

Running head: SELF-INSTRUCTIONAL PACKAGE TO TEACH PARENTS DTT

Evaluation of a Self-Instructional Package for Teaching Parents to Conduct Discrete-  
Trials Teaching with Children with Autism

by

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## Abstract

Early Intensive Behavioral Intervention (EIBI) is a treatment for children with Autism spectrum disorder (ASD) that uses the principles of applied behavior analysis. Discrete-trials teaching (DTT) is commonly used in EIBI as a method for teaching children with ASD. DTT involves a teacher presenting an antecedent to the child, waiting for the child's response, and then providing a consequence for that response (either a reinforcer for a correct response or non-interaction for an incorrect response). In this study I assessed the effectiveness of the Fazio and Martin DTT self-instructional manual plus video (2011) with mothers of children with ASD as the participants. I used a multiple-baseline design across a pair of participants, and replicated across a second pair. During the baseline assessment, a participant was asked to teach three tasks (pointing-to-named pictures, identity matching and imitation) to a confederate role-playing a child with ASD. The participant was given one-page summaries for each teaching task and no additional information. Once baseline data was collected, the participant had the opportunity to study the self-instructional package, after which she conducted a post-treatment DTT session with the confederate. If she did not achieve mastery (set at 80%) in post-treatment assessment she was provided with a feedback session on her DTT performance, and then conducted an additional DTT session with the confederate. Three of the participants were available to conduct a generalization session with her child. The treatment package was very effective for training two of the mothers with children with ASD to implement DTT, and somewhat effective for the other two mothers who required a feedback session.

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Teaching with Children with Autism

**Introduction**

Autism spectrum disorder (ASD) is categorized in the *Diagnostic and Statistical Manual of Mental Disorders, 5<sup>th</sup> edition* (DMS-5, American Psychiatric Association, 2013) as a neurodevelopmental condition marked by a combination of impaired social behavior, impaired communication skills, and repetitive self-stimulatory behaviors. These symptoms fall on a continuum, where some individuals show very mild symptoms and others show more severe symptoms. A diagnosis is given to an individual in childhood, typically before age three. According to the literature there has been an increase in prevalence rates of ASD across Canada over the past two decades (Fombonne, Zakarian, Bennett, Meng, & McLean-Heywood, 2006; Lazoff, Zhong, Piperni, & Fombonne, 2010; Oulette-Kuntz et al, 2014) and the Center for Disease Control and Prevention (2015) estimated prevalence rates as high as 1 in 68 children. Because of the increase in children being diagnosed with ASD it is necessary that we establish effective forms of treatment.

One of the most accredited forms of treatment for ASD is known as Early Intensive Behavioral Intervention (EIBI), which is an intensive one-to-one treatment lasting approximately 40 hours per week for two or more years (Fazio & Martin, 2011). Several studies have documented the effectiveness of EIBI and it is the most well established evidence-based treatment for ASD (Eldvik et al., 2009; Makrygianni & Reed, 2010; Lovaas, 1987; Lovaas, Smith, & McEachin, 1989; Reichow, 2012; Sallows & Graupner, 2005). This type of intervention is applied shortly after a child is diagnosed with ASD and it has resulted in improved cognitive, social, and communication skills and reducing problem behaviors. EIBI

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uses the core principles of Applied Behavior Analysis (ABA) in order to teach skills such as attending, receptive and expressive language, requesting, social and cooperative play, conversation skills, and appropriate classroom behavior (Sallows & Graupner, 2005; Smith, 2001). A common teaching method in ABA and also one of the key components of EIBI is Discrete-Trials Teaching (DTT). DTT involves a teacher presenting an instruction to a child, waiting for the child's response and then providing a consequence for that response (either a reinforcer for a correct response or non-interaction for an incorrect response). According to Smith (2001), each discrete trial has five parts, a cue, a prompt, a response, a consequence, and an inter-trial interval. These steps occur in rapid succession over many trials during a teaching session and can be individualized to each child. Smith (2001) mentions three ways DTT can increase a child's learning and motivation to learn. First, because the trials are short the child has many learning opportunities in a session. Second, teachers work one on one with a child and they have the control to tailor instructions to meet the child's needs. Lastly, because of the strict format of DTT, it is very clear to the child what the teaching situation is.

Since DTT is one of the main components of EIBI it is extremely important that we are effectively training teachers (parents, educators, tutors etc.) to implement it. There have been several studies on a variety of strategies for teaching staff and parents to implement DTT with children with ASD (Arco, 1997; Crockett, Flemming, Doepke, & Stevens, 2007; Gilligan, Luiselli, & Pace, 2007; Koegel, Glahn, & Nieminen, 1978; Lafasakis & Sturmey, 2007; Leblanc, Ricciardi, & Luiselli, 2005; McBride & Schwartz, 2003; Ryan & Hemmes, 2005; Sarakoff & Sturmey, 2004). Although these studies have been successful in teaching participants how to implement DTT, they lacked one or more of important elements, such as generalization,

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procedural integrity and social validity. Also many of the studies required lengthy training times and training usually had to be conducted by a professional, which can be very costly.

Thomson, Martin, Arnal, Fazzio, and Yu (2009) did a meta-analysis on the training procedures available in the literature for teaching participants how to apply DTT. They concluded that it was difficult to draw any conclusion about the effectiveness of the various training methods and that there needed to be a development of a research-based procedure to efficiently and effectively train instructors and parents to conduct DTT with children with ASD. Fazzio and Martin (2006) created the *Discrete-Trials Teaching With Children With Autism: A Self-Instructional Manual* to address this concern. The manual was first created to teach ABA autism tutors to conduct DTT at the St. Amant ABA Preschool program for Children with Autism in Manitoba. The manual provided a brief description of autism, and introduced the reader to basic behavioral principles such as positive and negative reinforcement. It then described the process of DTT, some typical teaching tasks, prompting and fading procedures, error correction, and data recording. The manual is currently in its 4<sup>th</sup> edition, and has been updated to include additional information, additional study questions and video demonstrations. Wightman et al. (2012) demonstrated that the current revision of the manual combined with video demonstrations was effective for teaching newly hired tutors to accurately apply DTT to teach children with ASD. I assessed the effectiveness of the Fazzio and Martin DTT self-instructional manual plus video (2011) for teaching parents of children with ASD to apply DTT to teach their children with ASD. Before describing the details of the research I will review the research on the various editions of the Fazzio and Martin self-instructional manual for teaching DTT.

### **Research on the Fazzio and Martin DTT Self-Instructional Manual**

#### **Teaching university students to implement DTT.**

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*Version I.* Fazio and Martin created the first edition of the manual in 2006. Arnal et al. (2007) did the first study on the manual and evaluated its effectiveness for teaching university students to implement DTT. Their study was comprised of two experiments. Both experiments involved the participants teaching a confederate, role-playing a child with ASD, to perform three tasks (pointing-to-named pictures, identity matching, and motor imitation). In Experiment 1, a participant first conducted a Baseline DTT session to teach the three tasks after reading a one-page summary for teaching each task (see example in Appendix A and the Data Sheet in Appendix B). His/her performance was scored on the Discrete-Trials Teaching Evaluation Form (DTTEF, see Appendix C), which has been demonstrated to have both good reliability and validity (Babel, Martin, Fazio, Arnal & Thomson 2008). He/she was then given the opportunity to study and master the manual. Mastering the manual meant that the participant obtained 100% accuracy when tested on randomly selected study questions in the manual. It took an average of 2.2 hours to master the manual and the average DTT performance of the four participants went from 44% in Baseline to 67% after studying the manual. Although there was an improvement none of the participants reached the mastery criterion (set at 90% in this experiment). In Experiment 2 the researchers added an additional component and had participants study the manual plus watch a video where they had to score a teacher conducting a DTT session. There were three participants in Experiment 2 and they followed the same procedure as described for Experiment 1 except for the added scoring-of-the video component. Participants were also provided with feedback on how they had scored the teacher in the video. It took participants an average of 2 hours and 49 minutes to master the manual and an additional 55 minutes for the video scoring and feedback session. The average Baseline DTT performance for the participants was 36%. DTT performance improved, on average, to 82% after studying the manual plus

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watching and scoring the video. Although there was a greater improvement in DTT accuracy, none of the participants were able to reach the 90% mastery criterion.

