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Abstract

Discrete Trial Instruction: Comparing the Abbreviated Performance Feedback and Lecture Test Models

by

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MS, Chicago School of Professional Psychology, 2010

MA, Walden University, 2005

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Dissertation Submitted in Partial Fulfillment

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Abstract

Growing media attention and a high diagnosis rate of autism places significant demand on the service industry to provide qualified staff to work with individuals who have autism. Discrete trial instruction (DTI) is one of the most sought-after treatment approaches for those individuals. However, there is a gap in research regarding the efficacy of training methods for those who train direct staff to implement DTI. This quantitative study used an applied behavior analysis basis, deriving from foundations of behavior theory, to compare the abbreviated feedback form (AFF) to the lecture test model (LTM) to understand which will improve direct staff's ability to implement DTI more efficiently from baseline. The AFF provided for trainees a list of skills to implement tasks that have multiple steps. The LTM provided trainees a lecture of skills to understand basic applied behavior analysis, autism, and DTI. Four participating staff's baseline and training data were analyzed by comparing their scores to the set criterion from the AFF. The data were analyzed by both the program supervisor and the researcher, with inter-observer agreement reached. Using a single-subject, AB design, data demonstrated that staff who were trained using the AFF had significant improvement from baseline, compared to staff trained using the LTM. Supervisors who use the AFF to more efficiently and rapidly train staff may decrease the time gap between service recommendation and implementation, making needed treatment more readily available and efficacious to children diagnosed with autism. Improvements in staff skill set will likely have a direct correlation on the improvements and long term outcomes for those being treated.

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Training

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Dedication

I am dedicating this to my three sons: Conner, Forrest, and Matthew. Conner (C.J.), Forrest, and Matthew helped take care of each other, and learned to cook and do laundry to help me complete this project. I would not have been able to do this if they were not such helpful, independent, and capable boys. I hope watching me work toward my dreams has inspired them to achieve theirs. I would also like to dedicate the completion of this dissertation to Jeff Dobbs, who without his dedication and support to keeping to our Sunday schedule this would never have been completed. Thank you.

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Chapter 1: Introduction to Study

Introduction

According to the Centers for Disease Control and Prevention (CDC, 2010), the average prevalence of autism was reported to be approximately 1 in 150 children in 2010. This rate demonstrates a significant rise from the reported prevalence of 20.2 per 10,000 in 1993-95 (Yeargin-Allsopp, 1993). This recent rise in the reported cases of autism, as well as the growing media attention, has lead to an increased awareness of this disorder. In an attempt to keep up with the rate of diagnosis, a significant demand has been placed on the service industry to provide trained staff to serve families of children with autism (Yeargin-Allsopp, 1993).

An overwhelming concern for autism educators is the need for more training and support for staff (Scheuermann, Webber, Boutot, & Goodwin, 2003). Autism educators also reported that a "crash course" in training was not sufficient to move intervention to a level considered best practice (Scott & Nelson, 2000; Van Acker, Boreson, Gable, & Potterton, 2005). Possible reasons individuals do not receive the support requested include limited money, time, and resources.

Support is primarily provided in two places: at school and at home. The state of California provides staff, training, and monitoring of programs at school through an individual education plan (IEP) that focuses on academic skills. Home programs, often funded by grants provided by the state to regional centers, focus on self-help, health/safety, and social skill interventions (Department of Developmental Services, 2009). While these are often funded by the state, they do not monitor the training of staff,

but only that staff meet the specified degree requirement. At this time, direct staff are expected to have a bachelor's degree in a related field (i.e., education, psychology, or social work) and at least 2 years experience. Supervisors who support the staff and provide training are also expected to have a master's degree as well as to be a board certified behavior analyst (BCBA) in order to provide training and supervision to the staff. In rural areas, it is hard to find supervisors or staff with this level of education or experience. At this time, many individuals who are interested in working in this field are currently accessing education and training while working towards gaining experience as volunteers.

As a result, there is very little research on how best to train staff. The majority of the literature around staff training has been based on school programs and parent training, rather than on staff working in home programs.

The study by Leblanc, Ricciardi, and Luiselli on using an AFF to training staff with (2005) was used and the data methods were replicated; while following their recommendations for further studies. The authors also recommended generalizing the results to new staff and environments. This method, as well as different approaches for staff training, will be reviewed in more detail in the literature review, while background information and supporting documentation for selecting the AFF for this study will be provided in this chapter.

Background of the Study

At this time, research around intensive intervention has concerned itself with determining the correct amount of service hours, providing the best curriculum, and the optimum age and duration for making the greatest impact on learning and increasing intelligence (Maurice, Green, & Luce, 1996). Attention to evaluating staff training methods has increased due to the need for high-quality control of these programs (Hillman, 2009). Typically, behavioral consultants provide supervision for (DTI) programs. However, they are not always available or the fees are deemed too expensive. , This proves to be a barrier to accessing higher quality service (Hillman, 2009). As a result, less qualified, more readily available, and therefore less expensive staff is sought out. Through the literature review of staff training methods, specifically the AFF and lecture test model (LTM), this study will focus on providing support for the use of the lecture test model as an introduction to implementing DTI and the AFF as a hands-on training method, which, when combined, will result in mastery level implementation of DTI.

DTI was selected because it is the most sought-after treatment by parents for their children with autism. Lovaas, who presented this method, stated that a 50% recovery rate was found when using DTI as a treatment for children with autism (1987). This research resulted in interest in DTI from government agencies, such as the National Research Council (2001). Researchers have worked on independent studies and have attempted to replicate the original study, but with no success (Rogers & Vismara, 2008). While there is empirical evidence to support the use of this method, Lovaas' initial claims of a

dramatic change or a high percentage of recovery or have been found in few studies to date. These are noted in Chapter 2 (Rogers & Vismara, 2008).

This new form of intervention produced a need for skilled staff. The cost of finding and training staff impacted the school system and created difficulty in its ability to provide Lovaas's interventions (Rogers& Vismara, 2008). The impact of the need for DTI intervention affected the school system due to the lack of trained staff and the high cost of this intervention, is it also affected parents. Schools and parents have paid large sums of money to private agencies to have DTI for their children with autism in hopes of gaining the same results reported in the Lovaas study (Rogers & Vismara, 2008). However, the cost of 40 hours a week of one-on-one intervention can reach $40,000 per year, which severely impacts school budgets and often puts it out of reach for families (Hillman, 2009).

