

CREATING AND EVALUATING TEACHER TRAINING MODULES IN APPLIED  
BEHAVIOR ANALYSIS

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By

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### **Abstract**

The use of applied behavior analysis (ABA) in the treatment of young children with autism has been shown to be effective in increasing their developmental trajectory. Many teachers, however, are unfamiliar with these teaching techniques. In training individuals to implement ABA interventions, didactic training should be paired with activities such as supervised practice and immediate feedback. The purpose of this project was to evaluate the effectiveness in the use of computerized training modules to teach specific information related to implement ABA programming with children with disabilities.

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Over the last 50 years, there has been much research conducted in the treatment of autism spectrum disorder (ASD). The behavioral excesses and deficits exhibited by individuals with autism interfere with the acquisition of new skills. In early childhood, typically developing children learn through observing and interacting with their environment. Typical children receive feedback from their environment which shapes their future behavior to resemble what they have observed. In children with autism, however, social skills deficits and behavioral excesses may be so pervasive that they prevent the individual from attending to the environmental cues that would prompt learning behavior through observation (Matson et al., 1996) This creates a challenge for teachers of students with ASD in that they must find a way to systematically teach these children how to learn behavior through observation. This can effectively be accomplished through the implementation of interventions based on the principles of Applied Behavior Analysis (ABA).

One element of ABA intervention with children with ASD is Discrete Trial Training (DTT). DTT as a part of ABA comes from the idea that behaviors are learned through principles of reinforcement and that these principles can be applied systematically in educating young children with autism. Those who apply DTT as an intervention trust that these children will acquire information readily when it is presented in a structured, clear, concise, and consistent fashion (Harris & Delmolino, 2002). Common elements of DTT that have been included in the research on teacher training are: delivery of antecedents, prompting procedures, shaping, delivery of consequences, management of aberrant behavior, and pacing of instruction (Koegel et al., 1977; Lerman et al., 2008; Sarokoff & Sturmey, 2004).

*A need for training.* In a report on ASD interventions from the Princeton Child Development Institute (1993), the authors (McClannahan & Krantz) speculated that if one were to visit a sampling of intervention programs for individuals with autism, one would find that progress in these programs is “less than illustrious” and that the procedures and practices being used are not well documented for their impact on learning outcomes. If this is true, what is causing the gap between research-based best practice and implementation within intervention programs? Later in the report, the authors state that the structure and organization of an agency should allow for and ensure that all staff members are properly trained and equipped with the knowledge and expertise necessary for implementation of ABA intervention. Thus, it is the responsibility of educators to provide necessary training to ensure staff mastery of skills necessary for implementation of ABA intervention. It is the responsibility of administrators and those funding intervention programs to allocate resources necessary for adequate training of direct service staff.

The research on the effects of ABA interventions in changing behavior in children with autism has been replicated in numerous studies (Matson et al, 1996). However, many teachers and therapists do not exhibit the skills necessary to implement these interventions. In a recent study on the skills of staff in implementing DTT, Sarokoff and Sturmey (2004), found that the three participants in their study were implementing correct procedures only 43%-49% of the time before training.

*Training procedure.* Teacher training is of paramount importance in the implementation of ABA interventions. When structured with the correct elements, teacher training can be highly successful in equipping teachers with the skills necessary

to perform at mastery levels. Didactic training should be paired with activities such as modeling, role-playing, and supervised practice with immediate verbal feedback (McClannahan, & Krantz, 1993). The New Jersey Department of Education (2004) recommends that training and professional development of staff be conducted by professionals who are highly knowledgeable in the area of ABA interventions. The training should consist of initial pre-service and in-service training, continuing in-service through workshops and conferences, and ongoing consultation with staff that are implementing or monitoring an ABA intervention (Librera et al., 2004).

The Princeton Child Development Institute recommends frequent assessment of all staff members' skills to demonstrate if training procedures are indeed effective. They advocate that everyone in the organization be evaluated, the evaluation guides future training, staff are evaluated on skills they have been trained to perform, and the person evaluating is the person who does the training (McClannahan, & Krantz, 1993).

One example of a successful teacher training program was conducted by Koegel et al. (1977). The training procedures implemented in this research study were to first give trainees a manual listing the correct and incorrect use of behavior modification in the intervention of children with autism. Then, the trainees were shown video models of the skills being trained. This was followed by feedback given by the trainer to the trainee while during implementation. The complete training occurred over 25 hours and each teacher reached 90% proficiency on the five skill areas taught, delivery of instruction, prompting, shaping, consequences, and discrete trials.

Sarokoff and Sturmey published research in 2004 on a behavioral training package they had designed. They trained three teachers in ten components of teaching

students with ASD which included: making eye contact, waiting for student attention, delivery of instruction, correction procedure, delivery of consequence, recording of data, and intertribal interval. The training consisted of didactic instruction, rehearsal, modeling, and feedback. The teachers were scored on their performance of ten components in delivering 10 instructional trials. Baseline percent correct for the teachers was at 43%, 49%, and 43% correct. Following training, levels for all teachers were 97% or above.

Lafaskis and Sturmey (2007), in training parents to implement DTT with their children, provided a definitional list of 10 component skills prior to meeting with the parents. The trainer then gave a description of the component skills to the parent followed by modeling of the skills with the child. Next, the parents were observed while they implemented the skills with their child. They were given feedback and the model /observation/feedback was continued until parents reached 90% proficiency on the component skills. These researchers used the same training procedures as the previous experiment in training teachers to implement discrete-trial training in their classrooms with similar results (Sarokoff & Sturmey, 2004).

Lerman, Tetreault, Hovanetz, Strobel, and Garro (2008) designed a study to see the effects of a brief intensive training model for special education teachers focused on implementing direct teaching and preference assessments effectively in their classrooms. The procedures for the training in this study consisted of a 5-day workshop. The first day and half a day on the other four days consisted of lectures, discussion, and role play. The other half of the day for the remaining four days consisted of in-class modeling and practice with feedback between the trainer, trainee and with the trainee's students. Teachers met the accuracy criteria, 100% correct for two consecutive sessions, with all

direct teaching techniques during the study. Follow-up at 3 months post training showed that six of nine teachers performed with at least 80% accuracy in teaching skills. This study showed that a training program including didactic instruction, discussion, modeling, role play and feedback was effective in training teachers in direct teaching skills.

One barrier to the proper training of teachers and direct service staff is limited time available for teachers to engage in professional development activities (Lerman et al., 2008). For financial efficiency, much training occurs outside the context of the individual teacher's classroom. Many teacher training activities occur during a break from application opportunities which can create a substantial delay between training and implementation.

Training procedures need to be developed and implemented in a cost efficient and time efficient manner. Effective training needs to be made available to all professionals in a manner that allows them to be prepared to implement ABA intervention. Due to the shortage of certified special education teachers, turnover rate of direct service staff, and children entering the early childhood special education program throughout the year, training in ABA intervention needs to be available to address these challenges. Several online training programs have been developed in the recent past.

[www.autisminternetmodules.com](http://www.autisminternetmodules.com) contains a system in which participants can login and complete training modules. The content of the modules include Recognizing Autism, Autism at Home, Autism in the School, Autism in the workplace and, Autism in the Community. Each of these content areas contains up to 27 individual modules on topics related to ABA intervention for individuals with autism. They contain an

assessment of content knowledge following each module. The modules contain a video explanation at the beginning of the module. The content is delivered visually. Some pages contain charts or example data sheets. There is no audio commentary to provide further explanation of content. I could not find video examples of principles taught in the modules.

Another training program that has been developed by UC Davis at the Center for Excellence in Developmental Disabilities is available for free online at <http://www.ucdmc.ucdavis/ddcenter/cedd/ourproducts.html>. The training modules on ABA are available on their Autism Distance Parent Education Training webpage. There are 10 lessons included in Module 1: Strategies for Teaching Functional Skills. Each of the modules is presented in a linear fashion moving progressively through each page. The lessons include audio commentary, pictures, video examples, and interactive activities. They end with a post test that gives you immediate feedback on your performance. The content is available in English and Spanish. The teaching strategies include training in ABA principles. The elements of DTT are not thoroughly discussed as it pertains to language and academic instruction. The modules are designed to help parents learn how to teach their child functional skills.

When I began my project these online modules were not yet available. The modules on these websites address some areas of training useful for those who interact with individuals with autism. I could not find free online training available to address specifically training of paraprofessionals who are implementing DTT in classrooms of preschool age children with autism. The two online training mentioned above address topics of behavior intervention and skill instruction but did not include the skills specific

to implementation of DTT. The modules on [autisminternetmodules.com](http://autisminternetmodules.com) do include modules on implementing DTT in the home, school, work, and community environments. The information is only delivered through text. No audio or video elements are included to model appropriate instructional behavior. The modules developed by UC Davis give great examples of functional skill instruction that includes principles of ABA but, does not include DTT.

### **Project Purpose**

The purpose of this project was to create computerized teacher training modules that effectively increase teacher knowledge of skills in delivering instruction and managing behavior of students with autism. These modules will complement the observation and feedback portions of our program's ABA intervention training procedures. The modules focus on elements of instruction and implementation of basic behavior interventions during instructional sessions.

The intent of these modules is to allow for didactic training in ABA intervention to take place in a cost efficient and timely manner. The need to train throughout the year that comes in a field with high staff turnover is addressed because training can be accessed at any time necessary. The self-guided modules permit each trainee to move at a pace that allows him/her to master skills at an individual rate.

The project will evaluate the effectiveness of the modules in teaching the participants the information contained within them.