Fazzio, Martin, Arnal and Yu (2009) replicated the previous study using the same 21-page version of the manual with five university students. The study followed the same procedure as described in Experiment 1 of the Arnal et al. (2007) study, except if a participant did not achieve mastery (set at 90% in this study) after studying the manual, he/she was provided with a feedback and demonstration session from one of the researchers. It took an average of 2.6 hours to master the manual and mean DTT performance increased from 34% at Baseline to 61% after studying the manual alone. Of the five participants four of them needed the feedback and demonstration session. This improved the participants' average DTT accuracy to 92%. The study also included a Generalization phase for participants who achieved the mastery criterion. In this phase a participant conducted a DTT session with a child with ASD. Average DTT accuracy in the Generalization phase was 91%, demonstrating that the participants' were able to generalize the DTT skills they learned to the target population. Although there were huge gains made by all the participants, most of them needed at least one feedback/demonstration session, which defeated the purpose of the manual being "self-instructional".

***Version II.*** Based on feedback from the participants in the Fazzio et al. (2009) study, Fazzio and Martin updated the self-instructional manual to include twice as many study questions and added a practice component that prompted the reader to engage in imaginary role-play at the end of each section of the manual. Thiessen, Fazzio, Arnal, Martin and Yu (2009) did the first study on the updated 37-page version of the manual using a multiple-baseline design with four university students. The study followed a similar procedure as described for the previous studies on the manual. In Baseline a participant taught the same three tasks to a

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confederate role-playing a child with ASD. He/she then had the opportunity to study the manual, answer the study questions and engage in the self-practice exercises. If a participant reached 80% mastery in the post-training assessment he/she was able to participate in a Generalization phase with a child with ASD. It took the participants an average of 4 hours and 34 minutes to study the manual. On average their DTT performance improved from 52% in Baseline to 88% in Post-training, and was maintained at 77% in the Generalization phase. The results suggest that the revised edition of the manual was more effective in teaching participants to apply DTT.

Salem et al. (2009), following a similar procedure to that of Thiessen et al. (2009), and examined the effects of the 37-page edition of the manual with an added video demonstration component. Their participants were four university students and they averaged 4 hours and 47 minutes to master the manual and watch the video. DTT accuracy improved, on average, from 45.5% in Baseline to 78% at Post-training. Two of the four participants reached the mastery criterion (set at 85% in this study) at the Post-training session and moved on to a Generalization session with a child with ASD. Although two of the participants met the mastery criterion, the other two did not, even with the added video component. This study provided inconclusive results on how effective the 2<sup>nd</sup> edition of the manual was at teaching individuals to implement DTT.

**Version III.** Fazzio and Martin (2009) updated the self-instructional manual once again to include new topics (such as recording data), six more chapters and 42 more study questions. The third edition of the manual had 62 pages, and was more descriptive and in depth than the previous versions.

Boris et al. (2011) did a study on the revised version of the manual using three university students as participants. The study followed a similar procedure to studies done on the previous

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versions of the manual. First, a participant had to teach the same three tasks in Baseline to a confederate role-playing a child with ASD. A participant was then required to study the updated version of the manual and his/her DTT accuracy with the confederate was once again assessed. If a participant reached the mastery criterion (set at 80% in this study) he/she was able to move on to the Generalization phase and attempt to conduct a DTT session with a child with ASD. If a participant did not reach the mastery criterion after studying the manual, then he/she would receive a feedback and demonstration session from the researcher. Only one participant needed the feedback and demonstration session. It took on average 6 hours and 41 minutes to master the manual and DTT accuracy improved from 45% in Baseline to 82% at the Post-training assessment. This study demonstrated that the updated version of the manual resulted in larger increases in DTT accuracy than previous versions. However, one participant still needed the feedback session, making the manual not completely “self-instructional”.

Zaragoza Scherman et al. (2015) also did a study on the 62-page edition of the manual. In their study university students studied the updated edition of the manual through a computer-aided personalized system of instruction (CAPSI). The advantage of CAPSI is that individuals can progress through units of material sequentially, are required to demonstrate mastery before moving on, go at their own pace, and receive immediate feedback on their performance (Martin & Pear, 2015). Additional advantages are that CAPSI is cost effective and very “self-instructional”. The participants were given 55 days to study and master the manual on their own time and in a setting of their choice. Both Baseline and Post-treatment assessments took place at the University of Manitoba. The average DTT accuracy across participants was 55% in Baseline and increased to 85% at the Post-training assessment. This study demonstrated the effectiveness of CAPSI as a way to teach individuals to implement DTT. However, there were lengthy study

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times required by the participants. It took them an average of 12 hours and 48 minutes to complete the online training, which is quite time consuming.

**Teaching ABA autism tutors to implement DTT.** As mentioned previously, the Fazzio and Martin self-instructional manual was originally created to teach ABA autism tutors, and there have been two studies to date that provide evidence of its effectiveness.

*Version II.* Thomson et al. (2012) did a study on the 2<sup>nd</sup> edition of the manual, this time evaluating how effective the manual was at teaching ABA autism tutors how to implement DTT. This study also included a video demonstration component, much like the one used in Salem et al. (2009). The study examined how effective the manual and video demonstration was at teaching four pairs of newly hired tutors from the St. Amant ABA Preschool Program for Children with Autism to implement DTT in a modified multiple-baseline design. In Baseline a participant attempted to teach the same three tasks (as in previous studies) to a confederate role-playing a child with ASD. He/she was then provided with the manual to study and master. If the participant did not achieve 80% DTT accuracy after studying the manual alone, then he/she was required to watch a 17-minute video demonstration of a professional conducting DTT with a confederate role-playing a child with ASD. It took an average of 4.6 hours to study the manual and DTT accuracy improved 31.7%, on average, across the eight participants. Three of the eight participants achieved mastery (set at 80% in this study) after studying just the manual. The remaining 5 participants watched the video and DTT accuracy improved, on average, another 14.3% with a mean accuracy of 83.7% across participants. These results suggest that the manual combined with the video demonstration is effective for teaching participants to conduct DTT.

*Version IV.* Fazzio and Martin updated the manual once again in 2011. The manual now consists of 65 pages, 12 chapters and 111 study questions. Because of the improved results in

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previous studies on the manual that incorporated a video demonstration component (Thomson et al., 2011; Salem et al., 2009) they decided to add a video component to the manual. The self-instructional package now includes a video demonstration of one of the authors conducting a DTT session with a confederate. While studying the manual the reader is prompted, after Chapters 8, 10 and 11, to stop and watch the video demonstration and then engage in self-practice.

Wightman et al. (2012) examined the current version of the manual with 13 newly-hired tutors from the St. Amant ABA Preschool Program for Children with Autism. In Baseline a tutor was required to teach the same three tasks to a confederate role-playing a child with ASD. He/she was then required to study the manual, watch the video demonstrations, engage in self-practice and pass a test on the manual. Once the participant had passed the test with 100% accuracy, his/her DTT skills were assessed. If a participant achieved the mastery criterion on the post-training assessment, he/she then participated in a generalization session with a child with ASD. On average it took the participants 3 hours and 56 minutes to master the manual and DTT accuracy improved from 46.2% in Baseline to 85.5% in the Post-training assessment. Their study provides good support that the 4<sup>th</sup> edition of the manual with the added video component is effective in teaching newly-hired tutors to conduct DTT. The study not only demonstrated the manual-video package to be self-instructional, but also required a reasonable period of time to master it (an average of 3 hours and 56 minutes).