The challenge facing schools and families and the premise of this study are related: at this time, the number of children diagnosed with autism far surpasses the number of qualified staff to provide interventions (Leblanc, Ricciardi & Luiselli, 2005; Hillman, 2009). A common problem and criticism about DTI is direct staffs' reported difficulty in acquiring the skills needed to implement the method as well as the lack of qualified and available supervisors, thus increasing the length of intervention and therefore the cost (Leblanc, Ricciardi & Luiselli, 2005; Hillman, 2009). There are many reasons why acquiring and maintaining an efficient skill set for staff is difficult, for example, lack of supervision during the training process, lack of staff experience in working with a child with autism, staff being less then well-informed about appropriate

educational practices for children with autism, and the cost of training (Green, Brennan, & Fein, 2002). This lack of support and skill often result in high turnover rates, which starts the hiring and training process over again and, in some cases, slows down or stops the child's progress. Parents cite turnover and lack of trained staff as the main complaints about home programs (Tri-Counties Regional Center, 2007). Programs with high satisfaction had increased satisfaction over the course of treatment (Anderson et al., 1987; Birnbrauer & Leach, 1993; Smith et al., 2000). Additionally, parents are aware that services for children with autism are time-limited and rarely provided for children for more than 3 years due to the lack of state resources in California, as noted in the Trailer Bill (CDC, 2009). This time limit is a result of research suggesting that the main impact of intervention is in the first year and that increases have shown to plateau thereafter, at least in terms of IQ (Hillman, 2009).

The study by Leblanc, Ricciardi, and Luiselli (2005) on improving DTI by paraprofessional staff through an abbreviated performance feedback intervention was pertinent in beginning, to examine the use of the AFF and the staff's skill set. Their study supports the method of evaluating the staff in the school setting; however they recommended that further research be conducted in other environments to continue support and the validity of this method. An additional reason to conduct further research is the cost of implementing the most sought after intervention for children with autism (Howard, Sparkman, Cohen, Green, & Stanislaus, 2005).

An objective of the study was to evaluate practical and efficient training strategies specific to DTI. Although the AFF was effective in improving the DTI skills of staff, the

concern of Leblanc, Ricciardi, and Luiselli (2005) was with assessing whether the training would be generalizable to other staff and to novel or varied learning programs (Leblanc, Ricciardi & Luiselli, 2005). One additional concern was that staff training was competency-focused and that it would be able to teach staff how to implement the skills that are required of them on the job (Lablanc, Ricciardi, & Luiselli, 2005). For this reason, this study's objective was to evaluate staff training on the job and to evaluate if the training strategy would be practical and effective in home programs.

Children with autism are dependent, in part, on the skills of the staff. The contribution of the DTI training strategies was to improve the proficiency of individuals who were learning how to implement DTI and those who had acquired some, but not all, of the skills needed to implement DTI.

Statement of the Problem

DTI is the most sought-after methodology by parents and professionals to treat autism, but there are not qualified individuals to provide this intervention at the current rate of diagnosis (Leblanc, Ricciardi & Luiselli, 2005). There are noteworthy concerns about how individuals are taught to implement DTI, as well as about the ability to maintain their skills over the long term. It has been reported that DTI is complicated both to teach and to learn and is considered labor-intensive by those who have gone through training (Leblanc, Ricciardi & Luiselli, 2005). Trainings reported to be labor intensive are not embraced by trainers nor trainees and such trainings do not result in the development of long-term skills (Leblanc, Ricciardi & Luiselli, 2005). The purpose of this study was to determine, by implementing a systematic replication of the study by

Leblanc, Ricciardi, and Luiselli (2005), whether the AFF is an effective and efficient method of teaching DTI The purpose of the study was based on the recommendations from the authors, and includes implementing the treatment in a new setting and/or with new individuals. Both recommendations are being reviewed in this study to further examine the validity of this treatment.

Purpose of the Study

The purpose of this qualitative study was to build upon the current research on the current research of Leblanc, Ricciardi, and Luiselli's (2005) study and to examine the efficacy of using the AFF in training staff to implement DTI when compared to a lecture test model alone. This was a systematic replication of the study by Leblanc, Ricciardi, and Luiselli (2005) on how to improve the DTI of staff through the analysis of data where abbreviated performance feedback forms were used. There was an expected increase in acquisition, which will positively increase the skill set of staff who implements DTI. This method was compared to the lecture test method which is currently used to train staff, to determine which approach proves more efficient.

Variables, Research Questions, and Hypothesess

The goal of this research project was to determine whether the AFF is an effective and efficient method of teaching staff how to implement DTI in the home when compared to a lecture test model alone. An objective measurement of the staff's ability to correctly implement DTI was important because of its connection to effective subsequent performance for children with autism. The independent variable was the use of abbreviated feedback form. The dependent variable was the rate of effective learning

outcome, as shown by the data points on the multiple baselines across staff receiving the training. The nature of the relationship between the independent and dependent variables was explored in this study, and information was gathered about ways to implement DTI. The research question for this study was as follows: When using the AFF as a method of training staff to implement DTI, will they demonstrate higher skill acquisition compared to baseline?

The following two hypotheses were derived from the research questions:

*H*o: Staff that participates in the abbreviated feedback method when learning to implement discrete trial instruction will not demonstrate an increased skill acquisition from baseline.

*H*1: It is expected that staff that participate in the abbreviated feedback method of training when learning to implement discrete trial instruction will, demonstrate an increased skill acquisition from baseline.

*H*o2: Staff that participates in the control group receiving the lecture test training model when learning to implement discrete trial instruction, will not demonstrate an increased skill acquisition from baseline.

*H*2: It is expected that staff that participate in the lecture test training model when learning to implement discrete trial instruction will demonstrate an increased skill acquisition from baseline.

Theoretical Constructs

The theoretical construct of this study was based on applied behavior methods. This includes behavior that is conceptualized with a three-term contingency, including antecedents, behavior, and consequences. Antecedents will affect behavioral outcomes, and effective teaching will incorporate antecedent and outcome (Wolery, Bailey, & Sugai, 1988). DTI, based on Skinner's operant-conditioning model, focuses on using positive reinforcement to gain behavioral change (1968). These operant training methods include shaping, changing, discrimination training, and contingency management when using DTI (Smith & Lovaas, 1998).

These behavioral methods were first used with children with disabilities by Ferster (1961), who worked with Skinner during the development of the operant-conditioning model (Lovaas, 1998). Methods of applied behavior analysis (ABA) were used for many years but did not come into common use until autism became more prevalent. When Lovaas' article was published, it produced interest in the field of ABA and in using these methods with children with autism. Today ABA is the treatment of choice for autism—it is the only method of intervention recommended by the Surgeon General—and has empirical evidence to support its use (CDC, 2010).

Definition of Terms

Abbreviated Feedback Form: A tool used to teach discreet trial instruction in a rapid fashion by using performance feedback paired with verbal review and/or video feedback (Leblanc, Ricciardi, & Luiselli, 2005).

Deprivation: Withholding a reinforcer to increase its contingent effect on learning and performance. (Cooper, Heron, & Heward, 2007).

Discrete trial instruction: A form of applied behavior analysis of using systematic presentation of learning opportunities (Leblanc, Ricciardi & Luiselli, 2005).

Descriptive Stimulus (SD): A stimulus in the presence of which a particular response will be reinforced or punished (Cooper et al., 2007).

Fading: Continued use of a prompt but with a lessening degree of emphasis after each prompt. This can mean decreasing the type of prompt or the intrusiveness of the prompt itself. There can be several gradients for each prompt (Cooper et al., 2007).