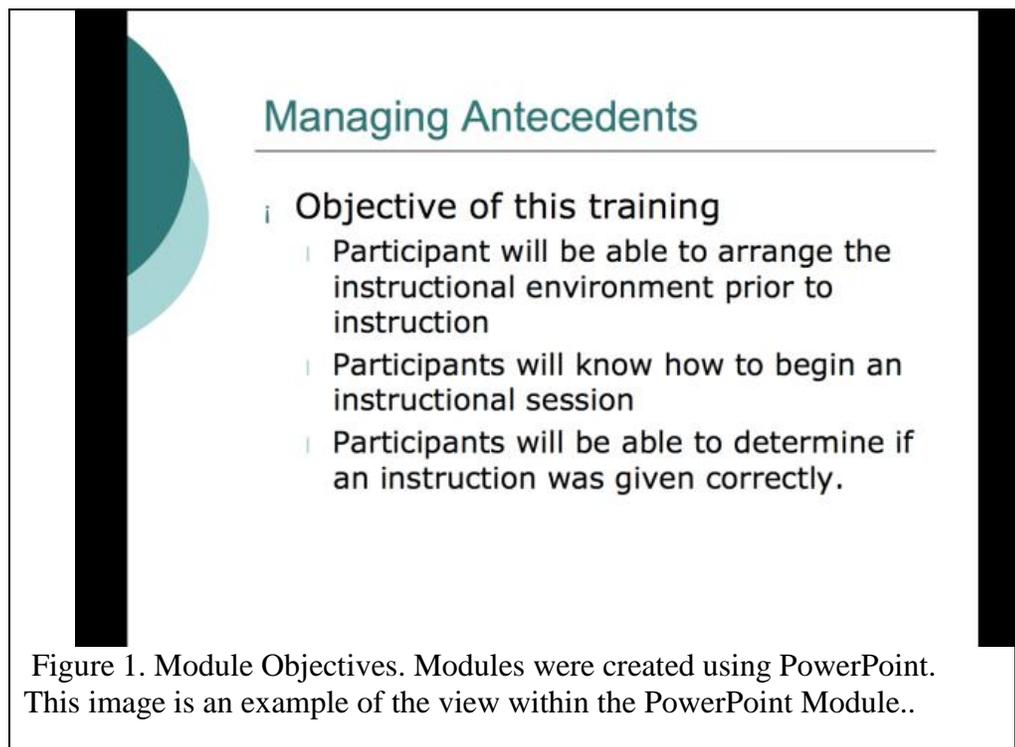
## **Method**

### **Training Modules**

A training module has been created to address the following areas:

1. Basic theory of ABA
2. Management of antecedents and environmental arrangement
3. Prompting and error correction
4. Managing consequences
5. Pacing and data collection
6. Management of student behavior during instruction

Each module includes objectives (Figure 1), audio commentary, and written explanations of appropriate implementation of the skill being addressed. Other elements that are included in the modules are video models of appropriate and inaccurate implementation of the skill to allow a range of examples (Figure 2), images, and audio examples. For an outline of module content see Appendix A.

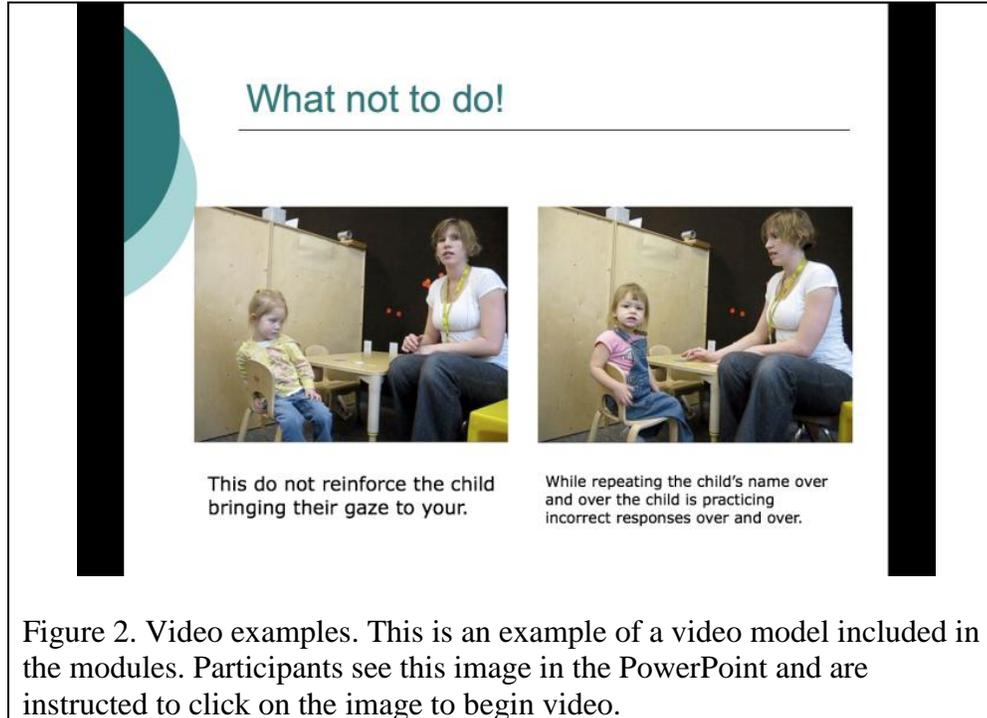


The image shows a PowerPoint slide with a white background and a black border. On the left side, there is a decorative graphic consisting of a vertical black bar and two overlapping semi-circles, one dark teal and one light teal. The slide title is "Managing Antecedents" in a teal font, underlined. Below the title, the text "Objective of this training" is followed by a bulleted list of three objectives. The slide is framed by a black border.

## Managing Antecedents

- i Objective of this training
  - | Participant will be able to arrange the instructional environment prior to instruction
  - | Participants will know how to begin an instructional session
  - | Participants will be able to determine if an instruction was given correctly.

Figure 1. Module Objectives. Modules were created using PowerPoint. This image is an example of the view within the PowerPoint Module..



The training modules were created using PowerPoint. After information was added onto slides, audio commentary was added into the PowerPoint. Videos were recorded by the instructor in an ABA classroom using a home camera with video capability. They were inserted into the PowerPoint. All the elements for each Module are stored in a folder containing the PowerPoint and videos designated for the individual Modules. The content of the modules was pulled from previous PowerPoint presentations used by Paul Day in trainings in Washington County School District, PowerPoint presentations delivered by Tom Higbee from Utah State University and information that I research in articles, books, and handbooks regarding instruction using DTT. Each module covers critical elements of the instructor evaluation form used in Washington County School District to evaluate the performance of their staff in delivering instruction using DTT.

**Evaluation of training modules.**

Before a participant engaged in the training, he/she was asked to complete a pretest that included a sample of the skills that were later discussed within each training module, to show a baseline of their knowledge of ABA and DTT. Each module is followed by a posttest to check for acquisition of content information (Appendix B).

The quizzes were created using UTIPS, an online assessment server created for Utah teachers, through Washington County School District. Questions for the pretest and posttest were entered using multiple choice responses or matching. Participants could view all questions at once or one at a time. The order of the presentation of questions and response choices was randomized.

The participants were asked to complete a survey of their experience in completing each module (Appendix C). The survey was also created using UTIPS. The survey questions included responses to questions regarding personal information and previous experience, responses using Likert- Agreement regarding statements about the module, and responses using Likert- Quality regarding the participants opinion of the quality of the module elements. After quizzes and surveys were completed UTIPS generated reports for each student. The reports could be viewed online by the project coordinator.

**Participants**

Seven paraprofessionals in the early childhood special education (ECSE) setting were chosen to participate in this project. The participants were chosen through suggestions from the classroom teachers. None of the participants had been formally

trained in the use of ABA based intervention with children with autism or DTT. All participants are asked to administer DTT and ABA based interventions in a one to one instructional setting daily. The participants each had a varied amount of experience and education in working with young children and implementing ABA intervention. Six participants have a high school degree plus some college experience. One participant had a bachelor's degree. One participant had worked in special education for less than one year, four had worked in special education for 3 to 5 years, and two participants have worked in special education for 5 to 10 years. Four participants reported having no previous experience with ABA, two participants reported what they felt was limited experience with ABA, and one reported basic experience with ABA. Only one participant reported having participated in previous ABA training. See Table 1

Participant	Age	Education level	Years worked in special education	Previous experience with ABA
A	42	2 years of college	4	None
B	21	3 years of college	3	None
C	36	High School	2	None
D	19	High School	2	None
E	29	Bachelors Special Education	7	College level courses in ABA/ No

				previous training in DTT
F	55	Some college	<1	None

Table 1: Participant Demographics.

### **Settings**

Training for six ECSE participants occurred before or after direct service time with preschool age students. Participants completed computerized pretests and posttests on each training module at the ECSE facility. The participants completed the individual training modules on a computer with audio and video capabilities at the ECSE facilities.

### **Procedure**

The six training modules were created using PowerPoint with audio and video additions. Once each module was completed, they were reviewed for clarity and accuracy of information by at least two of the following: a) the ECSE coordinator, b) Autism Project specialist, or c) ASSERT program director. Each of these individuals has specific training knowledge in the area of ABA and its use as an intervention with young children with autism through clinical application. After review of the modules they were found to be acceptable and nothing was changed. Following this review, the training modules were copied onto discs that were made available for use by the participants.

After participants were selected, they were met with briefly and trained on the purpose of their participation in this project. A review of the areas of instruction was covered along with an explanation of how their performance was to be evaluated. At this

time there was also a review of how to access and navigate the pretests, posttests, and training modules (Figure 3). Each participant was checked for an understanding of these basic computer skills. If they were unable to access these, independently assistance was provided.

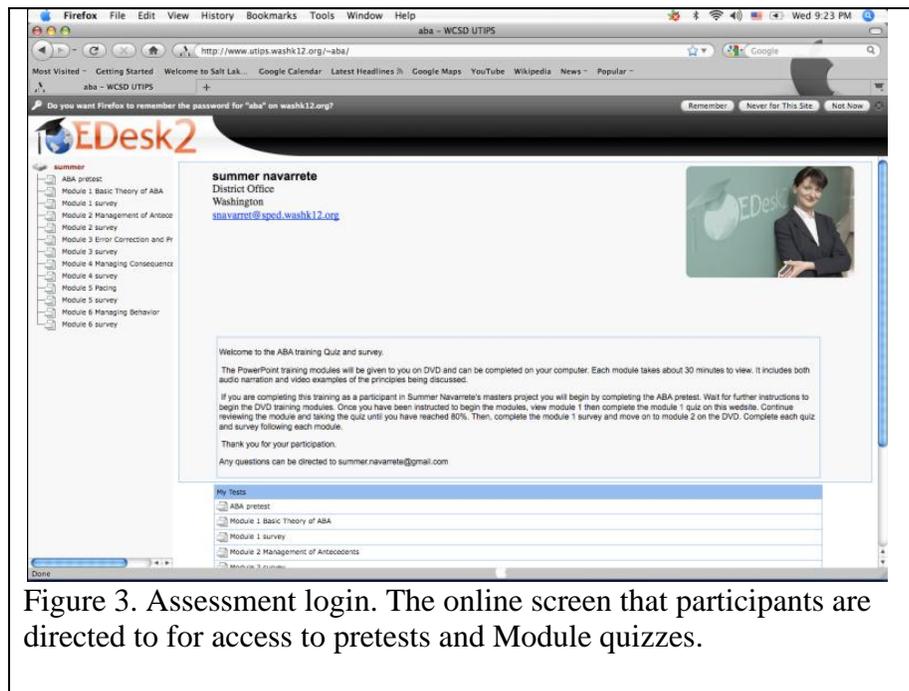


Figure 3. Assessment login. The online screen that participants are directed to for access to pretests and Module quizzes.