**Teaching parent's to implement DTT.** The Thompson et al. (2009) meta-analysis findings indicated that there is little to no research on DTT parent training programs for parents with children with ASD. To date there has been one study, which evaluated the effectiveness of the Fazio and Martin self-instructional manual with parents with children with ASD.

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*Version II.* Young, Boris, Thomson, Martin & Yu (2012) did a two part study on the 2<sup>nd</sup> edition of the manual with mothers of children with autism from the waitlist for St. Amant ABA Preschool Program for Children with Autism. In Study 1 there were five participants, in Baseline a participant was required to conduct a DTT session teaching the same three tasks to a confederate. Next she was required to study the self-instructional manual. Much like Thomson et al. (2012), if a participant did not reach mastery criterion after studying the manual (set at 80% in this study), she was required to watch the video demonstration of a professional conducting a DTT session with a confederate. If a participant reached mastery after studying the manual or studying the manual plus the video, then she conducted a Generalization DTT session with her child with ASD. The participants also participated in a Follow-up session conducted one month after the Generalization session. This was to demonstrate that the participants retained their DTT skills. One participant achieved mastery after studying the manual alone, and the other four were required to watch the video demonstration. On average the participants improved from 46.2% in Baseline to 64.5% during the Post-training assessment. Because of the small gains made by the participants in Study 1 the researchers conducted a second experiment in which they added a feedback/role-playing component. In Study 2 the effectiveness of a treatment package to teach mothers how to conduct DTT was again evaluated with five new participants. In this study the treatment package consisted of the self-instructional manual, plus a role-play and feedback session, and the video component if necessary. The procedure was very similar to the one describe in the first study. The main difference was that while studying the manual a participant would stop at the end of each section and instead of engaging in the self-practice exercise, the researcher would role-play with the participant and provide feedback on their responses. A participant was only required to watch the video demonstration if she did not reach the mastery

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criteria (same as in Study 1). Each participant who met the mastery criterion also conducted Generalization and Follow-up sessions with her child with ASD. The mean Baseline DTT accuracy was 61.1%. After studying the manual and role-playing with the researcher, DTT accuracy improved to a mean of 86.6% for three of the five mothers. Two of the mothers did not achieve mastery criterion from studying the manual plus the feedback session, so they were required to watch the video demonstration. After watching the video, DTT accuracy improved to an average of 88.5%. All mothers participated in a Generalization session, which involved implementing DTT with their child with ASD, and on average their DTT accuracy was 81.9%. Four of the five mothers participated in a 1-month Follow-up session and mean DTT accuracy was 84.1% across the participants. Although all the participants in Study 2 reached mastery and were able to generalize and maintain their DTT skills, having the researcher engage in self-practice and provide feedback defeated the purpose of the manual being “self-instructional”.

In addition to the Young et al. (2012) study there have only been three other studies that have assessed strategies for teaching parents of children with autism to conduct DTT (Koegel, Glahn, & Nieminen, 1978; Crockett, Fleming, Doepke, & Stevens 2007; Lafasakis, & Sturmey, 2007). However, all three studies required the presence of a professional, making their methods costly and impractical.

### **Statement of the Problem**

The self-instructional package consisting of the 4<sup>th</sup> version of the Fazzio and Martin (2011) manual plus video has been demonstrated to be effective for training tutors to implement DTT (Wightman et al., 2012). The purpose of the current study was to evaluate the updated 65-page version of the Fazzio and Martin (2011) DTT self-instructional package for teaching parents of children with ASD to apply DTT with children with ASD.

## **Method**

### **Participants and Setting**

Participants were four mothers of children with ASD recruited from families on the waitlist for and enrolled in the St. Amant Early Learning Program for Children with Autism. Letters were mailed out from the Privacy Officer at St. Amant to families who were involved in the program. The letters briefly described the study, what its benefits were, and emphasized that participation was voluntary and would in no way effect the services received from St. Amant. The letters also explained that if a parent completed participation she would be provided with a \$50 honorarium. If a parent wished to participate she would mail the signed consent form back to me. If she did not wish to participate, she would just simply decline to respond. All training sessions took place in the participants' homes.

### **Materials**

In Baseline a participant received three, one-page summaries of the steps to teach each of three tasks: (a) pointing-to-named pictures, (b) identity matching, and (c) motor imitation (see example in Appendix A). She also received a data sheet to keep track of the responses of the confederate role-playing a child with autism (see example in Appendix B). A participant had access to picture flash cards to teach the tasks, a pen, and edibles for reinforcement. All Baseline sessions were videotaped and a participant's DTT accuracy was scored on the Discrete-Trials Teaching Evaluation Form (DTTEF; Fazzio, Arnal, & Martin, 2010, see Appendix C).

During the training phase, a participant received the 65-page self-instructional manual (Fazzio & Martin, 2011) and a sheet to track her study time in minutes. A participant was required to complete two mastery tests on the manual. The first was based on Part I of the manual (chapters 1-6) and the second was based on Part II of the manual (chapters 7-12). The

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tests were comprised of 10 randomly selected study questions from the manual. Questions for the tests were selected by placing all numbers representing the potential questions into a hat and then picking out 10. This was done for each participant, first for the Part I mastery test, and then again (with the questions from Part II) for the Part II mastery test. Once a participant passed the Part I mastery Test, she was provided with the four video demonstrations on a USB stick to be watched when prompted in the manual. The four parts of the video are as follows: Part A demonstrates how to set up the teaching session; Part B demonstrates how to manage the antecedents and consequences for a correct response on a DTT trial; Part C demonstrates most-to-least prompt fading procedures; and Part D demonstrates how to manage the antecedents and consequences for an incorrect response on a DTT trial.

During the Post-training assessments a participant were given access to pages 73-74 of the manual, which outlines the components of the DTTEF (see Appendix D). The same data sheets used to record the confederate's responses for each task that were used in Baseline were once again available (see example in Appendix B). A participant also had access to the same picture flash cards to teach the tasks, edibles for reinforcement, and a pen. Post-training sessions were videotaped and a participant's DTT performance was scored on the DTTEF.

In the Generalization phase, a participant received the same outline of the DTTEF components as provided in the Post-training assessment. She also had access to a pen, edibles for reinforcement and whatever stimuli that were needed in order to teach the task.

### **Procedure**

I used a multiple-baseline design across a pair of participants, and replicated with a second pair, to evaluate the effectiveness of the current edition of the Fazzio and Martin DTT self-instructional package with parents of children with ASD. In a regular multiple-baseline

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design with four participants baseline sessions would occur concurrently across all four participants and treatment would be introduced sequentially to each of the four participants (Martin & Pear, 2015). In my study the baseline phase occurred concurrently across a pair of participants and treatment was introduced sequentially to each one of the pair. This was replicated with a second pair. Except in the second pair, due to participant cancellation and scheduling complications, participant 4 started receiving treatment shortly before participant 3 had her post-treatment session. Therefore, the design I used might be referred to as a modified multiple-baseline design across a pair of participants, and replicated with a second pair. The University of Manitoba Psychology/Sociology Research Ethics Board and the St. Amant Research Review Committee approved the procedure of this study.

**Phase 1: Baseline.** Sessions took place in the participants' homes. During the Baseline phase a participant was provided with a brief introduction to the study. Next, she was asked to read three, one-page summaries of procedural steps to teach the tasks to the confederate role-playing the child with autism. The three tasks were: a) pointing-to-named pictures; b) identity matching; and c) motor imitation (see example in Appendix A). The tasks were selected from the curriculum for the St. Amant Early Learning Program for Children with Autism. Once a participant indicated that she had finished reading the provided materials, she attempted to teach 12 trials of the first task to the confederate. The confederate, an appropriately trained university student, followed a predetermined script that indicated how to respond to each instruction given by the participant, which prompting level was required in order to respond, and whether or not he/she should be attending to the instructor. Once a parent completed teaching 12 trials of the first task to the confederate, this process was carried out in the same way for the second task, and then for the third task. The order of the tasks were randomized for each participant and across

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sessions. This was done by putting the three tasks in a hat and randomly picking one out prior to each session. A participant's DTT accuracy was scored on the DTTEF.

