the lecture. Information on each PowerPoint was retrieved from peer-reviewed sources and/or available textbooks in ABA. During the lecture, the instructor described all the areas on each PowerPoint and answered any questions the parents had regarding the topic at hand. After the meeting ended, the experimenter fielded more questions from parents. If parents posed questions that were specific to interventions utilized with their child, the experimenter directed the parents to discuss the question with their clinical team at the agency. At the end of the second session, the experimenter handed out or emailed (for telehealth participants) the post-test to be completed during the last 10 minutes of the allotted time. If parents asked questions about the items on the pre or posttest, the experimenter simply told them to “do their best” and continue the posttest. All participants completed the pre and posttest within the allotted amount of time.

### **Research Design and Data Analysis**

The study utilized a pre and post-test design to evaluate the effectiveness of the parent training sessions. The pre and post-tests were graded after the completion of both sessions. The effectiveness of the lesson series was analyzed by examining differences in pretest and posttest scores on information provided in the PowerPoint. Specifically, the

percentage of questions answered correctly on the pretest and posttest were compared for changes after the parent training sessions occurred.

### ***Strengths and Limitations of Design***

According to Dimitrov and Rumrill (2003) pretest-posttest designs are widely used in behavioral research, primarily to compare groups and/or measure change resulting from experimental treatments. Providing pre and posttest is a simple analytic choice, as it compares the difference in either posttest scores or gain scores by group (Zientek.,et al., 2016). Another strength in pre and posttest data is you can determine if the material covered throughout the treatment or session was effective or ineffective.

In comparison, providing a pretest at the beginning of the class could change the way the participant approaches the class vs. if they did not receive a pretest at the beginning of the initial class. It is possible that if both the pretest and posttest have the same questions, they are familiar to the participants which becomes easier. This could impact the results by the scores increasing due to practice rather than what is being addressed either in treatment or a class (Knapp., 2016). Lastly, and perhaps more importantly, the pretest posttest is not a true experimental design because they do not contain repeated measures and varied introduction of the independent variable (Harris et al., 2006).

## **Results**

### **Demographic Information**

A total of 14 participants including 7 males and 7 females participated in the study. The age of the participants ranged from 21-63 coming from varying socio-

economic statuses. Based on questions at the beginning of the class, 3 out of 14 of the participants had prior knowledge of what was being discussed in the classes.

### **Pretest and Posttest Results**

The average score on the pretest was a score of 9 out of 16 (56%). The range of pretest percentage correct was 43% to 81%. In comparison, the average posttest score was an average of 13 out of 16 (82%) correct. The range of posttest percentages correct was 68% to 93%. It is determined that the participants did increase their knowledge in positive, and negative reinforcement and punishment as well as FBA's and BIPS. However, the participants did express that having more classes would be beneficial to go more in-depth with each topic.

## **Discussion**

### ***General Discussion***

The purpose of this study was to evaluate the effectiveness of a brief ABA training provided in a community behavioral health center to teach basic ABA terminology that may be utilized during treatment with their child. Based on the results of the research, indicated that the parents did establish more of an understanding and knowledge of the topic discussed. According to the participants, it was established from question and answer before starting the first session, that 3 out of 14 had previous knowledge of the information that was taught during the classes. After the classes, it was expressed from the participants that they would like to take further classes to continue gaining knowledge of the specified topics.

Based on the pretests, the average score was 9 out of 16. The posttest indicated that the knowledge of the participants increased based on the average score going up to

13 out of 16. It was established that most of the participants missed questions #15 and #16 in the pre- and posttest. The experimenter concluded that it could have been due to a flaw in teaching and discussing that topic and not addressing the information of that question specifically in the classes. The research was intended for the participants to gain knowledge and understanding of positive and negative reinforcement, positive and negative punishment, FBAs, and BIPs. According to results showing an increase in knowledge, the overall goal of the research was accomplished.

### **Limitations and Future Research Recommendations**

There were a handful of limitations that came with this study. The first limitation was the number of participants that were able to attend. Over 100 families were invited to participate by either flyer or email, yet only 15 responded. There were also follow-up texts or emails sent as a reminder. It appeared that the availability of when parents or guardians were able to participate was very limited. A Saturday session ended up being implemented due to the researcher attempting to meet the needs and availability of the participants. Secondly, it was established that more time would have also helped the participants. The participants felt that they were informed but thought it would have been more helpful to separate it into different sections. The participants disclosed that learning about negative and positive reinforcement and punishment was confusing and wanted to spend more time on those topics specifically. The third limitation was during the Saturday session where participants did bring their children along with them. This did impact to amount of focus that the participants were able to have due to distractions that occurred throughout the session.