Participants were instructed to move at an individual pace. They were not to proceed to the next module until they had completed the previous module posttest with a score of 80% or above. They would then complete a brief survey of their experience completing the module and proceed to the next module. Pretests and posttests were completed electronically and results were evaluated by the project designer (Figure 4).

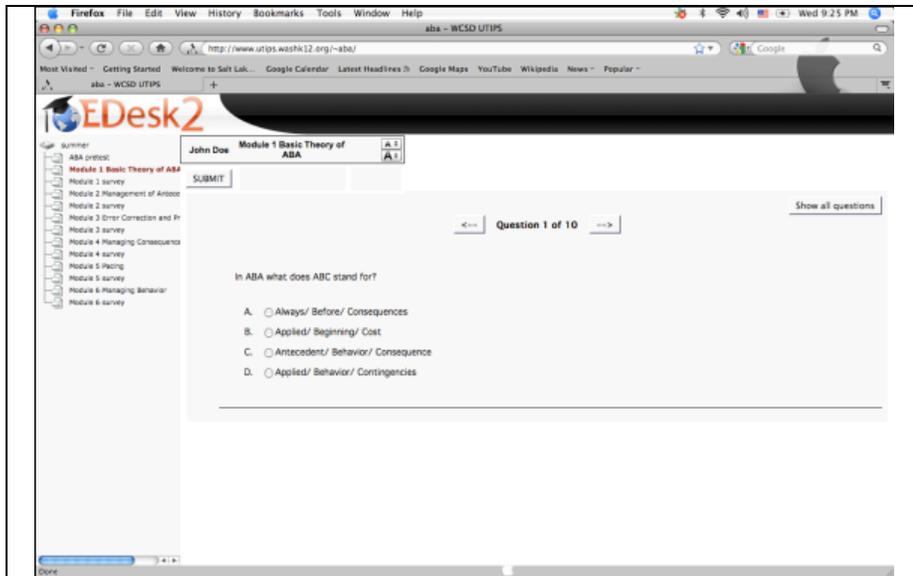


Figure 4. Module Quiz. This is an example of how questions were administered on the online computerized pretest and module quizzes.

## Measures

To measure the effectiveness of the training modules, a comprehensive pretest score was compared to posttest scores on a 10-item quiz following each computer-based module. A bank of question was created based on the content taught in each training module. The pretest contained 60 questions pulled from a bank of 80 questions (Appendix B) and surveyed the skills taught across all modules. The posttests were comprised of 10-15 questions pulled from a bank of questions relevant to each individual module. The available questions from the pretest are the same questions, divided by module content, on each posttest. The participant also completed a survey where they could express their opinion about each module they completed. The comprehensive pretest was administered directly before the participant began the modules. The posttests were administered directly after each module was completed. The computerized quizzes were submitted to the project designer for analysis as each module was completed.

Participants were asked to submit a computerized survey regarding their experience in completing the modules (Figure 5). The same survey was repeated after each module (Appendix C).

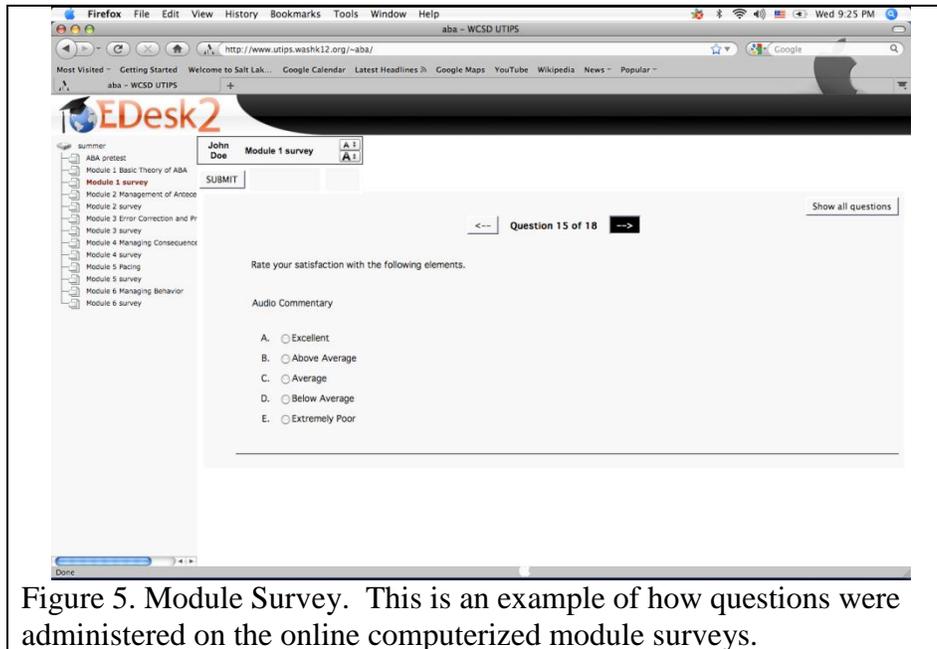
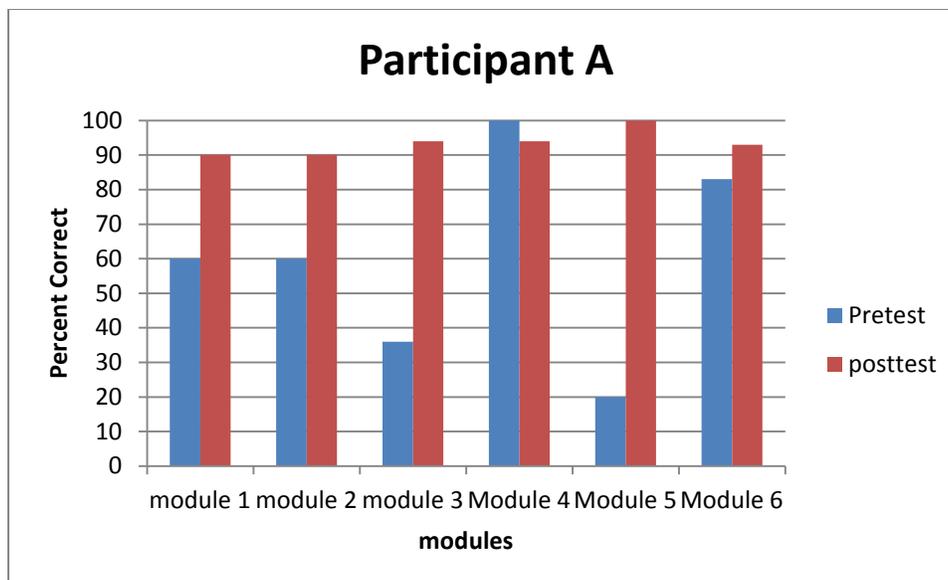


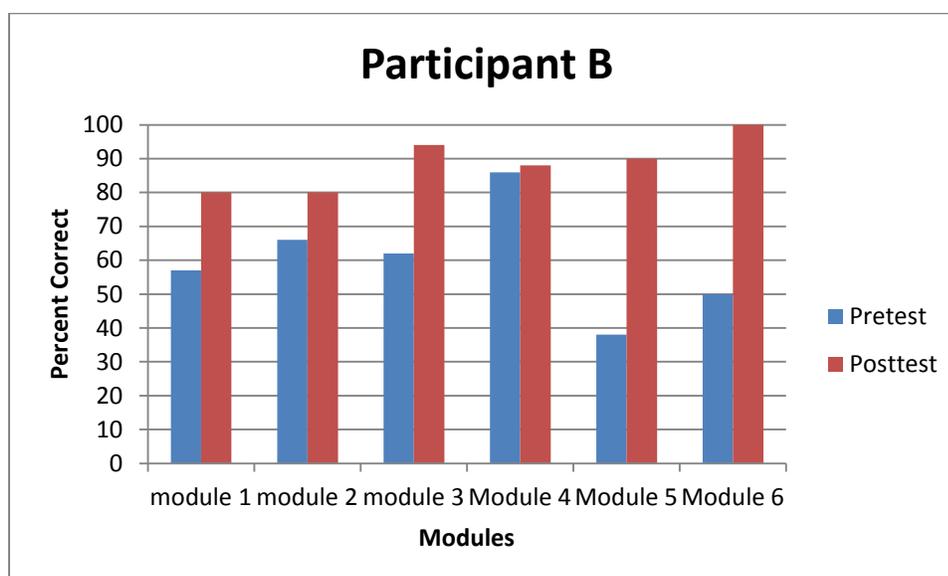
Figure 5. Module Survey. This is an example of how questions were administered on the online computerized module surveys.

## Participant Results

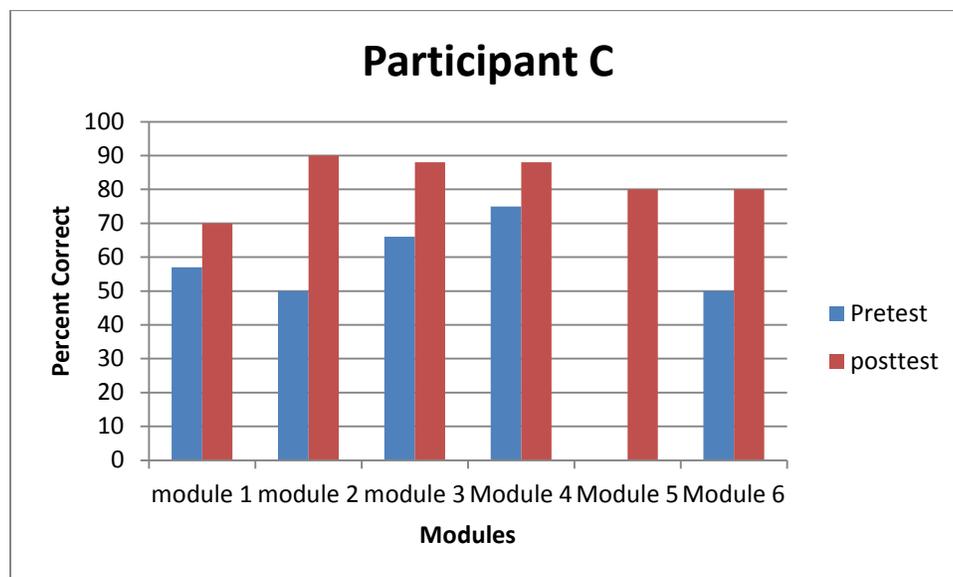
Participant A's overall pretest score was 60% correct. When comparing questions from the pretest to the same questions presented in each module posttest, Participant A shows an average increase of 29% across the six modules as compared to her score on the same questions on the overall pretest. The greatest change of score occurred in module 5 with a score of 20% correct on questions in the pretest related to module 5 and a score of 100% after completing the module. She had a decrease of 6% on Module 4. She had previously scored 100% on pretest questions and missed a question in the posttest.