**Phase 2: Training.** Once a participant completed her Baseline of the three tasks, the self-instructional manual was provided to the participant and she was asked to study it and record the amount of time spent studying. A participant started by studying Part I (Chapters 1-6). Part I provides the reader with an introduction to autism, and the basic learning principles (e.g., positive reinforcement, common teaching tasks, antecedents for responses, and fading prompts). The manual has two types of study questions that the participant was required to respond to. The first type prompts the participant to learn the background information about ABA. The second type, which are bold-faced in the manual, are there to assist a reader to learn the material that is essential for correctly implementing DTT. While studying the manual a participant would be prompted in the manual to learn the bold-faced questions as they were encountered, because she would be tested on them upon completion of Part I. At the end of each chapter a participant was prompted in the manual to go back and test herself on the bold-faced questions.

When a participant indicated that she was finished studying Part I, she would contact the researcher and a session was set up where she was given a test of 10 randomly selected bold-faced questions (there are 40 in total from Chapters 1-6). The test was graded upon completion and a participant was required to score 100% in order to move on. If a score of 100% was not obtained, the participant was required to go back and restudy the material and re-answer the incorrect questions.

Upon completion and mastery of Part I, a participant was provided with the video portion of the self-instructional package at which point she was required to study and master Part II of the manual (Chapters 7-12). Participants were required to continue to track their study time. Part

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II covers the specific steps for teaching DTT (e.g., taking data, managing consequences and antecedents, and error correction), and reviews some strategies for decreasing challenging behavior during a training session. A participant was once again prompted in the manual, at the end of each chapter, to be able to answer the bold-faced questions with 100% accuracy before moving on.

Part II of the manual includes four video demonstrations. A participant was prompted in the manual upon completion of certain chapters, to stop, watch the video demonstration, and engage in self-practice exercises for the material viewed on the video. For example, after mastering the study questions for Chapter 8, a participant would be prompted to watch Part A of the video demonstrations. In this video a trained professional demonstrated the six components to prepare a DTT teaching session. After watching the video the participant was prompted in the manual to engage in self-practice on the material that she learned. This same procedure was repeated again after the participant mastered Chapter 10 of the manual. This time she was prompted in the manual to watch Part B of the video on managing antecedents and consequences for correct responses, and then Part C of the video, which was a demonstration of most-to-least prompt fading. After watching the videos, the manual prompted the participant to complete a role-playing exercise, which involved the components of the DTTEF, and to score her performance on the DTTEF. A participant was prompted in the manual to continue this strategy until she had mastered the components. After a participant had mastered Chapter 11 of the manual she was once again prompted to watch a video demonstration. Part D of the video demonstrated managing antecedents and consequences for incorrect responses. The manual prompted a participant to stop and role-play a DTT session of teaching a pointing-to-named pictures task, practice the components of the DTTEF and score her performance. After she had

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mastered role-playing the pointing-to-named pictures task a participant was prompted to do the same thing for teaching imitation. Once a participant had mastered role-playing those two tasks she would continue on to Chapter 12 in the manual.

Once a participant had finished studying and mastering the study questions in Chapter 12 she contacted the researcher to set up a session where she was tested on Part II of the manual. Ten of the bold-faced questions (there are 35 in total) were randomly selected from Chapters 7-12. A participant was required to achieve 100% accuracy on the test before moving on to the next phase of the study. If a participant got any questions incorrect, she was asked to re-study the chapters and retake those questions.

**Phase 3: Post-training assessment.** After a participant mastered Part II of the manual, her DTT accuracy was evaluated once again with the confederate role-playing a child with autism. A participant attempted to teach the confederate the same three tasks that she attempted to teach in Baseline (pointing-to-named pictures, identity matching, and motor imitation). A participant was provided with data sheets to score the confederate's responses, a pen, edibles for reinforcement, picture flash cards, and a summary of the 20 components of the DTTEF. A participant's DTT performance was scored once again on the DTTEF.

***Post-training assessment plus feedback session.*** If a participant did not master all three teaching tasks after studying the self-instructional package they received a brief (approximately 15 minutes) feedback session on their DTT performance. The feedback session involved myself instructing the participant on things they did well and things they needed to improve on. Together we would practice a few trials of each task before moving onto the second post-training assessment. The second post-training assessment followed the exact same procedure as described above. Upon completion of either the post-training assessment or the post-training assessment

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plus feedback assessment a participant was given the \$50 honorarium and thanked for her participation.

**Phase 4: Generalization.** If a participant achieved 80% DTT accuracy in the Post-training assessment, then she was asked to implement her DTT skills in a Generalization session with her child with autism. I attempted to conduct a Generalization assessment with a participant within one week of her Post-training assessment. However, because of participant availability, this was not always possible. During a generalization session a participant would teach the same three tasks that were taught in Baseline and the Post-training assessment and the participant's DTT performance was scored on the DTTEF. If a child was showing signs of unwillingness to participate the session was ended.

### **Inter-Observer Agreement (IOA)**

To ensure all participants were being scored accurately, I used the DTTEF to score their performance during each session and I also had a second trained observer score approximately 50% of the sessions also using the DTTEF. An agreement was recorded if the observer and I score an item in the same way (e.g., we both scored a participant as correct or we both scored her as incorrect). A disagreement was if the observer and I scored a participant differently on one of the DTTEF components (e.g., one of us scored the participant as correct whereas the other one of us scored her as incorrect on the same item). IOA was computed for each scored session by dividing the number of agreements by the number of agreements plus disagreements, and multiplying by 100% (Martin & Pear, 2015). The average IOA across all the sessions was 92% (Baseline, 93.7%; Post-treatment, 94.3%; and Generalization, 88.1%).

### **Procedural Integrity**

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Procedural integrity (PI) was assessed during every phase of the study. There was a separate, specific script for Baseline, Intervention, Post-training assessment, and Generalization phases. A trained observer was either present at the sessions or watched video recordings of the sessions to see whether the confederate role-playing a child with autism and the researcher followed the procedure as planned. The observer recorded the confederate's and the researcher's behaviors on the procedural reliability data sheet for each phase of the study. PI was calculated by adding up the percentage of steps that were administered correctly during each scored session. PI to determine how the procedure was carried out as planned was completed for 40% of the sessions, and averaged 100%. PI for the confederate's behavior was completed for 50% of the sessions, and averaged 98.12%, ranging from 86% to 100%.