Generalization: This term refers to maintained interactions (multiple peer trainers and/or multiple training environments) (Cooper et al., 2007).

In-home services: Services that are provided in a home where a child with special needs lives (Leblanc, Ricciardi & Luiselli, 2005).

Intraverbal: An elementary verbal operant that is evoked by a verbal discriminative stimulus and that does not have point-to-point correspondence with that verbal stimulus (Cooper et. al., 2007).

Mand: An elementary verbal operant that is evoked by a motivating operation and followed by specific reinforcement

Staff: The direct provider of the services who works with children with special needs (Green et al., 2002).

Priming: This term refers to pre-teaching the target in a training environment to mimic naturalistic situations (Pierce & Schreibman, 1997).

Program coordinators: A term used to describe the supervisor of an intervention program. Their role is to have experience, formal or equivalent with applied behavior analysis, and to be able to evaluate and supervise another's performance (Green et al., 2002).

Prompting: This term refers to using visually, gesturally, verbally, or physically cued instructions to guide the child who demonstrates the behavior being targeted. This can also be described as a supplementary stimulus that raises the probability of a correct response. (Thiemann & Goldstein, 2001).

Shaping Procedure: A way of gradually changing behavior along a dimension towards an approximation of the target behavior (Thiemann & Goldstein, 2001).

Single-subject design: A research method used to document functional relationships between independent and dependent variables (Horner, et al., 2005).

Stereotyped patterns of behavior: Also known as "stimming" or self-stimulatory behaviors encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus (Cooper, et al., 2007).

Tact: An elementary verbal operant evoked by a nonverbal discriminative stimulus and followed by generalized conditioned reinforcement.

Assumption

This study was based on a handful of assumptions. It was assumed that (a) the behavior intervention itself was valid; (b) staff will be motivated to acquire the skills needed to implement DTI; (c) the tools used for training with used as they were designed; (d) that the program coordinators provided clear guidelines and feedback, and (e) that staff have specific skills to implement the new skills acquired through the use of the AFF or with the lecture test model appropriately.

Limitations

A number of limitations could have affected the course and conclusions of this study. Limitations such as; (a) the study was subject to observer drift; (b) the staff were previously exposed to different training methods of DTI implementation that might developed skills that had to be unlearned; (c) geographic location/lack of staff and (d) or the quality of the setting in which the training is delivered could have impacted the outcome.

Significance

This high diagnosis rate places a significant demand on the service industry to provide trained staff to serve families with children with autism. Discrete trial instruction is one of the most sought-after methodologies by parents and professionals to treat autism; however there is a gap in research on how to provide trained and qualified individuals. The potential contributions of this study are, generalizing results from previous research to new settings and individuals. The advanced knowledge in this

discipline can support future researchers and the individuals who manage in home DTI programs.

The results of this study are likely to provide a training environment that is considered socially valid to staff, possibly increasing job satisfaction and motivation when implementing treatment. Parents may be more satisfied with the quality of intervention being provided to their children. Employers may feel more confident with training knowing that the staff is able to provide the treatment as designed. This study has implications for social change: by providing efficient and effective staff who can implement quality treatment for children with autism spectrum disorders.

Summary

Due to the increase in the number of children diagnosed with autism and the need for qualified staff to support them, professionals are confronted with finding more effective ways to train staff who are being trained to work with children with autism. The CDC estimated that as many as 1 in 68 children in the United States are affected by autism spectrum disorders and the number is only growing (CDC, 2014).

The training of staff is not only important to professionals, but also important to the parents of children with autism. There is very little literature available on the effectiveness in school programs and there is even less research on home programs. The interest in home programs is at an all-time high due to the effective outcomes of research supporting structured teaching strategies introduced in the home (Hillman, 2009). ABA is considered to result in the best outcome for children with autism and it comes with a wealth of empirical evidence to support its use (Kramer, Cook, Browning-Wright, Mayer,

& Wallace, 2008). Discrete trail instruction (DTI), a behavior modification technique, is considered an effective teaching method to support children with autism and is reported to be the most sought after method due to promising outcomes (Leblanc, Ricciardi & Luiselli, 2005). In the following chapters, we will look at further explanations of the key points of this study as well as an overview of the supporting literature on autism, intervention, treatments such as DTI, and training methods used to support the therapist.

Chapter 2: Literature Review

The purpose of this chapter was to provide a concise synopsis of the current literature that establishes the relevance of why staff who implement DTI need more than lecture and test training methods. This chapter has been organized into five main sections: search strategies, an overview of autism spectrum disorder, interventions commonly used for individuals with autism, methods for training staff to work with individuals with autism, and the reasons further research is needed on DTI rather than other training models. It is hypothesized that staff participating in an abbreviated feedback training model will demonstrate an increased skill set from baseline compared to staff trained with the lecture test model.

Search Strategies

To identify prospective articles and books, the following databases—PsycINFO, MEDLINE, EMBASE, Cochrane Reviews, CINAHL, and ERIC —were searched.

Origins of Autism

Autism was originally considered a rare diagnosis but now affects 1 in every 68 children (CDC, 2014). The symptoms were described as a basic disturbance of schizophrenia, as well as extreme withdrawal from society and social interaction (Johnson, 2009). Johnson reported that these individuals were ambivalent about desire, feelings, or emotions, ambivalent to others, and were unaware of opposing wishes or needs. He noted that individuals who have these symptoms are also likely not to have the ability to refrain from acting on impulse.

Others built upon these foundations in an attempt to understand what was later referred to as autism. In the early 1900s, Carl Jung, a well-known personality psychologist, also took note of whom he referred to as introverts. Jung was a student of Bleuler and was influenced by his work (Johnson, 2009). He described those demonstrating the aforementioned symptoms as contemplative individuals who prefer solitude and an inner life of ideas (Jung, 1946). Jung also noted that severe introversion was thought to be a characteristic of autism or schizophrenia, but noted that a patient could achieve a state of wholeness of self (Jung, 1946).

Autism Today

In 1943, Dr. Leo Kanner of Johns Hopkins Hospital coined the term autism. The words "autism" and "autistic" stem from the Greek word "autos," meaning self. Kanner studied a group of children that displayed impairments in the domains of communication and social interaction, as well as restrictive and repetitive type behaviors that he labeled as early infantile autism (Kanner, 1943).

The rate of autism diagnosis has been increasing over the past 20 years and it is still unclear if this increase could be due to a growing awareness and thus heightened identification, an actual increase in incidence, or inaccurate diagnoses of the condition caused by inflated reporting of the condition (CDC, 20014). Every year, the United States notes how many children receive services for autism. From 1998 to 2007 the number of 6-year-olds to 21-year-olds diagnosed increased from 54,064 to 258,305 (CDC, 2009). In 2014, the number increased to 1 in every 68 children, in the United States. When looking at the age category of 3 to 13 year-olds, $64,424,298 was spent annually on state funded

supports such as regional center supports. When compared to the average person who receives services from a regional center for a disability other than autism which was reported on average 6,370 for the same age range (California Department of Developmental Services 2003b). Due to the prevalence of autism, the CDC teamed up with the American Academy of Pediatrics to raise awareness. They started to screen for warning signs in order to help identify symptoms early. With this screening tool, between 2000 and 2002 the prevalence of children affected by autism ranged from 1 in 100 to 1 in 300, with an average of 1 in every 150 children. By 2006, the average across all states was approximately 1 in 110 (CDC, 2009). and now 1 in 68 (2014).