Participant B's overall pretest score was 59% correct. When comparing questions from the pretest to questions in each module posttest Participant B shows an average increase of 29% correct across the six modules. The greatest gain for Participant B was following module 5 and 6, with a 52% and a 50% gain in scores. Like many of the other participants she had the least amount of gain following module 4 with only a 3% gain.

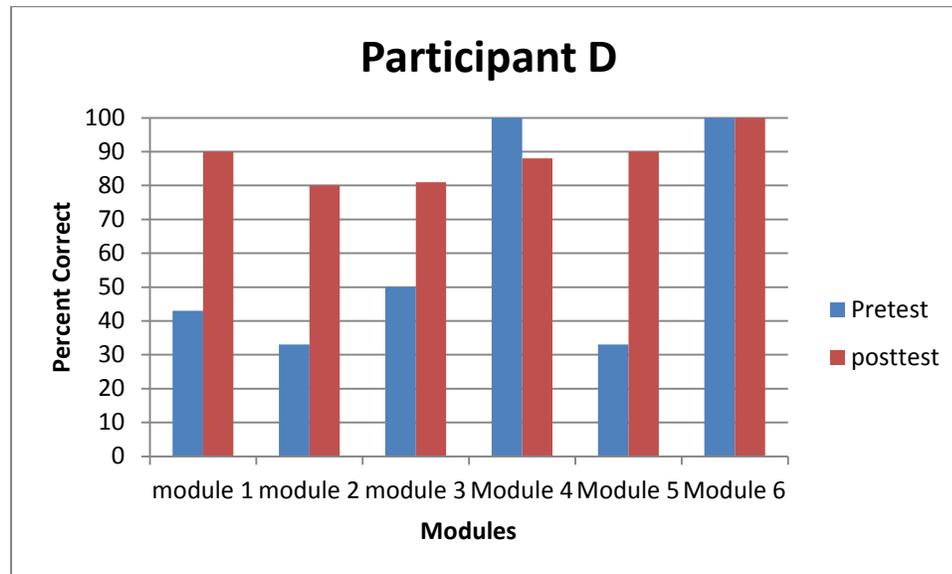


Participant C's overall pretest score was 55% correct. When comparing questions from the pretest to questions in each module posttest Participant C shows an average increase of 33% correct across the six modules. Participant C's final scores were lower than the other participants in general although she increased in score about the same percentage as the other participants. Module 5 showed the largest gain from a pretest score of 0% on questions related to this module to a posttest score of 80%. This is the largest gain by any of the participants in any module.

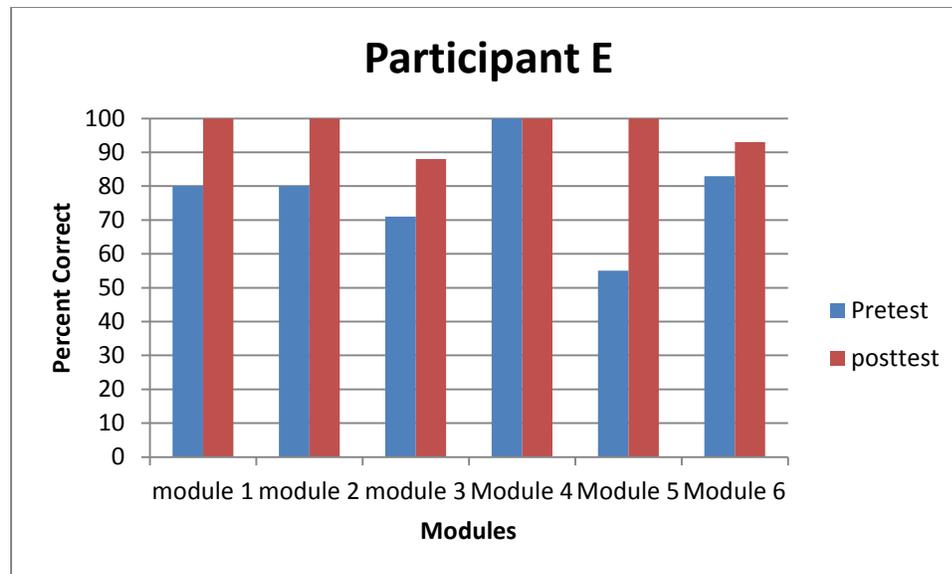


Participant D's overall pretest score was 58% correct. When comparing questions from the pretest to questions in each module posttest Participant D shows an average increase of 28% correct across the six modules. Like Participant A, Participant D showed a decrease in scores following module 4. In the pretest she scored 100% correct and missed a question in the posttest. Participant D made the greatest gain when comparing pretest scores for questions related to module 5 with posttest scores. Participant D repeated the quiz for Module 1 after initially receiving a score of 80% correct. She resubmitted the quiz 4 minutes after the first quiz score was submitted and received a

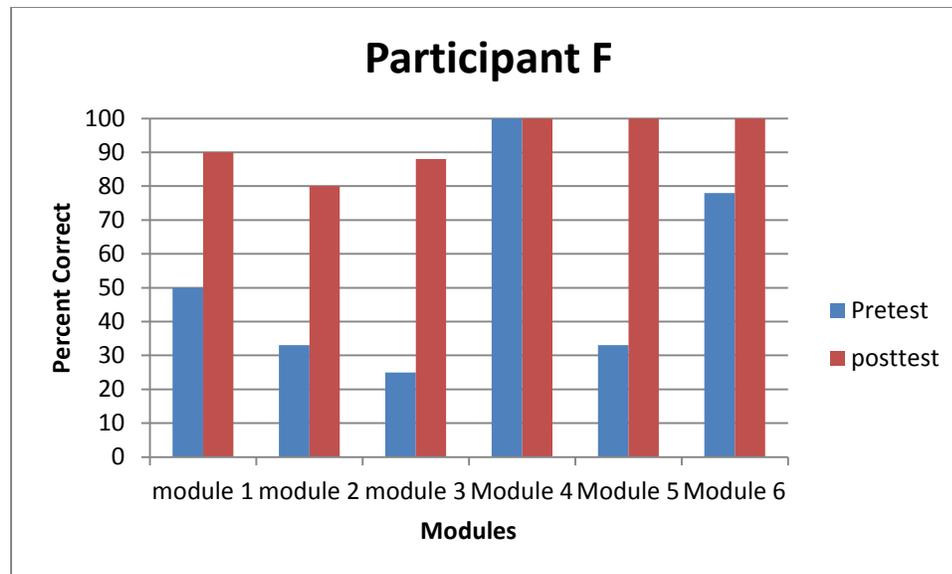
score of 90% correct. She also repeated the quiz for Module 4 receiving a score of 85% and then a score of 88%.



Participant E's overall pretest score was 78% correct. When comparing questions from the pretest to questions in each module posttest Participant E shows an average increase of 17% correct across the six modules. Participant E came into the training modules after completing course work at Utah State University for certification as a mild/moderate special education teacher. In my observation of her in the classroom she had very effective behavior management but was lacking in her consistency when delivering one on one instruction with a child who exhibiting repetitive patterns of behavior. Participant E knew many of the terms and definitions at the start of the training. Because she had already scored high across questions she did not show as much change in score when comparing pretest and posttest. After training I was able to better define for her how her instruction should look and she improved very quickly.



Participant F's overall pretest score was 53% correct. When comparing questions from the pretest to questions in each module posttest Participant F shows an average increase of 42% correct across the six modules. Participant F showed the most improvement in understanding across participants. She had an increase of 77% comparing module 5 pretest and posttest scores and an increase of 63% when you look at the scores related to Module 3. She took the quiz for module 3 three times. Her first score was a 85%. She choose to review the module again the next morning and took the quiz again receiving a score of 85% She quickly reviewed areas in the module that she didn't understand while completing the quiz and then received a score of 88% correct 10 minutes later. She did not have a change of score for Module 4.



<b>Participant</b>	<b>Mean Gain Scores Across Modules</b>
<b>A</b>	<b>29% (58% to -6%)</b>
<b>B</b>	<b>29% (52%-8%)</b>
<b>C</b>	<b>33% (80%-13%)</b>
<b>D</b>	<b>28% (47% to -12%)</b>
<b>E</b>	<b>17% (44%-0%)</b>
<b>F</b>	<b>42% (63%-0%)</b>

Posttest scores for Module 4, Managing Consequences, showed mixed results across participants. In the pretests, participants generally scored high on their understanding of consequences with an average pretest and posttest score of 94% correct. Participant B and C showed an increase in percent correct, participant E and F stayed the same with a score of 100% correct on both pre and posttests, and participant A and D showed a decrease in the percent correct on the posttest compared with their scores of

100% correct on the pretest. Overall, participants scored relatively high suggesting an understanding of behavioral consequences prior to beginning this module. Posttest scores for Module 5, Pacing, showed an average increase across participants of 62% correct on the posttest when compared to the pretest scores. This was the greatest increase across any of the modules. Participants seemed to know very little about how their pacing affects instruction before they completed the module. Increased scores on the posttest for this module suggest substantial gains in knowledge. The pretest scores for module 1, 2, and 3 were in the 50's the posttest scores were in the high 80's. These modules seemed to teach the content effectively. Participants scored higher on average on module 6 but still made an average 20% gain. Overall the modules increased understanding of content presented with the exception of module 4.