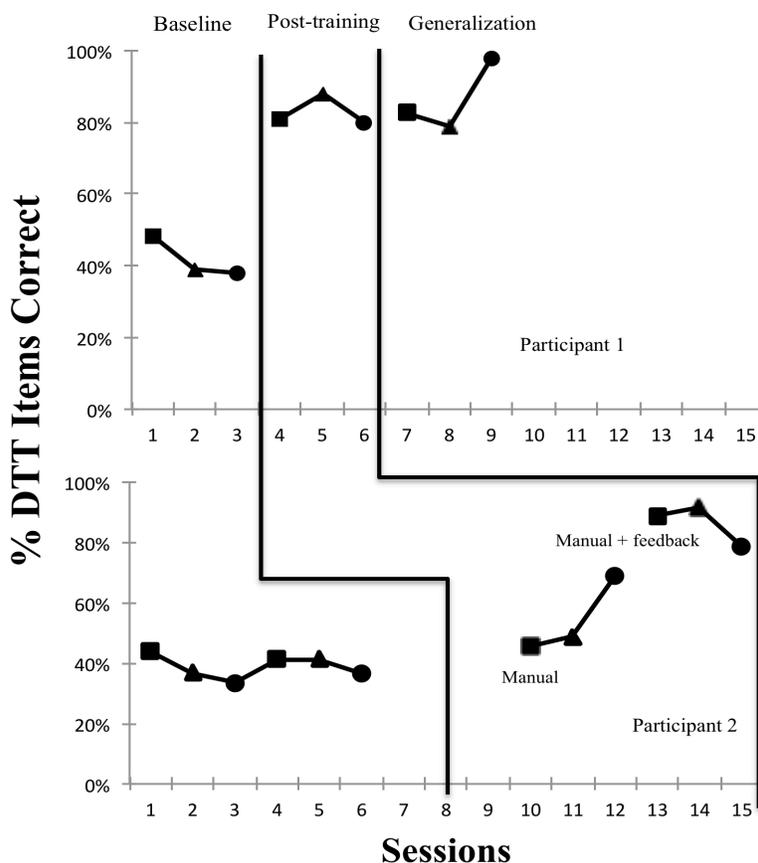
### Results

#### Self-Instructional Package

A participant's performance for each DTT task was scored on the DTTEF. Her average score on each of the teaching tasks were compared across the phases of the study (Baseline to Post-training to Generalization). All the average scores were then plotted into a graph (see Figure 1) for visual inspection, as per the guidelines described by Martin and Pear (2015).

As seen Figure 1, Participant 1 showed considerable improvement in DTT accuracy on all three tasks from the Baseline assessment to the Post-training assessment. In the Baseline assessment completed by Participant 1, she scored an average of 41.7% (Baseline 1: matching, 48%; pointing, 38%; and imitation, 39%) across all three tasks. DTT accuracy improved for Participant 1 in the Post-training assessment to an average of 83% (matching, 81%; pointing, 88%; and imitation, 80%). There was an increase of 41.3% in DTT accuracy, and the participant reached mastery criterion (set at 80%) on all three tasks.

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*Figure 1.* Percent correct of DTT components performed correct on the 21-item DTTEF (■ matching task, ▲ pointing-to-named pictures task, and ● motor imitation task) for Participants 1 and 2.

Participant 2 also showed improvement in DTT accuracy from Baseline to Post-training assessment (see Figure 1). During her two baseline assessments her average score across all three tasks was 39% (Baseline 1: matching, 44%; pointing, 37%; imitation, 34%, and Baseline 2: matching, 41%; pointing, 41%; imitation, 37%). After studying the self-instructional package Participant 2's scores increased to an average of 54.6% (matching, 46%; pointing, 49%; imitation, 69%), demonstrating an increase of only 15.6%. Because Participant 2 did not achieve mastery after studying the self-instructional package, she was given a brief feedback session. After the feedback session Participant 2's score increased to an average of 86.3% (matching, 89%; pointing, 91%; imitation, 79%), and she mastered two out of the three tasks. In total

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Participant 2's score increased an of average 47.3% from Baseline to the Post-Treatment plus Feedback phase. It is important to note that, due to time constraints, only 6 trials of the matching and the pointing task were assessed in the post-treatment plus feedback phase.

As Figure 2 demonstrates, Participant 3 showed a sizeable increase in DTT accuracy from Baseline to the Post-training assessment. In the Baseline assessment she scored an average of 37.6% (matching, 38%; pointing, 35%; imitation, 40%), DTT accuracy improved to an average 86.3% in the Post-training assessment (matching, 83%; pointing, 85%; imitation, 91%), an increase of 51.3% from Baseline, which is the largest increase of the four participants. Participant 3 also achieved the mastery criterion on all three tasks.

Finally, Participant 4 demonstrated an increase in DTT accuracy from Baseline to the Post-treatment assessment, but didn't quite achieve the mastery criterion (see Figure 2). Across both Baseline assessments her average score was 40.8% (Baseline 1: matching, 47%; pointing, 37%; imitation, 46%, and Baseline 2: matching, 40%; pointing, 34%; imitation, 41%), and improved to 66.33% (matching, 76%; pointing, 49%; imitation, 74%) in the Post-treatment assessment. Participant 4 only improved 25.53% in DTT accuracy and because of this she was given a feedback session. After the feedback session Participant 4's average score increased to 86.3% (matching, 86%; pointing, 85%; imitation, 88%) with an average increase of 45.5% from Baseline to the Post-Treatment plus Feedback phase. Participant 4 ended up achieving mastery on all three tasks after the feedback session.

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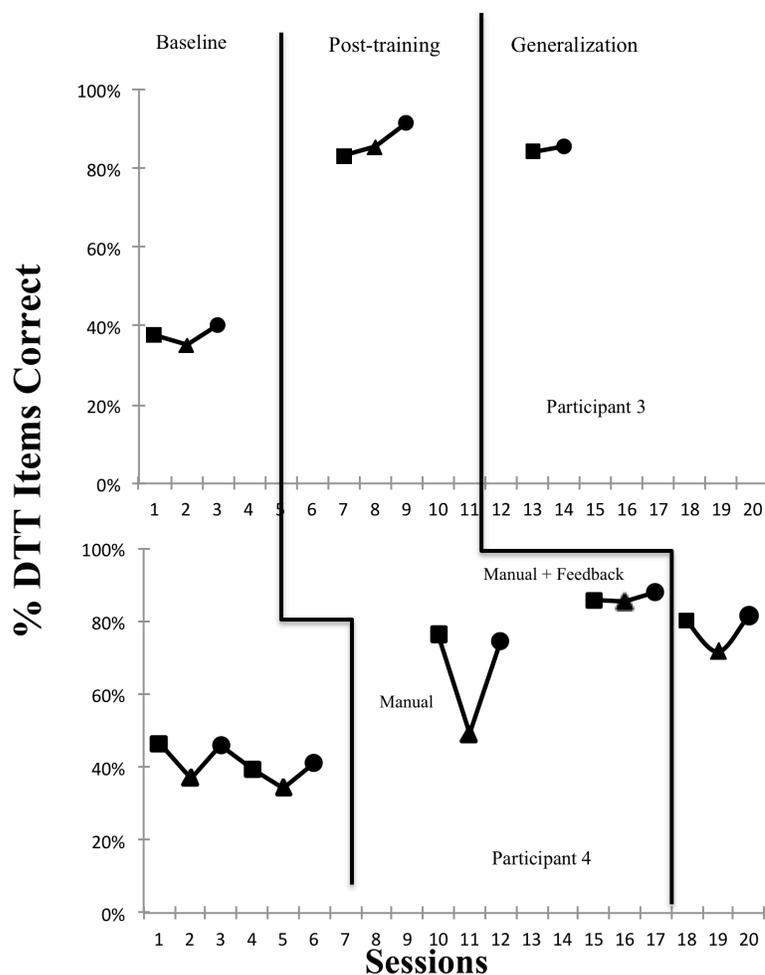
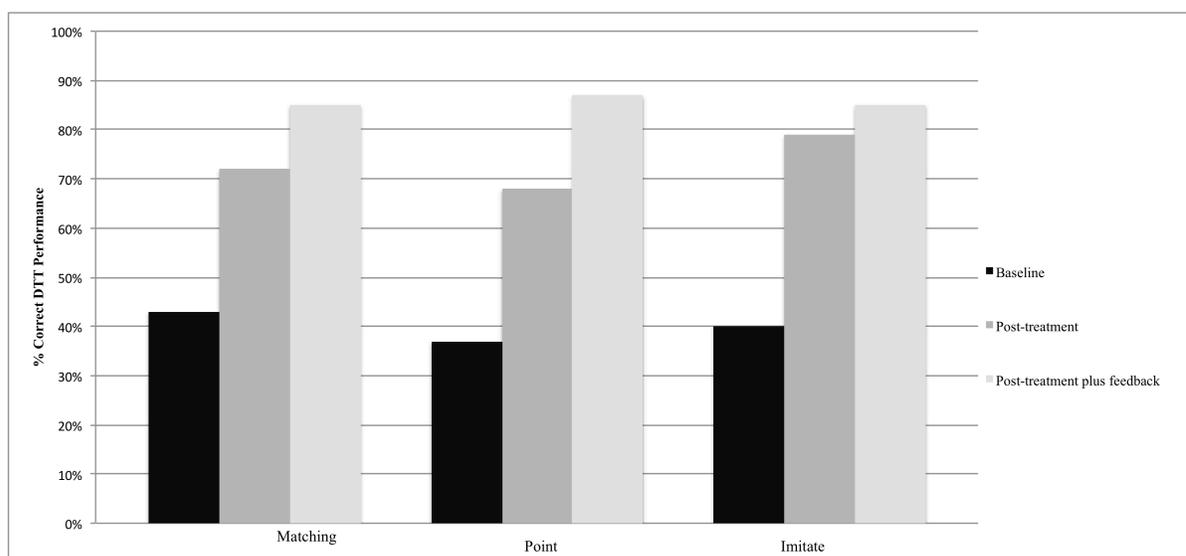


Figure 2. Percent correct of DTT components performed correct on the 21-item DTTEF (■ matching task, ▲ pointing-to-named pictures task, and ● motor imitation task) for Participants 3 and 4.