For future research, it is suggested that more sessions be put into place for parents so the material can be broken down by each category. This will allow parents to have time to take in each section of material and focus on learning and understanding it before moving on to the next section. It would also be suggested that after each section you do an EXIT test to see if the participants are either gaining the knowledge or still struggling with understanding a particular concept. This would allow the researcher to start the next session covering the topics that still may be unclear before moving on to the next topic.

Another suggestion for future research would be to provide a full curriculum for the parents and present it to them when their child initially signs up for the program. This will allow the parent to be more involved and knowledgeable in the different behavioral strategies and interventions that are being utilized in the sessions. It will also allow the parent to sign up for the class at the initial assessment. A short questionnaire could be filled out by the parent to establish availability and preference for in-person or online.



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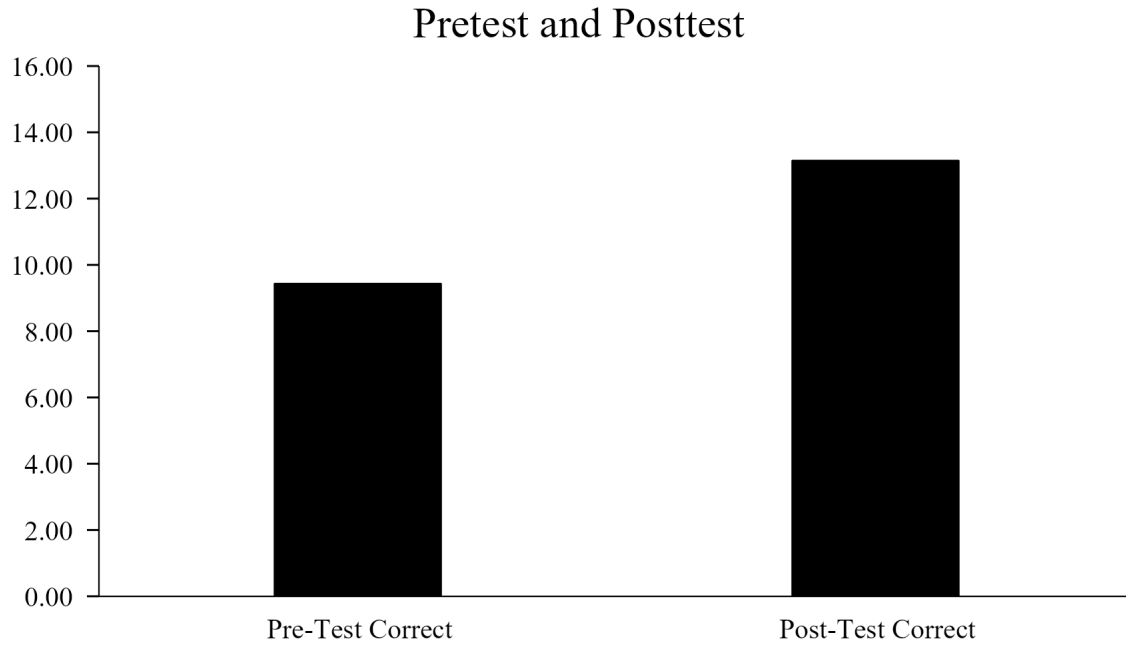
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**Table 1***Pretest and Posttest Scores for All Participants*

Participant	Pre-Test Correct	Post-Test Correct
1	9	12
2	8	12
3	9	13
4	12	14
5	13	14
6	11	14
7	11	11
8	10	15
9	9	13
10	8	14
11	10	11
12	7	12
13	7	14
14	8	15
Average	9.43	13.14

**Figure 1**

*Average Pretest and Posttest Scores*



**Appendix A**

## Pre/Post Test

- 1) What does ABA stand for?
  - a) Applicable Behaviors Analyzed
  - b) Applied Behavior Analysis
  - c) Analyzed Between Antecedents
  - d) Applied Behavior Assessment
- 2.) What is a BCBA?
  - a) Behavioral Collaboration Board Associate
  - b) Board Certified Between Antecedents
  - c) Board Certified Behavior Analyst
  - d) Board Certified Behavior Assessment
3. Select all that are true of functional assessments (FBAs):
  - a) Assists in the creation of effective behavior plans
  - b) Determines an individual's most preferred item.
  - c) Identifies why an individual engages in a behavior (the function)
  - d) Trains staff on how to manage behavior.
4. Functional assessments may help to identify
  - a) IQ (intelligence quotient)
  - b) Environmental variables that contribute to problem behaviors.
  - c) Diagnoses (e.g. Autism) responsible for problem behaviors.
  - d) Underlying or undiagnosed disorders impacting learning
5. When Bob is at the doctor's office, he paces around the waiting room. He becomes upset and starts to bite his nails until and pulls on his hair. Bobs parents request that the clinician working with Bob treat these behaviors. What should be done first?
  - a) Offer him a cookie or another preferred item if he calms down
  - b) Try to reason with him and tell him there is nothing to worry about
  - c) Conduct a functional assessment
  - d) All of these are correct
6. Which of the following are components of a behavior reduction plan
  - a) replacement behaviors