<b>Module</b>	<b>Average pretest score across participant</b>	<b>Average posttest score across participant</b>	<b>Average change in score across participant</b>
<b>1</b>	<b>58%</b>	<b>87%</b>	<b>29%</b>
<b>2</b>	<b>54%</b>	<b>87%</b>	<b>33%</b>
<b>3</b>	<b>52%</b>	<b>89%</b>	<b>37%</b>
<b>4</b>	<b>94%</b>	<b>94%</b>	<b>0%</b>
<b>5</b>	<b>32%</b>	<b>94%</b>	<b>62%</b>
<b>6</b>	<b>74%</b>	<b>94%</b>	<b>20%</b>

### **Error Analysis**

The questions used in the pretest and posttest were taken from the same bank of questions. During the pretest each question was presented in a randomized order all mixed together. It may have been useful to have participants complete each set of questions prior to each module and then again following each module to give a clearer picture of their knowledge. There was no maintenance measure taken to see if participants maintained information from the modules across time. Each participant took about 30 minutes to complete each module and no more than 10 minutes to complete each quiz. Some questions showed a pattern of error across participants.

Question five from the pretest asked the participants to respond to:

<input type="checkbox"/>	5)	Put the 6 components of a discrete trial in order	
	1	gain attention	
	2	Discriminative Stimulus	
	3	Prompting if necessary	
	4	behavior/ student response	
	5	consequence	
	6	inter trial interval	

Two out of four participants responded incorrectly to this question in the posttest following Module 1. This concept was demonstrated visually, in a video example, and as a chart. It was again repeated in each of the subsequent modules. It is important to understand the sequence of a behavior chain as we demonstrate and explore each aspect in future modules. Errors may have resulted because the concept as presented in the modules differed from the sequence of components as presented in the question. A slide that repeats this information and emphasizes its sequential nature could benefit this module.

Question 10 from the pretest asked the participants to respond to:

10) Mark all examples of a discriminative stimulus.

**A. Stop light**

**B. Teacher**

**C. Instruction**

**D. Flashcard**

**E. A Parent**

**F. Worms**

Two out of four Participants responded incorrect to this question in the posttest following Module 1. The module contained some brief examples of SD as well as a video example of the delivery of a SD in an educational setting. Adding to the module a broader definition of what a discriminative stimulus is, would benefit the learners. Understanding that any SD can signal the availability of a consequence is important when intervening with problem behavior, teaching generalization to new materials and environments, and maintaining skills.

Question 14 from the pretest asked participants to respond to :

14) Mark all that apply: Why is good rapport building important before beginning a session?

**A. It reinforces coming to the work area.**

**B. It allows the child to see you as the reinforcer**

C. It isn't that important and takes up valuable instructional time.

**D. It helps in creating and maintaining social behavior.**

Three out of six participants responded incorrect to this question following Module 2. Participants marked some of the responses but not all that apply. Clarifying the expectations for response by changing it to mark the one that does not apply would increase correct responses. Each of the correct statements was mentioned in the slides in Module 2.

Question 41 on the pretest stated:

41) Put in order of least to most intrusive type of prompt.

Least 1	model prompt
2	gestural prompt
3	Touch prompt
4	Partial physical prompt
Most 5	Full Physical Prompt

Four out of six participants responded incorrectly to this question on the posttest for Module 3. A module explaining most to least intrusive prompting should be added to the section of the module which covers the topic of fading prompting. This could easily include a video example with the instructor repeating the skill and prompting from most to least intrusive, coupled with a presentation of the term on the screen when the instructor is demonstrating the prompt (e.g., “touch prompt” appears on the screen as the instructor performs the prompt).

Question 43 in the pretest asks the participants to respond to:

43) In behavioral terms define Extinction:

- A. when the last of a species dies out
- B. teaching a replacement behavior for a behavior you want to decrease
- C. withholding or blocking reinforcement**
- D. differentially reinforce other behaviors

Half the participants scored correctly on this question in the posttest following Module 4. The module could use added explanation of what extinction means as it related to behavioral terms along with some video examples.

There were no consistent errors across any one question in the questions related to Module 5 and 6.

### **Survey results**

The survey included questions about the participant's previous training experiences and background. Then it asked questions about their experiences with the module. Participants were able to respond to statements about their experience in completing each module if they: strongly agree, agree, undecided, disagree, and strongly disagree. Next they were asked to rate their satisfaction with the module elements: excellent, above average, average, below average, poor. Last they were asked to comment on what they found valuable in the module.

Overall participants agreed to strongly agreed that objectives were clearly stated, content was valuable, the modules increased their knowledge of the content, it was well organized and they were able to access it without difficulty. Participants rated for all modules the overall PowerPoint and audio commentary as above average to excellent. They rated the quizzes as above average to excellent with the exception of module 5. One participant rated the quiz for Module 5 as below average. I did not have an indication of why they rated the quiz below average. In the future I would require participants to respond with a short answer of why they rated a particular element below average. The video examples were rated as above average to excellent for the first 4 modules, which

contain numerous video examples. Module 5 received a rating of average to above average for video examples. This module only contained three video clips. Module 6 received a rating of below average to average on video examples. There were no video examples in module 6 and participants would have liked to see the skills taught demonstrated through video examples.

. Comments from the participants regarding module 1 included the following:

**“It offered a lot of information that I deal with every day, and helped clear up some questions that I had.”**

**“I liked how when you were doing the commentary you weren't just reading what was on the screen you were also talking about other examples and situations. You would add to what was on the screen which helped me to understand what you were meaning.”**

Comments from the participants regarding module 2 included:

**“I was able to think about how I have worked with the kids in gaining attention and see what I have done wrong and what I have done wrong and correct the things that I have been doing wrong.”**

**“It helped me understand what was the correct way and incorrect way to start a trial.”**

**“This module was most helpful because I have been doing one on one instruction since I started in March and what I gained from this module will help me to change the things I have been doing incorrectly.”**

Comments from the participants regarding module 3 included:

**“It helped me to realize when I am giving the children a prompt without realizing I was doing it so I can fix it in the future.”**

**“I thought the training provided a lot of good video examples. It helped reinforce what the power point was saying.”**

Comments from participants regarding module 4 included:

**“It helped reinforce what I knew about reinforcement and punishment and clear up questions I had.”**

**“It helped me to know how to respond to the children when they have certain behaviors.”**

**“It showed me the difference between reinforcement and bribery and that I need to be careful not to use bribery accidentally”**

Comments left by the participants regarding module 5 included:

**“I did not understand this module as well as some of the others. I may need a review. I liked the ideas presented**

**for us to use for daydreaming bad behavior and self stimulating behavior.”**

**“It helped me see what I need to do when a child is not working with me or how I can get the child to pay attention to me when they don’t want to.”**

**“It helped remind me how to keep good pacing and what things I should and should not be doing.”**

. Comments left by the participants regarding module 6 included:

**“It showed me that I need to evaluate myself and make sure that I am doing everything I need to be doing in order for the child to have success. FYI, the videos either did not work or they were not there. That would have been helpful since I am a visual learner.” “It taught me I need to look at what I am doing before I try to figure out the child.”**

Average agreement with statement regarding content by all participants. Scale of Strongly agree = 5, Agree= 4, Undecided= 3, Disagree= 2, Strongly Disagree= 1						
	Module 1	Module 2	Module 3	Module 4	Module 5	Module 6
Objectives clearly stated	5	4.75	4.5	4.5	4.5	4.5
valuable to the participant	4.3	4.25	5	4.5	4.5	5

Increased participant knowledge	4.6	4.75	4.75	4	4.75	4.75
accessed without difficulty	4.8	5	4.75	4.75	5	4.75
well organized	4.6	4.75	4.75	4.5	4.75	4.75

Average participant satisfaction with module elements. Scale of: Excellent= 5, above average= 4, average =3, below average= 2, extremely poor= 1

	Module 1	Module 2	Module 3	Module4	Module 5	Module6
Video	4.6	4.75	4.75	4.5	3.5	2.5
Examples						
Audio	4.6	4.25	4.5	4.5	4.75	4
Commentary						
Online quiz	4	4.75	4.5	4.5	3.75	4.5
Overall Ppt	4.3	4.75	4.75	4.5	4.5	4.75

### Discussion

The purpose of this project was to create computerized didactic teacher training modules that effectively increased teacher knowledge of skills in delivering instruction and managing behavior of students with autism. Mean scores increased for all participants and for all modules, although individual participant scores for some modules decreased or were limited by ceiling effect (100% correct) on the posttest. The six

participants demonstrated an average increase of correct responding of 30% when pretest scores are compared to posttest scores, with the least mean increase being 17% and the greatest increase being 42%. The module that showed the least increase, and some decrease in correct responding to posttest questions, was module 4. Coming into the training, participants had good foundation knowledge in delivering consequences. They had had no previous training in consequences and the reason for their understanding is not defined. The module that saw the most increase in scores was Module 5 on pacing. Before training, participants had minimal understanding of how their pacing effects instruction and after training they showed a 62% increase. Participants scored between 80-100% correct on each posttest following the modules, with the exception of Participant C on Module 1. This shows the participants had a good understanding of the content taught in each module when they were asked to respond to questions regarding the information taught.

Overall the modules were effective increasing participants' understanding of ABA principles. All participants' scores increased between the pretest and posttest for 5 of the six modules. The module that did not show an increase was Module 4 due to a ceiling effect. In the future it would be useful to expand module 4 to include more in-depth information on delivering consequences in order to use training time more effectively. Along with improvements to specific modules listed above (see Error Analysis) I would find it useful to add video examples to module six. The content of the module made it difficult to capture examples that would be useful in demonstrating the principles. For visual learners, if video examples are not available, I could add pictures that would help emphasize the information.

In the future, it would be useful to use these PowerPoints to create online podcasts or tutorials that can be accessed readily by district staff. Training modules would be accessed more readily by members of the district if they were available on Blackboard or for download onto portable devices. The assessments could be built in as links at the end of each module adding ease to navigation of the module. I found it useful to schedule ABA training time into my daily schedule. The paraprofessionals completed training activities during regularly scheduled work hours. They also had the opportunity to immediately following completion of a training module.

In the initial planning of this project participant's performance in implementing ABA instruction would be evaluated prior to training, midway through training, and after completing all modules. Due to the resources available, the performance evaluation was not included. This was a major limitation to this research project. Because this information was not collected, there is no measure to see if improved performance on these tests would actually translate into improved performance of these skills with actual students. Future research might include a comparison of performance measures of participants' pre and post training experience to see if the modules were associated with a change not only in their content knowledge, but that it translated to their performance in instruction.