Diagnosing Autism

At this time there is no medical test for autism. The diagnosis is made by professionals who interview parents of children suspected to have autism. Psychological tests and observations, the developmental history of the child, as well as assessments from other professionals such as occupational therapists, speech therapists, and the educational system are used to diagnose. It is reported that autism can co-exists with other developmental delays such as Fragile-X Syndrome, Seizure Disorders, and Down Syndrome, to name a few (CDC, 2009). Children with an autism spectrum disorder (ASD) can exhibit developmental delays or deficits in social interactions, verbal and nonverbal communication, and repetitive behaviors (Baker, 2001). As evident by the name, ASD is a spectrum disorder and symptoms can range from mild to severe for each individual child (American Psychiatric Association, 2000). The Department of Developmental Services (CDC, 2009) has created a red flag list for parents and

professionals to access. Examples of characteristics on this list include; not babbling, pointing, or making meaningful gestures by 1 year of age. Not speaking 1 one word by 16 months, combining two words by 2 years, or responding to their name being called. Any loss of language or social skill is considered a red flag. Some other indicators include; poor eye contact, lack of understanding on how to play with toys, repetitive behavior and odd attachments to objects. Research over the past 15 years indicates that intensive early intervention using applied behavior analytic methods have resulted in the likelihood of improved outcomes for young children with autism (Green, Brennan, & Fein, 2002; Reid et al., 2005). There are guidelines for parents and professionals to access when trying to make the best decisions for individuals with autism. The Autism Society of America has noted that the following are questions parents and professionals often ask pre-treatment include; will treatment harm my child, is it validated, what if treatment does not work? It was reported that parents whose children receive behavior analytic intervention showed high satisfaction and reduced stress over the course of treatment compared to parents whose children did not receive behavior analytic intervention. The National Institute of Mental Health reported that families should asked questions about the quality of the program and about individuals that are supporting there child. At this time the quality systems are still not monitoring skills set of the staff just the treatment type, duration, and education.

Tools and Methods Used with Individuals with Autism

There are a number of popular theories and treatment used when providing in-home support for children with autism. Recently, it has been reported that intervention

programs for children with autism have been lacking in empirical evidence to support their use (Howlin, Magiati, & Charman, 2009). Many providers are reported to be working towards responding to this challenge but, to date, only a few published interventions have demonstrated effectiveness of training methods (Vismara, Colombi, & Rogers, 2009). However, there has been some agreement when it comes to interventions based on applied behavioral intervention, such as those used in home-based intervention during early or preschool years (Maurice et al., 1996). Some of the interventions that boast established evidence bases include home-based early intensive behavioral intervention (EIBI) using the Young Autism Project, as developed by Lovaas and some of his colleagues, and other EIBI interventions, such as those used by Maurice and co-researchers.

It has been also been noted that more research is needed on which aspects of intervention are most efficacious and for what populations. Understanding the optimal timing, intensity, duration, and type of training are an area of interest for researchers (Howard et al., 2005). This is imperative not only for the child with autism, but also due to the cost of supports often needed across the lifespan of an individual with autism spectrum disorders. What is reported to substantially reduce those costs and eliminate needs for future services is effective and early intervention (California Department of Developmental Services 2003b). How to support this process is to provide well-trained staff that are able to implement the intervention as it was designed.

An area that is cautioned by researchers is methodologies that report effectiveness despite the lack of scientific data to support the claims. Untested or “alternative”

treatments can result in harm (Herbert, Sharp, & Gaudiano, 2003). Therapies can include sensory-motor therapies, facilitated communication, auditory integration training, sensory integration therapy, holding therapy, gluten-and casein-free diets, Floor Time, and a vitamin therapy using vitamin B6 and Magnesium. All of these interventions are considered to be questionable treatments for children with autism and have little data to support their claims (Herbert, Sharp, & Gaudiano, 2003; Vismara et al., 2009). Other areas where unsupported treatments can lead to harming the individuals seeking help is that they can be misled, given false hope, and pay a high financial burden in an effort to accesses these alternative treatments (Herbert, Sharp, & Gaudiano, 2003).

A journal article by Mulloy, Lang, O'Reilly, Sigafoos, Lancioni, and Rispoli (2009) researched gluten-free and casein-free diets (GFCF) in the treatment of autism spectrum disorders. It is reported by the authors that although the etiology of autisms spectrum disorders (ASD) remain unknown, there is some evidence involving environmental impacts (Cusco et al., 2009). One theory is that there is insufficient enzymatic activity, increased gastrointestinal permeability, and the absorption of toxic by-products of incompletely digested proteins from dairy (casein) and cereals (gluten). This theory is called "the Opioid-Excess Theory" (Malloy et al., 2009). The authors report that ASD symptoms are theorized to result from peptides attaching to opioid neuro-receptors (Malloy, et al., 2009). There are some conflicting results with the data and a need for continued research has been recommended. The authors reported that GFCF diet has also been linked to health risks due to nutritional deficiencies. In spite of the recommendations by experts, in 2009 20.4% of children with mild autism and 32.2%

of children with severe autism are on the diet and report it ameliorate some of the symptoms (Malloy et al., 2009).

Another method that is often used with children with autism is Floor Time. This approach is based on a developmental interactive theory of Greenspan and Wieder (1997). Greenspan and Wieder reported that the interactive relationships are the primary components in the theory and practice of this model. The family patterns are considered the main vehicle for development of growth. This includes reinforcing relationships that support security, warmth, pleasure, and safety thus allowing self-regulatory skills, and attentiveness to the environment around them (Greenspan & Wieder, 1997). According to this theory children need to develop these relationships to support true representational and abstract thinking. According to the Floor Time model there are six functional emotional skills that underlie intelligence; self-calm and process of environmental information, engaging in relationships, engaging in two-way communication, creating complex gestures, creating ideas, and building bridges between ideas and reality-based logic (Greenspan & Wieder, 1997). This is a developmental approach most often used by occupational therapists, speech pathologists, and developmentalists. This method has been reported to have favorable outcomes. In a 1998 study the authors found that of 200 children in an experimental group, 58% fell into the good-to-outstanding category, showing spontaneous symbolic abilities that related to intent and affect (Greenspan & Wieder, 1997).

There is also some interest in what is referred to as “eclectic” treatments (a combination of methods). The interest and use of these types of methods are reportedly

based on hope of recovery (Rogers & Vismara, 2008). It is not uncommon for families and professionals to use mixed methods of intervention, such as the untested interventions noted above in combination with other evidence-based practices, however this is reported to detract from progress if any of the methods are at cross-purposes (Rogers & Vismara, 2008).