After studying the self-instructional package, the average increase in DTT performance was 32.78% and increased further to 52.7% after two of the participants received the feedback session (39.78% in Baseline; 72.56% in Post-treatment; and 85.48% in Post-treatment plus feedback). A paired samples *t*-test was conducted to determine if the increase in scores from the Baseline phase ( $M = 40$ ,  $SD = 1.83$ ) and Post-training plus feedback phase ( $M = 85.5$ ,  $SD = 1.73$ ) were statistically significant. The results indicated that the improvement in DTT scores from Baseline to Post-treatment plus feedback across the four participants were statistically significant,  $t(3) = -26.64$ ,  $p < .001$ .

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Of the four participants, three of them reached the mastery criterion of 80% DTT accuracy for all three tasks. The only exception was Participant 3 who failed to achieve mastery on the imitation task. Figure 3 demonstrates that the mean accuracy across the three tasks was similar. In Baseline the average scores for the three tasks were as follows: 43% for the matching task; 37% for pointing task; and 40% for the imitation task ( $SD = 3.00$ ). During the Post-treatment Assessment the average scores for the three tasks were: 72% for the matching task; 68% for the pointing task; and 79% for the imitation task ( $SD = 5.57$ ). After Participants 2 and 4 received a feedback session average scores on the three tasks further increased to: 85% for the matching task; 87% for the pointing task; and 85% for the imitation task ( $SD = 1.15$ ). There was a larger variation in average scores across the three tasks following the Post-treatment assessment ( $SD = 5.57$ ). A reason for this could be that Participants 2 had very low scores on the matching and the pointing-to-named pictures tasks creating a larger range in scores for that phase



*Figure 3.* Average DTT accuracy across the 4 participants represented by task (matching, point, and imitation) across phases (Baseline to Post-treatment to Post-treatment plus feedback).

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The self-reported study time for each participant is shown in Figure 4. On average it took the participants 8 hours and 45 minutes to study the self-instructional package. The study time ranged from only 2 hours up to 21 hours and 40 minutes (Participant 1, 360 minutes; Participant 2, 158 minutes; Participant 3, 1300 minutes; and Participant 4, 120 minutes). Study time was self-reported by the participant and included how long it took each of them to read through the chapters, complete the self-practice activities, and watch the videos.

<b>Participant</b>	<b>Study Time (in hours and minutes)</b>	<b>Mastered after self-instructional package?</b>
1	6 hours	YES
2	2 hours and 38 minutes	NO (feedback session required)
3	21 hours and 40 minutes	YES
4	2 hours	NO (feedback session required)

*Figure 4.* Self-reported study time for each participant.

### **Generalization**

Three of the four participants conducted generalization sessions with their child with autism. Participant 1 was successful in generalizing her skills, scoring on average 86.6% (matching, 83%; pointing, 79%; imitation, 98%), maintaining mastery criterion on two out of the three tasks. Participant 3 was able to generalize her DTT skills, scoring an average of 85% (matching, 84%; imitation, 86%), maintaining mastery across the two tasks that were assessed. It is important to note that only a limited number of trials for each task (5 trials for matching and 7 trials for imitate) were assessed in Participant 3's generalization session. The session was ended because the child was demonstrating signs of unwillingness to participate. Finally, Participant 4 came very close to generalizing her DTT skills to her child with autism. On average she scored 77.8% across the three tasks (matching, 80%; imitation, 82%; pointing, 72%) and maintained

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mastery criterion for two of three the tasks. Participant 2 declined to conduct a generalization session with her child with ASD.

### **Social Validity**

A social validity questionnaire was administered to each participant upon completion of the study. The questionnaire included 10 items that gave the participant the opportunity to provide feedback on the goals, procedures, and effects of the study (See Appendix F). Each item was rated on a scale of 1-5. With 1 representing “disagree” and 5 representing “agree”. Items 1-4 on the goals of the study’s importance were rated extremely high, with an average rating of 5. Item 5, which stated “I found the self-instructional format of the manual easy to understand” was rated less favorably with an average rating of 3. The average score for Item 4 was 4.67, which suggests that participants found the video demonstrations to be helpful. Participants were neutral in their responses to how enjoyable they found the study material as Item 7 had an average score of 3.4. The participants tended to agree that they had learned to conduct DTT with their own children with ASD and children with ASD in general. The average ratings for those questions were 4.75 (Item 9) and 4 (Item 8) respectively. The average rating for Item 10 was 4.25, suggesting that participants would recommend this training method to other parents with children with ASD.

### **Discussion**

The results of the study demonstrate that the Fazzio and Martin DTT Self-Instructional Package was very effective for improving DTT accuracy in two of the four mothers of children with ASD, and the package plus a brief feedback session was effective for the other two mothers. These findings are not quite as strong as the Wightman et al. (2012) study, in which 12 of the 13 newly-hired ABA tutors mastered all three tasks after studying the self-instructional package. In

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the current study, all four participants' DTT accuracy improved from the Baseline assessment to the Post-treatment assessment. Participant 1's DTT accuracy improved, on average, a total of 41.3%. Participant 2's accuracy improved, on average, a total of 15.6% after studying the self-instructional package, with a further increase of 31.7% after the feedback session (47.3% in total from Baseline to Post-Treatment plus Feedback). Participant 3's DTT accuracy improved, on average, a total of 51.3%. Participant 4's accuracy improved, on average, a total of 25.53% after studying the self-instructional package, with an additional improvement of 19.97% following the feedback session (45.5% in total from Baseline to Post-Treatment plus feedback). The four participants reached the Mastery criterion (80%) for all tasks in the Post-treatment assessment phase or the Post-treatment assessment plus feedback phase with the exception for Participant 2 on the imitation task (79% accuracy). Furthermore, three of the four participants were able to conduct a generalization session with their child with ASD, and were able to successfully teach the three tasks at an average of 83% DTT accuracy.

The current study had high IOA scores at 92%. It also had high PI scores, which were 100% across all phases of the study, and high confederate PI scores at 98.12%.

The results of the study suggest that the modifications made to the 4<sup>th</sup> edition of the Fazio and Martin Self-Instructional Package, including the additional chapters, study questions, and video demonstrations, were helpful for teaching mothers with children with ASD to implement DTT. Although two participants needed a feedback session, this is an improvement from the Young et al. (2012) study in which all parent participants needed a feedback session with the researcher, further providing evidence that 4<sup>th</sup> edition of the self-instructional package is an effective tool for teaching parents with children with ASD.

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**Limitations.** The current study has several limitations, the first being its small sample size. Due to an extremely high dropout rate, out of the 12 parents who returned consent forms only 2 pairs of participants completed the study. This could demonstrate a sample bias, in that there may have been some external factors influencing the participants completion (i.e. socioeconomic status, English as a first language, employment status, etc.). Therefore, the results should be interpreted with caution, and replication across additional pairs of parents is suggested.