Since creating the training modules for my school district, I have been able to share training information with other colleagues in the special education preschool, life skills, resource, and home school settings. I have shared the training with other educators, administrators, parents, para-educators, and students studying special education. I have

had many comments regarding how thorough the training modules are, the quality and range of video examples, and the expansion of idea in the audio commentary. Most individuals who I have shared with have been very pleased with their experience in using the training modules. In the future, I plan to look into the process of making the trainings available to other agencies. It has shown to be effective in teaching content in an accessible and timely manner.

## References

- Anderson, S. R., Campbell, S., Cannon, B. O. (1994). The May Center for Early Childhood Education. In Harris S. L., Handleman J. S. (Eds.), *Preschool Education Programs for Children with Autism* (p. 11). Austin, TX: Pro-Ed.
- Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*, 91-97.
- Birnbrauer J. S., Leach D. J. (1993). The Murdock early intervention program after 2 years. *Behavior Change, 10*, 63-74.
- Dawson, G., & Watling, R. (2000). Interventions to facilitate auditory, visual, and motor integration in autism: A review of the evidence. *Journal of Autism and Developmental Disorders, 30*, 415-425.
- Harris, S.L., & Delmolino, L. (2002). Applied behavior analysis: Its application in the treatment of autism and related disorders in young children. *Infants and Young Children, 14*, 11-17.
- Howard, J. S., Sparkman, C. R., Cohen, H. G., Green, G., & Stanislaw, H. (2005). A comparison of intensive behavior analytic and eclectic treatments for young children with autism. *Research in Developmental Disabilities, 26*, 359-383
- Iwata, B.A., Wallace, M. D., Kahng, S. W., Lindberg, J. S., Roscoe, E. M., Conners, J. et al. (2000). Skill acquisition in the implementation of functional analysis methodology. *Journal of Applied Behavior Analysis, 33*, 181-194.
- Koegel, R. L., Russo, D. C., & Rincover, A. (1977). Assessing and training teachers in the generalized use of behavior modification with autistic children. *Journal of Applied Behavior Analysis, 10*, 197-205.

- Lafasakis, M., & Sturmev, P. (2007). Training parent implementation of discrete-trial teaching: Effects on generalization of parent teaching and child correct responding. *Journal of Applied Behavior Analysis, 40*, 685-689
- Lerman, D. C., Tetreault, A., Hovanetz, A., Strobel, M. & Garro, J. (2008). Further evaluation of a brief, intensive teacher-training model. *Journal of Applied Behavior Analysis, 41*, 243-248.
- Librera, W. L., Bryant, I., Gantwerk, B., & Tkach, B. (2004, Fall). *Autism program quality indicators: A self-review and quality improvement guide for programs serving young students with autism spectrum disorder*. Trenton, New Jersey: New Jersey Department of Education, Office of Special Education Programs.
- Lovaas, O. I., Berberich, J. P., Perloff, B. F., Schaeffer B. (1966). Acquisition of imitative speech by schizophrenic children. *Science, 151*, 705–707.
- Matson, J. L., Benavidez, D. A., Compton, L. S., Paclawskj, T. & Baglio, C. (1996). Behavioral treatment of autistic persons: A review of research from 1980 to the present. *Research in Developmental Disabilities, 17*, 433-465.
- McClannahan, I. e., & Krantz, P. J. (1993). On systems analysis in autism intervention programs. *Journal of Applied Behavior Analysis, 26*, 589-596.
- Ramey, S. L., & Ramey, C. T. (1999) Early experience and early intervention for children “at risk” for developmental delay and mental retardation. *Mental Retardation and Developmental Disabilities Research Reviews, 5*, 1-10.

Sarokoff, R. A., & Sturmey, P. (2004). The effects of behavioral skills training on staff implementation of discrete-trial teaching. *Journal of Applied Behavior Analysis*, *37*, 535-538.

Smith T., Groen A. D., Wynn J. W. (2001). Randomized trial of intensive early intervention for children with pervasive developmental disorder. *American Journal of Mental Retardation*, *105*, 269–285.

## Appendix A

### Module 1 Basic Theory of ABA

- I. What is ABA
- II. What is an ABA program
  - a. Components
- III. What affects Behavior
  - a. Antecedent
    - i. Discriminative Stimulus
    - ii. Motivate operations
  - b. Behavior
  - c. Consequence
    - i. Reinforcement
      1. Positive reinforcement
      2. Negative reinforcement
    - ii. Punishment
    - iii. Relativity of a Consequence
- IV. Discrete Trial Training
  - a. Definition
  - b. Components

### Module 2 Managing Antecedents

- I. Environmental Arrangement
  - a. Preparing a workspace
  - b. Rapport building
  - c. Identify potential reinforcers
    - i. Stimulus preference assessment
- II. Gaining attention
  - a. Why it's important
  - b. How to gain attention
  - c. Things to avoid
- III. Delivering an instruction
  - a. Voice tone
  - b. Provide the proper instruction
  - c. Other important information in delivering an SD
    - i. Verbal instruction before nonverbal
    - ii. Materials in place before an instruction
    - iii. Vary pattern of presentation of SD
    - iv. When to end a trial as incorrect

### Module 3 Error Correction and Prompting

- I. Purpose
- II. Errorless teaching

- a. When to prompt
- b. Where in a trial to prompt and why
- c. Types of prompts
  - i. Verbal prompts
  - ii. Full physical prompts
  - iii. Partial physical prompts
  - iv. Touch prompts
  - v. Model prompts
  - vi. Gesture prompts
  - vii. Positional prompts
  - viii. Text prompts
  - ix. Picture prompts
  - x. Auditory prompts
- d. When to use what prompts
- e. Inadvertent prompt
- f. Feedback following a prompt
- g. Mass prompting
- III. Incorrect response
  - a. No Response
    - i. Error correction procedure
  - b. Incorrect (poor attention/ effort)
    - i. Error correction procedure
  - c. Incorrect (good attention/ effort)
    - i. Error correction procedure
  - d. Poor Behavior
    - i. Error correction procedure
- IV. Transfer Trial
  - a. Interference

## Module 4 Managing Consequences

### I. types of consequences

- a. Reinforcement
- b. Punishment
- c. Extinction

### II. Reinforcement

- a. relativity of reinforcement
- b. Identify possible reinforcers
  - a. Stimulus preference assessment
- c. Primary Reinforcers
- d. Conditioned reinforcers
- e. Types of reinforcers
  - a. Tangible
    - i. Edible

1. Pairing reinforce
  - ii. Activities
  - iii. Toys preferred objects
- b. Social Reinforcement
  - i. Praise
  - ii. Social games / social praise
- c. Determining reinforcement success
- d. Inadequate reinforcement
- e. Bribery

### Module 5 Pacing

- I. Keys to maintaining good attention
- II. between trial pacing
- III. Intermixing trials
- IV. Limited time with reinforcers
- V. Variety of Reinforcement
- VI. Differential Reinforcement
- VII. Proper Break Schedule
- VIII. Problem Behaviors
  - a. Daydreaming
    - i. Behavioral momentum
  - b. Self stimulatory behavior
  - c. Acting Silly/ Disruptive/ Noncompliant
    - i. Escape
    - ii. Attention Seeking

### Module 6

- I. Evaluate your instruction
- II. Behavior Intervention
  - a. 3 steps to decreasing problem behavior
    - i. Determine function
      1. Setting events
      2. Antecedents
      3. Consequences
      4. Major Function Of behavior
        - a. Escape/Avoid
        - b. Gain access/ attention
    - ii. Analysis of a behavior chain
      1. Example 1
      2. Example 2
      3. Example 3
    - iii. Extinction
      1. Forms of extinction

- a. Attention
  - b. Gain tangible
  - c. Escape
  - d. Automatic Positive
- 2. Considerations in using extinction
- iv. Replacement Behavior
  - 1. Example 1
  - 2. Example 2
- v. Schedules of reinforcement
  - 1. Intermittent
  - 2. Fixed Interval
  - 3. Fixed Ratio
  - 4. Token Economy
  - 5. Variable ratio

## Appendix B

<input type="checkbox"/>	1) What is Applied Behavior Analysis?
	<b>A. The study of learning and human behavior</b>
	B. Defines the age and developmental stage in which a child is ready to learn a set of skills
	C. A philosophy created in the search for an effective cure for Autism and is only shown to be effective with people with autism
	<b>D. Involves direct observation and measurement of behavior and environment</b>
	E. Involves recalling occurrences of behavior and keeping anecdotal records of teachers perceptions of events
	<b>F. Looks at antecedent stimuli, positive reinforcers, and other consequences and their relationships</b>

<input type="checkbox"/>	2) Match the behavioral consequence with its definition								
	<table border="1"> <tr> <td>negative reinforcement</td> <td>Following a behavior, a stimulus is removed, which results in an increase in behavior</td> </tr> <tr> <td>positive reinforcement</td> <td>Following a behavior, a stimulus is presented, which results in an increase in behavior</td> </tr> <tr> <td>Punishment</td> <td>Following a behavior, a stimulus is presented or removed, which results in a decrease in behavior</td> </tr> <tr> <td>extinction</td> <td>Following a behavior, a stimulus that has previously caused an increase in behavior is blocked or removed</td> </tr> </table>	negative reinforcement	Following a behavior, a stimulus is removed, which results in an increase in behavior	positive reinforcement	Following a behavior, a stimulus is presented, which results in an increase in behavior	Punishment	Following a behavior, a stimulus is presented or removed, which results in a decrease in behavior	extinction	Following a behavior, a stimulus that has previously caused an increase in behavior is blocked or removed
negative reinforcement	Following a behavior, a stimulus is removed, which results in an increase in behavior								
positive reinforcement	Following a behavior, a stimulus is presented, which results in an increase in behavior								
Punishment	Following a behavior, a stimulus is presented or removed, which results in a decrease in behavior								
extinction	Following a behavior, a stimulus that has previously caused an increase in behavior is blocked or removed								

<input type="checkbox"/>	3) Which of the following could be a motivative operation?
	<b>A. thirst</b>
	B. a teddy bear
	<b>C. tight shoes</b>
	<b>D. long line at lunch</b>

<input type="checkbox"/>	4) What should an SD signal the availability of?
	A. a reward
	B. a response

**C. a particular consequence**

D. you means business

5) Put the 6 components of a discrete trial in order

1	gain attention
2	Discriminative Stimulus
3	Prompting if necessary
4	behavior/ student response
5	consequence
6	inter trial interval

6) What are two major categories of antecedents?