A study on the comparison of intensive behavior analytic and eclectic treatments for young children with autism was conducted where three treatment approaches were looked at; intensive behavioral analytic, an eclectic (combination of methods), and a third group who received eclectic in a small group format. At follow up the intensive behavior analytic group had higher mean standard scores in all skill domains compared to the eclectic and eclectic taught in small groups. The researchers reported that intensive behavioral analytic intervention was considerably more efficacious than the "eclectic interventions (Howard et al., 2005). However, in some studies it was found that eclectic interventions could be effective. For example, in 2002, Eikeseth and colleagues compared the effects of behavior analytic intervention with eclectic treatments such as sensory integration, TEACCH (treatment and education of autistic and related communication handicapped children). They found gains in standardized test scores across language and I.Q. with the eclectic treatments; however they were small when compared to the outcomes of intensive behavior analytic treatments (Eikeseth, et al., 2002). Small gains have been found with combination treatments and alternative interventions, at this time, applied behavior analysis (ABA) is the intervention method most widely used by school and home programs and is reported to be the best proven method for treating autism by

the US Surgeon General (1999). ABA is the only intensive instruction method that has provided evidence-based approaches to behavior change by regularly measuring the outcome (Maurice et al., 1996). Research is now finding that it is the type of treatment that produced the behavior change rather than the intensity of the treatment (Howard et al., 2005).

Throughout the literature review, applied behavior analysis is still the most popular intervention type for children with autism (Rogers & Vismara, 2008). There are several programs for children with autism based on ABA principles. These interventions have often been shown to be quite effective and are based on well-established theories of learning (Rogers & Vismara, 2008). One method of treatment based on ABA was developed by the Keogel's (1995). The procedure, called pivotal response training (PRT), was coined by the Keogel's, husband and wife co-researchers. They have produced many peer-reviewed articles on the importance of training and teaching behavioral modification procedures to parents and staff in a child's natural environment using observational teaching methods. Some of the models used by the Koegels include using communication temptation, capturing and contriving motivating operations, generalized responsively, and reinforcing and shaping behavior (Keogel & Keogel, 1995). PRT is a naturalistic but structured intervention; in other words, it relies on naturally occurring teaching opportunities and consequences (Schreibman, 2000). Research has shown a positive effect on the part of the child as well as the parent implementing the treatment. PRT is child lead rather than staff led. This is thought to allow children to select their learning thus increasing motivation. PRT has been used to target language skills, play skills and

social behaviors in children with autism and is considered an incidental teaching method. However, there is criticism of this method of intervention due to a possible lack of naturally occurring teaching opportunities in ones environment (Keogel & Keogel, 1988).

Vismara, Colombi, and Roger (2009) used the PRT techniques and found it required 25 hours to teach at a sufficient level. The main goal of the authors was to design an intervention that could be implemented over a shot period of training. They reported that mastery of the teaching techniques required 12 weeks and this was considered a condensed or accelerated training. A multiple-baseline design was used to evaluate the efficacy of intervention to allow for controlling for developmental maturation and exposure to the treatment setting (Vismara, Colombi, & Roger, 2009). Measurement was taken on communication during play, spontaneous functional verbal utterances, any verbalization relevant to social interaction, or body and facial orientation towards stimulus materials. The authors found that the method of teaching was improving skill set by week 5 and 6 and that the skills maintained during the study up to 3 months after observations discontinued. The PRT methodology was original designed to be implemented at clinics where parents were trained to use the method with support from experts in the field. Although each individual was reported to increase in their skill set after training none reached consistent mastery levels (Vismara, Colombi, & Roger, 2009).

Verbal behavior is a type of ABA that is noted often in Skinner's 1957 book. Verbal behavior is now being referred to as a method of intervention by many behaviorists who work with children with autism. J. Michael a professor at Western

Michigan University wrote an article on verbal behavior and stated that it is considered in terms of three major domains: operant conditioning of adult behavior and learning to be an effective speaker and listener. The main focus of this method involves teaching language to pre-verbal children or adults who failed to develop language (Michael, 1984). What was asked was what does language consisting of, how do we acquire it, when spoken how it does affect the speaker and listener? With the delay of language with children who have autism this approach has been widely used to develop or increase vocalizations that ultimately become speech (Michael, 1984).

Sunberg, Loeb, Hale, and Eigenheer, (2002), used a verbal behavior approach to research the use of contriving establishing operations (EO) to teach mands (request) to children with autism to gain information. They specifically focus on "wh" questions to gain information. They chose this because it is under control of the EO and results in reinforcement. The results of this study were that by using a verbal behavior to teach children with autism to ask "wh" questions was considered effective method of intervention (Sunberg, et al., 2002). They also found that this method resulted in generalization outside of the training sessions and was easily incorporated in daily language training. They recommended that further study look at using EO to teach more complicated mands to children with autism to support language acquisition (Sunberg, et al., 2002).

Although PRT and verbal behavior have significant data to support their use, discrete trial instruction (DTI) continues to be the most often sought after treatment (Leblanc, Ricciardi & Luiselli, 2005). DTI is also based on ABA principles and is

reported to be an effective methodology for treating children with autism (Leblanc, Ricciardi & Luiselli, 2005). There has been promising data to support the use of DTI of form of ABA that was developed by Dr. Ivar Lovaas. This method of behavioral intervention has been one of the most commonly used types of treatments due to the effective outcomes. Lovaas describes methods of DTI performed by trained staff members who provide intervention in a highly structured and systematic teaching environment (Lovaas, 1987). Lovaas reported that a child would need to be actively engaged in DTI for at least four hours per day, five days per week, for this intervention to be effective (Lovaas, 1987).

Reid, Parson, Lattimore, Towery, and Reade reported that early behavioral intervention provided in a systematic and scientific behavioral approach, like DTI is considered to be the key to a successful intervention (2005). It was similarly reported that successful interventions employ techniques developed from the learning theory of the applied behavior analysis approach (Vismara et al., 2009). Traditional DTI methods are generally used to introduce or initially acquire a skill. DTI has been quite successful at producing fluent performances, as well as producing increases in cognitive, communicative, and social skills while minimizing autistic symptoms and other concerns with autism (Howlin et al., 2009). DTI provides a one-on-one intervention focused on systematically teaching behavioral goals in a repetitive and structured format (Howlin et al., 2009). Lovaas reported that a child with autism would show major gains of up to 40 IQ points and could be integrated into a mainstream classroom with “typical” intellectually functioning children after receiving one-on-one therapy for 40 plus hours a

week for at least two years (Lovaas, 1987). Lovaas was documented for improving the functioning of children who received intensive intervention. Of the of the 19 children in his 1987 study for at least two years maintained their gains in cognitive and language test scores (McEachin, Smith, & Lovaas, 1993). In contrast the outcomes were reported less effective if the hours received were 10 rather than 40 hours per week. Many studies have been publish since in both school and home environments both have reported that cognitive functioning, language skills, and academic performance approached or exceeded normal levels when the children received at least two years of intensive behavior analytic treatment (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005).