- b) skill acquisition
  - c) Persons responsible
  - d) Interventions (antecedents/consequences)
7. Example: Behavior: Luigi tells a joke Consequence: Sophia saying, “ You are funny” is **added** to Luigi’s environment following his response (the joke). Effect on future responding: Luigi now tells jokes **more often**. **Question:** What was the consequence that seems to have increased the behavior in question?
- a) Luigi told a joke
  - b) Sophia stopped talking to Vincent
  - c) Luigi tells more jokes in the future
  - d) Sophia said “You are funny Luigi”
8. In positive reinforcement, a stimulus is \_\_\_\_\_ following a response.
- a) Subtracted
  - b) Added
  - c) Extinguished
  - d) terminated
9. The term “aversive” in ABA often refers to something
- a) good/preferred
  - b) bad/non-preferred
  - c) new
  - d) boring
10. In negative reinforcement, “negative” meant that therefore something is:
- a) bad and unwanted
  - b) removed after a behavior occurs
  - c) added after a behavior occurs
  - d) Disapproval from authority figures (i.e., negative attention)
11. Example: When Bob curses while watching a TV show, his mom turns off the TV.  
Question: Turning off the TV is what type of consequence
- a) Positive punishment
  - b) Negative punishment
  - c) Not Punishment



- d) Cannot tell from the information provided.
12. Example: Whenever, Andi's cat scratches her leather couch, Andi sprays that cat with a water pistol. The cat's scratching on the couch reduces in frequency overtime.  
Question: Spraying the cat with the water pistol is what type of reinforcement?
- a) Positive punishment
  - b) Negative punishment
  - c) Positive reinforcement
  - d) Cannot tell from the information provided.
13. Punishment is an environmental change that:
- a) follows a response.
  - b) decreases the future frequency of behaviors.
  - c) is something most people don't like
  - d) both a and b
14. In negative punishment, the consequence involves the \_\_\_\_\_ of a reinforcer or preferred item occurs after a behavior happens and the behavior reduces in the future.
- a) acquisition
  - b) loss
  - c) following
  - d) winning
15. What kind of intervention/procedure(s) are used as much as possible when trying to build skills?
- a) reinforcement-based interventions.
  - b) punishment-based interventions
  - c) interventions using reinforcement and punishment together.
  - d) interventions using no reinforcement.
16. Why is reinforcement preferred to punishment when managing behaviors?
- a) Punishment doesn't always work
  - b) Reinforcement is more fun
  - c) Punishment does not teach children what to do
  - d) Both B and C

## Appendix B

## IRB Approval

Feb 23, 2024 2:35:11 PM EST

Kris Brown

Psych Sciences and Counseling 141009, Psych Sciences and Counseling 140719

Re: Exempt - Initial - 2024-68 Behavioral Interventions and Strategies

Dear Dr. Kris Brown:

Youngstown State University Human Subjects Review Board has rendered the decision below for Behavioral Interventions and Strategies

Decision: Exempt

Selected Category: Category 3.(i)(B). Research involving benign behavioral interventions in conjunction with the collection of information from an adult subject through verbal or written responses (including data entry) or audiovisual recording if the subject prospectively agrees to the intervention and information collection.

Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation.

Any changes in your research activity should be promptly reported to the Institutional Review Board and may not be initiated without IRB approval except where necessary to eliminate hazard to human subjects. Any unanticipated problems involving risks to subjects should also be promptly reported to the IRB.

Findings: This is a student investigation of the knowledge of Behavioral Interventions and Strategies by caregivers of kids on the Autism spectrum. In this study, participants will be asked to complete a pre and post-test to distinguish knowledge, provide basic demographic information, and attend two classes about terminology. The participation will take about two hours in total. No identifying information will be reported; participation is voluntary. This meets the parameter of an exempt protocol, category 3 ( i)B.

The IRB would like to extend its best wishes to you in the conduct of this study.

Sincerely,

Youngstown State University Human Subjects Review Board