Second, due to parent availability, scheduling sessions at the appropriate times to fit with the study's design was extremely difficult. Specifically, Participant 4 was administered the self-instructional package before Participant 3 had her post-treatment session because of a last-minute cancellation. Therefore, it is not an ideal multiple-baseline design across a pair of participants because Participant 4 should not have received treatment until Participant 3 had completed the Post-treatment assessment phase of the study. However, it is unlikely that this would affected the results seeing as the participants did not know one another and lived in different areas of the city.

Third, because the self-instructional package was left with participants to study on their own time, it was not possible to monitor how they studied, if they completed all of the study questions, if they participated in the self-practice exercises, or if their self-reported study time was accurate. These items were monitored in the Wightman et al. (2012) study in which all sessions and studying took place in a private testing room at St.Amant, but they were not monitored in this study due to the fact that the participants were not coming to a laboratory setting. This limitation should be addressed in future studies with parents with children with ASD. It could be hypothesized that, as represented by their self-reported study times (see Figure 4), Participants 2 and 4 did not put forth as much effort into studying the self-instructional

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package as Participants 1 and 3 did. This could help explain why Participants 2 and 4 needed a feedback session.

Fourth, the data sheets used by participants (see example in Appendix B) in the current study were based off data sheets used by Boris et al. (2011) from the 3<sup>rd</sup> edition of the manual. After data collection began, it was realized that Wightman et al. (2012) had used a more detailed data sheet which included: a section explaining the materials needed; a correct response; the set-up for each trial; the instruction; and a description of the prompting level for each of the three tasks. This may have had an impact on DTT performance for the four participants as the most common errors on the DTTEF involved delivering the correct instruction, and implementing the correct prompting level. In comparison to the Wightman et al. (2012) this does represent a limitation, however, it does demonstrate a strength to the study. This is because two out of the four participants were able to achieve mastery using the data sheets after studying the self-instructional package alone, and furthermore, the other two participants only needed a brief feedback session to achieve mastery.

A final limitation to the study is that for the Mastery Tests that were completed after Parts I and II of the manual, like the Wightman et al. (2012) study, if a participant answered a question incorrectly she was only required to go back, re-study the material, and then answer that same question again. Essentially a participant was just going back and looking for the answer to that question, which doesn't necessarily represent actually knowing the answer. All four participants answered at least one question wrong with as many as five per Mastery Test. This implies that the Mastery Tests may not have represented a participant's mastered knowledge of the material. Future studies might want to consider addressing this limitation.

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**Future research directions.** Future research should attempt to replicate these findings over additional pairs of participants. Perhaps a recruitment letter that better explains the study's activities or a higher incentive to complete participation would be an effective way to retain participants. As mentioned previously, future studies should also control for the application of the study process (i.e. monitoring exact study time, completion of self-practice exercises, etc.). Generally, the results from the social validity feedback questionnaire were positive, except for Item 3, in which participants only scored the ease of understanding the manual as neutral (3 average response). A future study might want to consider making the manual more "user" friendly, and less time consuming to study. Pedreira and Pear (2015) evaluated motivation levels of university students when the Fazzio and Martin DTT Self-Instructional Package was combined with Computer-Aided Personalized System of Instruction (CAPSI) compared to just the self-instructional package on its own. They found that participants who were assigned to the DTT self-instructional package plus CAPSI condition had higher levels of self-reported motivation and this positively correlated with DTT performance. This study suggests that future studies may want to consider combining the manual with computer-aided instruction as a way to increase participant motivation.

In summary, the Fazzio and Martin Self-Instructional Package (2010) alone was found to be effective in improving participants DTT average accuracy to the mastery criterion for two out of the four participants across all three tasks (83% and 86.3% respectively). With only a brief feedback session Participants 2 and 4 were also able to achieve mastery criterion scores across all three tasks (86.3% and 86.3% respectively). In addition all three of the participants who participated in generalization sessions were able to successfully generalize their skills to their child with ASD. Although two of the four participants did need a feedback session, defeating the

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purpose of the package being self-instructional, it is suggested that additional time spent studying could eliminate the need for the feedback session. In conclusion, the results of this study suggest that with efficient time spent studying, the self-instructional package is effective for teaching parents with children with ASD to implement DTT.

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## SELF-INSTRUCTIONAL PACKAGE TO TEACH PARENTS DTT

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Appendix A

**Abbreviated Instructions for Teaching Children with Autism to Point to Pictures When Named Using Discrete-Trials Teaching**

- For this task you will role-play a teacher who is attempting to teach a child with autism who has minimal language skills. Do your best at providing what you think would be appropriate instructions, prompts or cues, and consequences while attempting to teach the “child”, based on the guidelines listed below.
  - Here are three pictures. Your task is to teach this person (who will be role-playing a child with autism) to point to the correct picture after you place the three pictures on the table and name one of them. Across trials, try to teach the “child” to point to each picture as they are named.
  - Take a few minutes and study the attached data sheet. Then return to this page and read the “Summary of Steps” below.

Summary of Steps

1. Arrange necessary materials.
2. Decide what you will use as consequences for correct responses and consequences for incorrect responses.
3. One each trial:
  - a. Secure the child’s attention.
  - b. Present the correct materials.
  - c. Present the correct instruction.
  - d. Provide whatever extra help (i.e., prompts or cues) you think are necessary for the child to respond correctly.
  - e. Once the “child” responds, provide what you consider to an appropriate feedback or reward for a correct response, or provide an appropriate reaction for an error.
  - f. Across trials gradually provide less and less prompts or cues by prompting less (i.e. fade out the extra prompts).
  - g. Continue in this manner until you have conducted 12 teaching trials. After each response by the “child”, record the child’s performance as directed on the attached data sheet. This task takes approximately 10-15 minutes to complete. Please let us know when you have finished.

Appendix B

**Data Sheet for Pointing-to-Named Pictures**

On each trial, record child’s response as correct (✓) or error (×) or no response (NR) in the appropriate column, and indicate the prompting level (F, P1, P2, or NP)

Trials	Position of Items			Picture to Give to Child	Standard Trials		Error Correction Trials	
	Tractor	Dog	Apple		Correct	Error	Correct	Error
1	R	M	L	Tractor				
2	L	R	M	Dog				
3	M	L	R	Apple				
4	R	M	L	Dog				
5	L	R	M	Apple				
6	M	L	R	Tractor				
7	R	M	L	Tractor				
8	L	R	M	Apple				
9	M	L	R	Tractor				
10	R	M	L	Dog				
11	L	R	M	Tractor				
12	M	L	R	Dog				

Appendix C

**Discrete-Trials Teaching Evaluation Form**

**DTTEF SCORE FORM**

**SCORING**

✓ = performed correctly

X = performed incorrectly

/ = did not apply

**INSTRUCTIONS FOR SCORING**

- Score “Preparing to Conduct a Session”, Components 1-6, using the space below.
- During a DTT session, score the components for conducting DTT trials, Components 7-19, on the other side of this form.
- Following a DTT session, score Component 20 by examining the fading procedure and data sheet used by the teacher and record your results on the other side of this form.