While there are clearly several treatments for individuals with autism, programs that include ABA have the most empirically driven data to support their continued use. However, one reported downfall to ABA treatments such as DTI is that training staff to implement this method can be difficult to learn and to teach. It has been reported that very little training is provided to staff who implement DTI prior to them working one-on-one with a child with autism (Kramer, 2008). Reported challenges for staff were situations in which they were implementing DTI while a child with autism while they were presenting maladaptive behaviors (Begeny & Martens, 2006). A general lack of understanding of autism was also noted to be a main concern of parents about their staff (Howlin, et at., 2009). At study provided by Sulzer-Azeroff, Fleming, Tupa, & Homad (2008) found that choosing objects for training needed to include not only experts in the filed of ABA but parents to meet the need of the child and family (Sulzer-Azeroff, Fleming, Tupa & Homad, 2008).

The two areas of focus for training is for parents, staff, and professional to be knowledgeable and skilled in behavior intervention and training procedures that are effective and flexible enough to ensure preparation to implement behavioral intervention (Sulzer-Azaroff, Fleming, Tupa, & Hamad, 2008). Training methods that introduced the key concepts of ABA, a description of autism, as well instruction in how to practice implementing behavioral plans were reported to produce more competent staff (Kramer et al., 2008). The authors did note that further research in this area is needed to ensure children with autism are receiving intervention as it was designed by competent staff (Kramer et al., 2008).

Training Models to Teach Staff to Implement Discrete Trial Instruction

Lecture and Test Training Model.

A commonly used training method is the lecture and test model (Hillman, 2009). It is used in many home and school programs to training staff to implement DTI with children with autism. This model is broken down in three sections. The first section reviews a basic background of autism, applied behavior intervention, and discrete trial instruction that ranges in hours. The second section includes modeling, practicing with peers, and at the end of another eight hours a cumulative test is given. The expectation of an 80% accuracy rate is expected to pass. The last part of this model includes 16 hours of observation of an experienced staff (who has been in the field at least two months) (Hillman, 2009). Moor and Fisher (2007) use a lecture model with written materials to training staff on acquisition of functional analysis methodology. In the power point used they included a history and rational of ABA, specific procedures, and examples of staff

demonstrating intervention with a child. Several exemplars provided real sessions with clients. During probes all participants scored 95-100% on the written test directly after the lecture. After watching video modeling and then demonstrating the skill set with the trainers were reported over 80%. They also incorporated video vignettes with in the study to share what it looks like to work in the field with "real clients". The staff was asked to perform a session with a child with special needs where they were asked to perform a specific skill sets based on the training received. The authors noted that the lecture with the test resulted in adequate performance. Whereas the combined lecture test and video vignettes resulted in better results. The authors recommend further examples and generalization be considered for future research (Moore & Fisher, 2007).

A similar study by Wallace, Duney, Mintz-Resudez and Tarbox (2007) reported that accurate training involved reading materials, watching a video tape, and then taking a written test. The authors used a multiple baseline across participants to access the effect of training. The three participants in the study had no previous experience with ABA and had not taken a course in behavioral analysis but were willing to spend additional time being trained. The authors noted that no participants scored above 50% correct after workshop in a simulated assessment. However after feedback and generalization probes in a natural setting the staff showed a high degree of proficiency (Wallace et al., 2004). They also noted that once the staff demonstrated proficiency they did not require continued performance feedback. A limitation reported was that two of the three participants were not available for generalization proves. In addition the study only took data on some of the component skills needed to implement the ABA program. The

authors recommend expanding the component skills and generalization across populations (Wallace, et al. 2007).

Kraemer, Cook, Browning-Wright, Mayer, and Wallace (2008) looked at specific but brief training to improve the quality of an ABA plan. Their method of training included six hours that was complied of a one day training on the legal understanding of programs, two hours on key concepts and a three hours training on ABA. After the lecture component the researcher's role played activities to support the staff with as close to natural examples (Kraemer et al., 2008). What they found with the lecture test model was that all of the individuals who had prior knowledge of ABA as well as had taken course in ABA in the last year demonstrated improvement in skills. Where as staff without the pervious skills set were not represented in this study.

It was also noted that staff reported training in the field with children with autism was more effective and produce generalization compared to the training received in a lecture test classroom format (Kraemer, et al., 2007). The current lecture and test model is also reported to be too cumbersome by staff and has resulted in high turnover due to the staff not having the support or skills needed to implement treatment effectively (Leblanc, Ricciardi & Luiselli, 2005).

Distance Learning Training Models

Distance learning online was designed to teach staff anytime, anywhere (McCollum & Hemmeter, 1997). This program was designed to teach staff to apply behavioral principles and it is reported to be able to provide an expertise in ABA. With this model there is online reading material and testing, as well as the ability for the staff

to ask questions at anytime. The 74 staff in this study reported outcomes based on a Likert scale. The questions on the scale included questions on staff satisfaction. Thirty-six staff reported to strongly recommend this model, 27 staff stated that they would recommended this training model, and 11 stated they would not recommend this type of training (McCollum & Hemmeter, 1997). It was reported by staff that this distance learning program could be "over-burdensome" due to the complexity of training (McCollum & Hemmeter, 1997). Sulzer-Azaroff and collages reported that an ideal approach when developing distant learn is to developing competency by isolating each objective, compiling a list if essential instructions and objectives and offering feedback. This method called the Delpi Method was used to develop a distance learning program that flexible alternative way to access ABA training. The Delpi Method and was originally used to determine needs for the aircraft industry. It has been used in many fields such as technology, education by collecting and distilling knowledge from a group of experts by providing feedback (Sulzer-Azaroff, Thaw, & Thomas, 1975). This method included four phases; 1) gathering a pool of specialist educated in the field of education and autism and then compiling a list of items to teach, 2) ask respondents to produce a few essential instructional objectives (i.e. competencies), 3) rate the list and add new items as mastered, and 4) rate the list of new items (Sulzer-Azaroff, Fleming, Tupa, & Hamand, 2008).

This method was used in a research study to identify what information and skills staff and parents needed to be able to work with children with autism. What was found

with the outcome was the method was helpful with determining a curriculum of what to teach (Sulzer-Azaroff, Fleming, Tupa, & Hamand, 2008).

Sib and Strumey (2007) reported that when using a distant learning program to teach staff to implement DTI the program must include feedback, modeling, and rehearsal. The purpose of their study was to evaluate the indirect and direct effects of DTI on teaching children with autism. The main focus was to provide internet-based instruction emphasing behavioral intervention. The list of items to teach through the program was compiled by expert scholars, researchers, researched based curriculum, and program administrators (Sib & Strumey, 2007). More than the efficacy on training staff the authors found tools to re-fine the curriculum as well as who should compile the list of skills to be taught.