**A. Discriminative Stimuli**

**B. Motivative Operations**

C. Positive Reinforcement

D. Punishment

7) What is MO and what does it mean?

**A. Motivative Operations – A stimulus, event, or process that changes the value of a consequence**

B. Maintenance Opportunity- an activity presented to check for maintenance of learned skills

C. Movement Operation- the system used to move from one instructional trial to the next

D. Motive Operation- stimuli that signal the availability of behavior consequences

8) Fill-in the blank: In ABA, good responding behaviors are \_\_\_\_\_ while problem behaviors are not.

**A. reinforced**

B. sometimes accepted

C. ignored

D. always verbally praised

9) In ABA what does ABC stand for?

- A. **Antecedent/ Behavior/ Consequence**
- B. Applied/ Behavior/ Contingencies
- C. Always/ Before/ Consequences
- D. Applied/ Beginning/ Cost

10) Mark all examples of a discriminative stimulus.

- A. **Stop light**
- B. **Teacher**
- C. **Instruction**
- D. **Flashcard**
- E. **A Parent**
- F. **Worms**

11) How can you tell if something is acting as reinforcement or punishment?

- A. If it is listed as reinforcement and punishment procedures in your districts LRBI manual.
- B. You will know from past experiences as an educator what are reinforcers and punishment.
- C. Following a behavior, a stimulus is presented or removed
- D. **The future rate of the behavior changes.**

12) Fill in the blank: Reinforcers and punishers are defined by there \_\_\_\_\_.

- A. Size
- B. Desire
- C. Durability
- D. **Effects**

13) Fill in the blank: In Discrete Trial Training (DTT) skills are taught in a

\_\_\_\_\_ manner until the student masters the step.

- A. Singular
- B. Small Group
- C. Naturalistic
- D. Repetitious**

14) Mark all that apply: Why is good rapport building important before beginning a session?

- A. It reinforces coming to the work area.**
- B. It allows the child to see you as the reinforcer**
- C. It isn't that important and takes up valuable instructional time.
- D. It helps in creating and maintaining social behavior.**

15) Mark all that apply: What are some systematic ways to select possible reinforcers?

- A. Ask the child's parents what they would like their child to play with.
- B. Conduct a stimulus preference assessment.**
- C. Search on a website for possible reinforcers for children with autism.
- D. Watch what the child does when left alone.**

16) Why is it important to make sure you have gained the child's attention before delivering an instruction? (choose one)

- A. It is not that important as long as they respond to your SD correctly.
- B. Since children with autism often have sensory issues requiring them to look at you desensitizes them to visual stimuli
- C. There should be no interference between an SD, a behavior, and a consequence.**
- B.**
- D. It is important because it trains the brain and connects synapses.

17) Mark actions to take before beginning an instructional session with a student.

- A. Clarify any questions**
- B. Mark data from the previous day.
- C. Put toys near the students chair so they are easy for them to grab

whenever they want them.

- D. Fill snack trays.**
- E. Get reinforcers ready.**
- F. Remove possible distractions, clutter.**

18) What is the first step in a discrete trial?

- A. Instruction
- B. Gain Attention**
- C. Prompt if necessary
- D. Discriminative Stimulus

19) Mark all that apply: How can you tell if you have the student's attention?

- A. The child is looking at you.**
- B. The child is not engaged in self stimulatory behavior.
- C. The child is looking at the materials.**
- D. The child is sitting down near you.

20) Mark the possible ways of gaining a student's attention.

- A. Orient yourself where the child is looking,
- B. Put your hands on the child's, wait for attention**
- C. Hold materials close to child's eyes then move back to your eyes,**
- D. Repeat the child's name until they turn and look,
- E. Point to child's eyes then to your own**
- F. Wait without saying anything until the child looks,**

21) Mark examples of ways to maintain good attention

- A. Keep good pacing,**
- B. Use the most powerful reinforcer exclusively,
- C. Give long breaks between instruction,
- D. Say the child's name each time you give an instruction,
- E. Use a variety of reinforcers,**
- F. Intermittently reinforce good eye contact,**

- 22) How long should you give the child to begin a response after delivering an SD?
- A. 3 Seconds
- B. 5 Seconds**
- C. 15 Seconds
- D. 5 minutes

- 23) Fill in the Blank: The SD should be delivered exactly as it says on the \_\_\_\_\_.
- A. Internet
- B. Program Sheet**
- C. Teacher resource guide
- D. CRT

- 24) Fill in the blanks: \_(1)\_ SD should come before a \_(2)\_ SD
- |   |           |
|---|-----------|
| 1 | verbal    |
| 2 | nonverbal |

- 25) Anything the child does or says after the materials are in place, or the verbal SD is delivered, is a \_\_\_\_\_.
- A. Response**
- B. Consequence
- C. Punishment
- D. Reinforcement

- 26) Mark each appropriate reason you would add a prompt into an instructional trial.
- A. You are introducing a new item,**
- B. The child has not had success with the item in the past,**
- C. If it is defined to do so on the program sheet,**
- D. The student responds incorrectly 2 times in a row,**
- E. The student is holding out his hands waiting to be prompted,

F. You want them to be able to pass off items even if they can't do it independent.

27) The prompt should occur:

After the	SD
Before the	Response

28) A prompt should come before you give an instruction or after the student responds incorrect.

A. True

**B. False**

29) Mark all that apply: How do you decide what prompt to use?

**A. Use the least amount of prompting possible**

B. Use the most intrusive prompting first then fade prompting quickly

**C. If a target has a designated prompt (follow that procedure, all staff need to be doing the same thing)**

30) Mark all that apply: How should you mark a response that you inadvertently prompted?

**A. As a Prompt, because a prompt is a prompt.**

B. As an Approximation, because you can approximate they would have gotten it independent.

C. As a Correct, because it wasn't the child's fault you inadvertently prompted.

31) Anything you do or say outside of the designated SD is a \_\_\_\_\_.

A. response

B. reinforcement

C. punishment

**D. prompt**

- 32) Anything you do or say outside of the designated SD is a \_\_\_\_\_.
- A. response
  - B. reinforcement
  - C. punishment
  - D. prompt**

- 33) Feedback should \_\_\_\_\_ to the difficulty of the task.
- A. equal in intensity**
  - B. be the same regardless

- 34) Which are examples of when to use Mass Prompting?
- A. If the child responds: incorrect, prompted, then incorrect again use mass prompting.**
  - B. If the student has a history of incorrect responding with the SD.**
  - C. If you are introducing a brand new skill to a student who has needed mass prompting to learn in the past**
  - D. If a child is reinforced by attention and they are exhibiting misbehavior

- 35) While working with a student, Joe, you hold up a picture but do not give a direction. Joe yells out the answer. What do you do?
- A. say try again, hold up the picture again and give the SD.**
  - B. give access to reinforcement.
  - C. end trial and move to a different target.

- 36) Mark all that apply: When is it inappropriate to prompt?
- A. child can perform task,**
  - B. child is holding out hands to be prompted,**
  - C. child missed last trial due to inattentiveness,**
  - D. if the child has a history of incorrect responding with the SD
  - E. if the child responds: incorrect, prompted, then incorrect again
  - F. it is always appropriate to prompt

37) When in a session would you discontinue asking a SD?

**A. After the student performed the skill independent**

B. After you have your 5 trials for data

C. After they give some sort of compliance

D. After they respond to your prompt

38) It is important that the time between an incorrect response and the next opportunity to respond is \_\_\_\_\_.

A. punishing

**B. brief (2-3 seconds)**

C. reinforcing

D. as long as the amount of time you give for them to respond (5-10 seconds)

39) To assure the child has really learned the skill we want to teach we must place \_\_\_\_\_ between independent responses.

A. students

B. nothing

**C. interference**

40) Name two ways to create interference during instruction.

A. Quick pace

**B. Time**

C. Effective Schedule of Reinforcement

**D. Other Behaviors**

41) Put in order of least to most intrusive type of prompt.

Least 1 | model prompt

2	gestural prompt
3	Touch prompt
4	Partial physical prompt
Most 5	Full Physical Prompt

- 42) Define Reinforcement
- A. A stimulus that precedes a behavior and increases or strengthens that behavior
  - B. A stimulus that precedes a behavior and decreases or weakens that behavior
  - C. A stimulus that follows a behavior and decreases or weakens that behavior
  - D. A stimulus that follows a behavior and increases or strengthens that behavior**

- 43) In behavioral terms define Extinction:
- A. when the last of a species dies out
  - B. teaching a replacement behavior for a behavior you want to decrease
  - C. withholding or blocking reinforcement**
  - D. differentially reinforce other behaviors

- 44) Mark all that apply: What are behaviors you want to increase during instruction?
- A. eye contact**
  - B. getting out of chair
  - C. giving a guess
  - D. correct responses**

- 45) Fill in the blank: Some items considered aversive to one person may be \_\_\_\_\_ to another person
- A. punishment
  - B. enjoyable
  - C. reinforcing**
  - D. extinction

- 46) What is a primary reinforcer?
- A. any reinforcer that is dependent on another reinforcer for its reinforcing properties
- B. any reinforcer that is not dependant on another reinforcer for its reinforcing properties**

- 47) What is a conditioned reinforcer?
- A. any reinforcer that has acquired its reinforcing properties through its association with other reinforcers**
- B. any reinforcer that is not dependant on another reinforcer for its reinforcing properties

- 48) Match the items below as Primary or Conditioned Reinforcement

Primary Reinforcement	food
Primary Reinforcement	hydration
Conditioned Reinforcement	praise
Conditioned Reinforcement	money

- 49) How does something become a reinforcer?
- A. it is paired with an established reinforcer**
- B. praise when you deliver a new reinforcer
- C. with hold it long enough and they will want it

- 50) Match the types of reinforcers with their example:

Tangible	superman toy
Edible	fruit snack
Social	secret handshake

51) Mark all that apply: Reinforcement success is primarily determined by...

- A. Immediacy**
- B. Size of reinforcer
- C. Cost of reinforcer
- D. Value of reinforcer**
- E. Schedule of reinforcement**
- F. Extinction
- G. Knowledge of instructor
- H. How difficult behavior is to perform**

52) It seems like Suzy will only work for candy. You want her to be reinforced by more than just candy. What do you do?

- A. Give her different types of candy.
- B. When giving an M&M for a correct response, pair it with your praise, a social game or a toy.**
- C. Overwhelm her with candy and she will become satiated and like toys instead.