**COMPONENTS**

**SCORE**

<b>Part I: Prepare to Conduct a Teaching Session</b>	
1. Determine Teaching Task	
2. Gather Teaching Materials	
3. Select at Least 3 Reinforcers	
4. Arrange the Teaching Setting	
5. Determine the Prompt-Fading Procedure and the Initial Fading Step	
6. Invite Child to the Table and Give a Reinforcer Choice	

SELF-INSTRUCTIONAL PACKAGE TO TEACH PARENTS DTT

**RECORDING ON EACH DTT TRIAL**

- On Standard Trials, record Components 7, 8, 9, 10, 11, 12, or 13, 14a, & 15a
- If the child responded correctly on a Standard Trial (e.g., Trial 1), then start recording the next trial (e.g., Trial 2) at Component 7.
- If the child responded incorrectly on a Standard Trial (e.g., Trial 1), then start recording the error correction trial at Step 16 in the column (e.g., Trial 2) after the column of the previous Standard Trial and record Components 16, 17, 18, 19, 14b, & 15b.
- As indicated above, Standard and Error Correction Trials should be recorded in different trial columns

**COMPONENTS**

**TRIALS**

<b>Part II: On Standard Trials, Manage Antecedents</b>		1	2	3	4	5	6	7	8	9	10	11	12
7. Check the data sheet for the arrangement of teaching materials and/or response to be modeled.													
8. Secure the child’s attention													
9. Present the teaching materials and/or model response													
10. Present the correct instruction													
11. Present Prompts													
<b>Part III: On Standard Trials, Manage Consequences &amp; Record Data</b>													
On a trial, Score 12 <b>Or</b> 13 Not both	12. Following a <b>correct response</b> , praise & present an additional reinforcer												
	----- 13. Following an <b>incorrect response</b> , block gently if possible, remove materials or stop gesturing & show a neutral expression for 2 or 3 seconds												
14a. Record the response immediately/accurately													
15a. Allow brief intertrial interval of 3-5 seconds													

<b>Part IV: An Error Correction Trial Following An Error (record in the next column following the preceding standard trial)</b>													
16. Secure the child’s attention													
17. Re-present the materials													
18. Re-present the instruction & prompt immediately to guarantee correct response													
19. Praise only													
14b. Record the response immediately/ accurately													
15b. Allow brief intertrial interval of 3-5 seconds.													

<b>Part IV: Prompt Fading</b>	20. Fade prompts across trials as described on the data sheet.	
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Appendix D

Daniela Fazio & Garry Martin

**APPENDIX II**

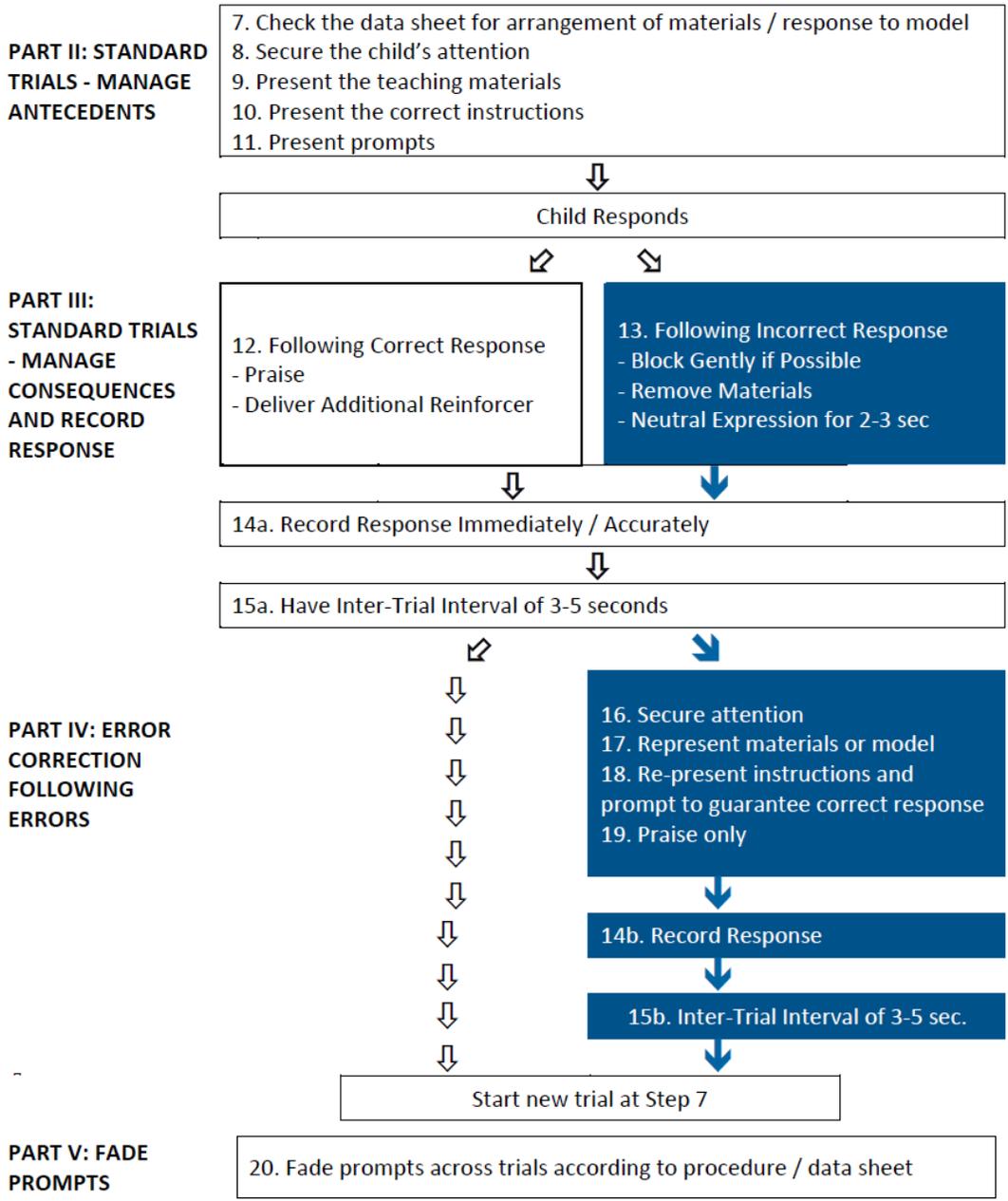
**AN OVERVIEW OF THE 20 COMPONENTS OF DTT AND THE DTTEF<sup>®</sup>**

Part I: Prepare to Conduct a Teaching Session

1. Determine Teaching Task
2. Gather Teaching Materials
  - Procedure sheet
  - Data sheet and pen/pencil
  - Task materials
3. Select at Least 3 Reinforcers
  - Tokens?
  - Edibles?
  - Activities?
  - Toys?
  - Type of praise?
4. Arrange the Teaching Setting
  - Materials organized on table or setting
5. Determine the prompt-fading procedure and the Initial Fading Step
  - See procedure sheet and/or data sheet
  - Materials organized on table or setting
6. Invite Child to the Table and Give a Reinforcer Choice
  - Positive interaction with child and child sitting appropriately
  - Give the child a choice of reinforcers, and use the chosen reinforcer for the first few trials

**APPENDIX III**

**COMPONENTS OF THE DTTEF<sup>®</sup>**



SELF-INSTRUCTIONAL PACKAGE TO TEACH PARENTS DTT

Appendix E

**Social Validity Questionnaire**

Thank you for taking the time to respond to this questionnaire. It is designed to help us improve our teaching procedures. Please respond to all questions. For each question, please place a mark in the appropriate column that best fits your judgment. Check the column according to how you agree or disagree with each statement. Your answers to the questionnaire will be anonymous.

	1 Disagree	2 Somewhat Disagree	3 Neutral	4 Somewhat Agree	5 Agree
<b>Goals</b>					
1. I think that the goal of the study, to teach parents to conduct teaching sessions with children with autism is important.					
2. I think that the goal of teaching parents how to prompt correct responses when teaching children with autism is important.					
3. I think that the goal of teaching parents to reinforce correct responses while teaching children with autism is important.					
4. I think that the goal of teaching parents to correct errors made during teaching trials with children with autism is important.					
<b>Procedures</b>					
5. I found the self-instructional format of the manual easy to understand.					
6. I found the video to be very helpful.					
7. I have enjoyed using the self-instructional materials.					
<b>Effects</b>					
8. I have learned to conduct discrete trials teaching with children with autism.					
9. I think that what I have learned can help me to teach my child with autism.					
10. I would recommend this training opportunity to other parents of children with autism.					