Videotape Modeling Training

Moore and Fisher (2007) used a videotape modeling method of staff training. In this training method, new staff would watch videos of experienced staff implementing DTI. It was reported to result in a mastery level of performance eight out of the nine times it was introduced, whereas neither lectures nor partial video modeling procedures were as effective (Moore & Fisher, 2007). This model saw best results when there were a wide range of examples and situations for the staff to learn from (Moore & Fisher, 2007). However, it was also reported that a lack of diverse examples resulted in staff not having an adequate opportunity to train in specific areas. This was noted to be a concern with generalization of skills taught by video modeling to actual sessions (Iwata et. al., 1994).

Moore and Fisher reported it as being an effective tool, and needing further research on generalization (2007).

Catania, Almeida, Liu-Coustant, and Reed (2009) used a video tape modeling to training staff to criterion to implement DTI. They used a multiple baseline across participants. The authors found during baseline performance ranged from 12% - 65% where after the accuracy was measured at a range between 85%-98%. The design included 10 DTI instructional skills. During baseline a brief explanation was given to the participants. After the study began the sessions were video taped. Within 10 minutes after the session the training and staff watched of the tape while feedback was provided. The authors found that using the video tape to provide feedback that a higher degree of accuracy was noted and maintained in follow-up generalization probes.

Abbreviated Feedback Form

The abbreviated feedback method implements a task analysis of the skills one needs to successfully implement a task or job that has multiple steps involved, such as DTI. The abbreviated form is expected to help the supervisors and staff to determine the instructional goals and objectives; define and describe in detail the tasks and sub-tasks that the student will perform; specify the knowledge type (declarative, structural, and procedural knowledge) that characterize a job or task; select learning outcomes that are appropriate for instructional development; prioritize and sequence tasks; determine instructional activities and strategies that foster learning; select appropriate media and learning environments; and to construct performance assessments and evaluation (Jonassen, Tessmer, & Hannum, 1999). The AFF was also shown to be effective and

result in positive behavior change with personal management and applied settings (Alavosius et al., 1986).

Authors Kraemer, Cook, Browining-Wright, Mayer, and Wallace (2008) researched the effects of training on the use of a behavior support plan with a plan quality evaluation guide with autism educators. The goal of their research was to assess the effects of a specific and brief training to improve the quality of the behavior plan (Kraemer et al., 2008). Measurements involved six key concepts that were complied by a comprehensive search of behavioral interventions. The training involved feedback to the participants based on performance. The participants did not receive formal instruction prior to the study. What the authors found was that competence can improve with rather low cost and time-efficient training (Kraemer, et al., 2008). They also noted that an added improvement was when staff came in with a basic understanding of ABA. The authors recommended that an added improvement was when the trainees evaluate and rate themselves. Over all the study demonstrated that staff can benefit from 6-hours of training with performance based feedback increasing the delivering of evidence-based practice (Kraemer, et al., 2008).

A study by Wood, Luiselli, and Harchik on training instructional skill with paraprofessional services providers at a community-based habilitation setting (2007) added to the limited research on community-based training of direct-care personnel. In their study they found that by behavioral rehearsal and performance feedback under a natural condition three of the four staff were able to obtain near 100% instructional accuracy (Wood, Luiselli, & Harchik, 2007). During baseline the staff was presented

with the procedural form that included 13 procedural steps of behavioral criteria without explanation and then asked to conduct training. During baseline observations, the trainer recorded the performance of the participants but did not deliver feedback or share results. Training following baseline included a detailed review and feedback from the form as well as modeled demonstrations of correct performance. Then the participants rehearsed the steps and performed again during the next observation. The authors used a multiple baseline design to demonstrate evaluation across staff allowing for a causal inference from the design. There was a change a staggered change across time with all participants strengthening the casual inference. The authors found that the 4 participants improved their implementation of behavioral instruction immediately following training, and 3 maintained performance over multiple observations sessions (Wood, Luiselli, & Harchik, 2007).

Lafasakis and Sturmey (2007) implemented research on training parent implementation of DTI and the effects on generalization of parents teaching and child correct responding. The authors used three parents in a multiple baseline design measuring parent's ability to learn to implement DTI in an effective and efficient method with their children. Their focus was on instructions, modeling, rehearsal, and feedback to produce generalization to teaching DTI with children they have not been taught to work with prior (Lafasakis & Sturmey, 2007). The procedure they used included 10 components of DTI teaching. Each session lasted about 5 minutes. Sessions where video taped and scored later. Although there was a change demonstrated from all three parents is was not clear which of the three methods of instruction modeling, rehearsal, or

feedback produced the increase. The authors noted that future research should conduct a component analysis for the behavioral training skills (Lafasakis & Sturmey, 2007).

Reid, Parson, Lattimore, Towery, and Reade (2005) completed a research article on improving staff performance through clinician application of outcome management using a feedback and modeling procedure to teach on the job training to staff. The training targeted competency-based training and provided on-the-job training to improve prompting procedures of three staff who work with students with severe disabilities. They used a performance checklist that reflected target 13 behaviors needed to implement prompting procedures. The authors used a multiple baseline design with the training system across three staff and found an average increase of 80% (Reid, et al., 2005). The authors recommend that a continued research is need on maintaining the procedure over time as well as what degree it will generalize across different environment as and other staff.

Due to the reported success seen through the feedback model and the recommendation for continued research and replication across people and environments, this study is proposing to meet those request by using a systematic replica of the Leblanc, Ricciardi, and Luiselli study across people, as well as see if the method has the same results in new environments (2005) study.

In the Leblanc, Ricciardi, and Luiselli, (2005) study, in the first intervention session with each participant, the trainer reviewed the discrete trial instructional skills checklist from the abbreviated feedback form. Immediately following sessions, the trainer gave performance feedback for each of the 10 discrete trial instructional skills. The

feedback for skills demonstrated correctly 100% of the time consisted of praise and approval. When a skill was not exhibited correctly 100% of the time, the feedback entailed clarification and behavior specific feedback. During feedback interactions, the trainer answered any questions posed by an assistant teacher. The training required about 8-10 minutes for the trainer to implement the performance feedback intervention. Training with the assistant teachers terminated when each demonstrated the discrete trial instructional skills correctly 90% of the time or greater during two consecutive sessions (Leblanc, Ricciardi & Luiselli, 2005). The authors used a multiple baseline design to evaluate the design across teachers. What was found is that the abbreviated performance feedback was an effective method in improving DTI skills of paraprofessionals. What the authors did note is that the skill set of the staff have a direct impact on the education of children with autism (Leblanc, Ricciardi & Luiselli, 2005).

Reliability

Leblanc, Ricciardi, and Luiselli, (2005) reported that prior to the use of the AFF with the three assistant teachers that each displayed skill is less than 50%. Prior to training, assistant teacher 1 scored at M = 43%, assistant teacher 2 scored at M = 32%, and assistant teacher 3 scored at M = 40% baseline. After training with the abbreviated feedback form, each of the assistant teachers met criterion of 90% or greater after two consecutive sessions. At the 11-week follow up sessions, all assistant teachers maintained skills at 90-100%.