53) Your voice inflection should sound different between when you deliver the \_\_\_\_\_ and when you deliver the \_\_\_\_\_.

- A. Reinforcement/ Instruction**
- B. Reinforcement/ Praise
- C. Toy/ Candy

54) What is behavioral bribery?

- A. Offering a child a reinforcer when the child is misbehaving in order to entice the child to behave properly**
- B. Giving a child candy or toys so that they will work
- C. Using a token or point system

55) Why is behavioral bribery wrong?

- A. It reinforces the bad behavior you are trying to eliminate**
- B. It is not wrong, it is effective in getting the child to return to work

C. It is a question of ethics

- 56) Mark all that apply: If a child is engaged in misbehavior and you don't want to use bribery to stop bad behavior, what should you do?
- A. end the activity and give the child a break
  - B. stop the bad behavior immediately by threatening to take away the next reinforcement
  - C. wait out the bad behavior**
  - D. next time an opportunity is available for the bad behavior remember to be prepared with reinforcement be for it occurs**

- 57) Which of the following are ways to have good between trial pacing?
- A. give them a break with a reinforcer for 30 seconds each trial
  - B. understand the directions**
  - C. Have materials prepared**
  - D. just keep moving even if you don't know the directions

- 58) What is meant by Intermixing trials?
- A. Intersperse trials between programs and response form.
  - B. Throw in mastered trials
  - C. Give a varied sequence of trials within the program
  - D. all of the above**

- 59) Why should you only allow access to a reinforcer for 5-15 seconds at a time during instruction?
- A. you should reinforce less often and then for a longer amount of time.
  - B. this allows the instructor just enough of a break to get a quick drink.
  - C. Too much time will slow down pacing and lessen the effectiveness of reinforcer.**
  - D. most reinforcers will be ineffective if delivered for only 5-15 seconds

- 60) Behavioral momentum is...

- A. asking the child to perform mastered skills to get them on a roll before asking more difficult skills**
- B. best for times when the child is noncompliant
- C. a tool to determine the function of behavior
- D. blocking reinforcement

- 61) (Mark all that apply.) Differential Reinforcement is...
- A. used in shaping behavior**
  - B. an antecedent based intervention
  - C. changing the intensity of reinforcement based on the difficulty the behavior is to perform**
  - D. effective in teaching a child to attend to instruction**

- 62) To determine a proper break schedule for your student you must...
- A. Know how many trials/minutes a child can go and still show good attending/behavior**
  - B. give a break every 30 minutes for all students
  - C. ask the child's mom how long they are able to sit at story time

- 63) You are trying to work with Tommy but he keeps blankly staring over your right shoulder. Which of the following could you do to increase instructional pacing with Tommy?
- A. Ignore Tommy's daydreaming until he returns to task.
  - B. Use behavioral momentum.**
  - C. Give Tommy a break so that he can take a nap and be better rested.
  - D. Have Tommy make a choice about what he wants to work for or what skill he wants to work on.**
  - E. Block of visually screen what Tommy was staring at.**

- 64) You are trying to have good instructional pacing with Lacey but every time you go to give an instruction she begins biting her nails. Which of the following could you try to increase your instructional pacing in this situation? (choose 3)
- A. Take hands, place on table, wait for attention**

- B. Block self stimulatory behavior if possible**
- C. Physically prompt child through trial**
- D. Keep presenting trials without giving them attention
- E. Give the child a break immediately to allow them to cut their nails

- 65) Lindsey is refusing to work. You give her an instruction and she says, "No way, I'm not working for you!" What can you do to improve your instructional pacing in this situation? (choose 2)
- A. Keep presenting trials without giving them attention**
  - B. Wait until you gain the child's attention before you begin an instruction even if she refused to give it to you.
  - C. Child must complete trial correctly with good behavior in order to move on**
  - D. Tell them they shouldn't talk to you that way and have a discussion on respecting teachers

- 66) Lindsey is supposed to be counting objects. You place the objects in front of her and say, "Count." She throws it across the room and says, "Ha ha, now you have to get it." She is looking for attention. How do you improve instructional pacing in this situation? (choose 2)
- A. Give almost no acknowledgement of poor attending.**
  - B. If physical redirection is required, continue on with trials as if nothing happened**
  - C. Pick up the item and put it back on the table immediately even though she will throw it again
  - D. Make the student pick up the item and tell them that we don't throw stuff at school

- 67) Before conducting a behavioral assessment you should \_\_\_\_\_
- A. evaluate your own instruction**
  - B. change the students routine
  - C. change the staff who work with the student
  - D. decrease the amount of work you require the student to do.

- 68) Behavior is a \_\_\_\_\_ of its consequence

- A. **Function**
- B. Faculty
- C. Image
- D. Intervention

69) Put the 3 steps to decreasing problem behavior in order

1. Determine the “function” or cause of the behavior
2. Place the problem behavior on “extinction”
3. Teach a replacement behavior

70) Why is it important to determine the function of a behavior?

- A. When you understand the function of a behavior you know what the steps are in performing the behavior and you can chain the behavior.
- B. Determining the likely function of a problem behavior makes it possible to design an intervention that will have a high probability of success.**

71) What can happen if you design an intervention without understanding the function of the problem behavior?

- A. it will never work for you unless you know the function
- B. You may give the child a phobia that they will have later in life
- C. you may inadvertently increase problem behavior**

72) To determine function of a behavior it is necessary to look at the entire \_\_\_\_\_

- A. Behavior
- B. Consequence
- C. Behavior chain**
- D. school year

73) Which of the following could be a setting event?

- A. **sleep patterns**
- B. an instruction
- C. **a long hot bus ride**
- D. falling out of seat

- 74) What happened immediately before behavior
- time of day
  - physical setting
  - people involved
  - activity or demand
- is \_\_\_\_\_
- A. a setting event
  - B. a behavior
  - C. a consequence
  - D. **an antecedent**

- 75) The major 2 functions of behavior are \_\_\_\_\_
- A. eat
  - B. **escape**
  - C. **gain**
  - D. pleasure

- 76) The systematic interruption of the response-reinforcer contingency by withholding the reinforcer that maintains the behavior is \_\_\_\_\_
- A. Reinforcement
  - B. Punishment
  - C. **Extinction**
  - D. Function

- 77) Extinction must be implemented with \_\_\_\_\_ in order to be effective
- A. **absolute consistency**
  - B. good faith effort
  - C. intermittently

- 78) Inconsistent application of extinction functionally becomes intermittent reinforcement and may \_\_\_\_\_ behavior you want to eliminate
- A. **Strengthen**  
 B. Eliminate  
 C. Weaken

- 79) It is important that extinction be combined with other procedures so that an individual learns an alternative method of accessing reinforcement. How is this accomplished?
- A. by getting rid of the problem behavior  
 B. through extinction and punishment  
 C. **By teaching a replacement behavior**

- 80) It is important the replacement behavior require \_\_\_\_\_ effort to perform than problem behavior
- A. equal  
 B. **less**  
 C. more

- 81) Match the following.
- |                        |   |
|------------------------|---|
| Variable Ratio (VR)    | average number of responses that must pass prior to reinforcement |
| Fixed Ratio (FR)       | exact number of responses that must pass prior to reinforcement   |
| Variable Interval (VI) | average amount of time that must pass prior to reinforcement      |
| Fixed Interval (FI)    | exact amount of time that must pass prior to reinforcement        |

## Appendix C

## Survey

- |                          |                       |
|--------------------------|-----------------------|
| <input type="checkbox"/> | 1) I have completed   |
|                          | A. High School        |
|                          | B. H.S + Some College |
|                          | C. Associates degree  |
|                          | D. Bachelors          |

- |                          |                                       |
|--------------------------|---------------------------------------|
| <input type="checkbox"/> | 2) I have worked in special education |
|                          | A. less than 1 year                   |
|                          | B. 1-2 years                          |
|                          | C. 3-5 years                          |
|                          | D. 5-10 years                         |

- |                          |   |
|--------------------------|---|
| <input type="checkbox"/> | 3) I have worked most recently in the following area of Special education |
|                          | A. Resource   |
|                          | B. Elem Severe  |
|                          | C. Secondary Severe   |
|                          | D. ECSE   |

- |                          |                                       |
|--------------------------|---------------------------------------|
| <input type="checkbox"/> | 4) My previous experience with ABA is |
|                          | A. none                               |
|                          | B. limited                            |
|                          | C. Basic                              |
|                          | D. extensive                          |

- |                          |                                       |
|--------------------------|---------------------------------------|
| <input type="checkbox"/> | 5) Have you had previous ABA Training |
|                          | A. Yes                                |
|                          | B. No                                 |

6) If yes, when, where and by whom?

Mark the following according to your experience

7) Module objectives were clearly stated.

A. Strongly Agree

B. Agree

C. Undecided

D. Disagree

E. Strongly Disagree

8) The module material has been valuable to me.

A. Strongly Agree

B. Agree

C. Undecided

D. Disagree

E. Strongly Disagree

9) The modules have increased my knowledge and competence in the subject

A. Strongly Agree

B. Agree

C. Undecided

D. Disagree

E. Strongly Disagree

10) The training has inspired me to think more about the content of the course than what was required.

A. Strongly Agree

B. Agree

C. Undecided

D. Disagree

E. Strongly Disagree

11) I was able to access the module without difficulty

A. Strongly Agree

- B. Agree
- C. Undecided
- D. Disagree
- E. Strongly Disagree

12) I was able to access the quiz without difficulty

- A. Strongly Agree
- B. Agree
- C. Undecided
- D. Disagree
- E. Strongly Disagree

13) The module was well organized.

- A. Strongly Agree
- B. Agree
- C. Undecided
- D. Disagree
- E. Strongly Disagree

Rate your satisfaction with the following elements.

14) Video examples

- A. Excellent
- B. Above Average
- C. Average
- D. Below Average
- E. Extremely Poor

15) Audio Commentary

- A. Excellent
- B. Above Average
- C. Average
- D. Below Average
- E. Extremely Poor

16) Online Quiz

- A. Excellent
- B. Above Average

	C. Average
	D. Below Average
	E. Extremely Poor
<input type="checkbox"/> 17)	PowerPoint slideshow
	A. Excellent
	B. Above Average
	C. Average
	D. Below Average
	E. Extremely Poor

<input type="checkbox"/> 18)	What did you find valuable with the training?
	_____