Validity

According to Leblanc, Ricciardi, and Luiselli (2005) the AFF has strong validity when used to evaluate assistant teacher skills needed to learn DTI. This training method has been used and studied in schools, with direct staff, and teachers. The AFF was also used in settings combined with other methods such as video feedback, modeling, and scripting. In these settings, it was noted to result in rapid acquisition of the targeted skills (Lavie & Sturmey, 2002; Moore et al., 2002).

Summary

With all the research that supports ABA, there are still concerns about the quality of intervention that is being provided. A survey found that most of the concerns stem from the skill set of staff implementing the intervention (Tri-Counties Regional Center, 2007). The state funding agency is required to provide an executive summary report. This report suggested that families are less than satisfied with the quality of in-home behavioral intervention (2007). Some parents have suggested that staff members might not have an expertise in autism or are not informed about the approach they are using when implementing an intervention method (Vismara et al., 2009). Another variable noted by this author was the lack of quality supervision provided by supervisors (Vismara et al., 2009). Other concerns were with barriers to intensive treatment such as boundary disturbances, parental confusion regarding general behavioral principles, or family dysfunction (Hillman, 2009). With the continuing rise in diagnoses of autism and the difficulty locating and funding the services of an appropriately trained staff, the

likelihood that families will continue to report dissatisfaction is likely to continue (Sturmey, 1998).

The crucial need for qualified staff implementing effective interventions brings with it an interest not only in improving staff training and performance, but in reconsidering how staff is supervised so as to insure quality assurance (Reid et al., 2009). With proper supervision, the staff members implementing interventions are likely to have more complete understanding of the approach (Gordon et al., 2011). There is very little research on effective training models for supervisors training staff in the behavioral literature. There is far more about the number of hours recommended or the types of methods to use such as; PRT, verbal behavior, or DTI. Some of the method of teaching staff to implement these types of ABA interventions is with feedback methods such as verbal feedback in situ or with videotape feedback. A commonly used method to train staff to implement DTI is with a test and lecture model. A newer method of training being explored is distance learning giving an online way of access information in rural area with fewer resources.

Aside of parents and staff reporting that there is a need for more training they are also asking for additional support through supervision. In this study two methods of training staff to implement DTI were evaluated. DTI was chosen as a method of ABA because it is the most widely requested type of intervention with children with autism. The lecture test model was chosen as one of the method of training staff due to the wide use of this method. The AFF was chosen to compare with the lecture test model, due to the reported significant set increase reported by authors that use the method in school

settings. In addition the AFF was said to be less cumbersome of a training type by staff. By training staff through an abbreviated feedback form, supervision is built in and can support interventions with outcome management (Leblanc, Ricciardi, & Luiselli, 2005). With the lecture test model supervision is done in the home once the intervention has started. Maurice, Green, and Luce report that appropriate supervision is one of the most important components to develop staff into well trained behavioral analysts (1996). Jensen, Parsons, and Reid report that to improve staff performance you need to provide a clear definition of what is expected of staff and systematically monitor their performance for the desired improvement (1998). Beyond this, this study looks to add to the limited amount of research on how to train staff to implement DTI. In the next chapter the methodology of this study will be discussed.

Chapter 3: Research Methods

Introduction

The purpose of this chapter is to provide a summary of the research design, including the procedures for recruitment, data collection, and analysis. This chapter provides a review of the facilities, apparatus, and the researcher. Additionally, information on how ethical responsibility will be taken into consideration to ensure the respect and concern for welfare of the individuals in this study. This chapter also included information on the location and time period in which the study will be conducted, the sort of equipment and materials that were used in the study, and the necessary characteristics of the experiment. An explanation of how the staff was trained monitored, the selection criteria, and the process of informed consent will be proved in this chapter. Finally, the validity of the design and threats to validity will be addressed.

Research Questions

The research question for this study:

When using the AFF as a method of training staff to implement DTI, will they demonstrate higher skill acquisition compared to baseline?

Hypothesis

The hypothesis deriving from the research questions for this study is as follows:

> H_0: Staff that participates in the abbreviated feedback method when learning to implement Discrete Trial Instruction will not demonstrate an increased skill acquisition from baseline.

H_1: It is expected that staff that participate in the abbreviated feedback method of training when learning to implement Discrete Trial Instruction will demonstrate an increased skill acquisition from baseline.

H_{02}: Staff that participates in the control group receiving the lecture test training model when learning to implement Discrete Trial Instruction will not demonstrate an increased skill acquisition from baseline.

H_2: It is expected that staff that participate in the lecture test training model when learning to implement Discrete Trial Instruction will demonstrate an increased skill acquisition from baseline.

Research Design Rationale

The experimental design used in this study was a single-subject, AB design. The AB design allowed for evaluation across treatments and thus a stronger conclusion when comparing hypotheses. This design is a true experimental design because it allows for causal inference and is extremely useful for evaluating situations where a comparison between interventions is needed. In an AB design there is a baseline phase "A" and a treatment phase "B." If there is *no* change in the B phase from A, the treatment is considered to have no effect; if there *is* a change, and then the treatment had an effect and would support the notion that there was a functional relationship between the independent and dependent variables.

Value of using the AB design is that it may suggest strong experimental control, does not require any reversals in an intervention condition, and does not require a return to a baseline condition to demonstrate experimental control. The measurement and

comparison of treatments types (Cooper et al., 2007). An additional advantage of using the AB design is that it is easy to read and communicate to others. Limitations of the design are in the area of performance levels that must be monitored across baseline and treatment; in addition, when reviewing records data may be inaccurate or missing information. In addition this design is subject to possible confounding variables making it hard to have a strong conclusion.

In summary the single-case designs have been used in Psychology and found very beneficial in educational settings (Cooper, et at., 2007). The experimental research designs offer an avenue to more closely examine components of research. The experimental standards relied upon internal and external validity, replication, and causal relationships and are present in the AB design. The researcher provided detailed operational descriptions of participants, settings, and processes for participant selection as well as a time-series analysis of change in dependent variables (the behavior) across systematic manipulation of the independent variable (the treatment).

Leblanc, Ricciardi, and Luiselli evaluated an abbreviated performance feedback intervention as a training strategy to improve DTI implementation of children with autism by three paraprofessional staff at a specialized day school. The feedback focused on 10 discrete trial instructional skills demonstrated by the staff during teaching sessions. Following sessions, staff received verbal specific feedback from the trainer. This was demonstrated in an AB design, where staff rapidly acquired the discrete trial instructional skills with intervention. For the purposes of the study the same method of intervention was used, however the data used was from archived files wit the permission of the

participating staff. The data were analyzed and graphed using an ABA design of analysis. The original data and training occurred in the home rather than the school where the Leblanc et al. (2005) study occurred.

Participants

The participants were selected from a company that provides behavioral services to children with autism. The individuals who worked for this company had a bachelor's level education and are English speaking. The average age of the staff was 22 years; they were primarily White or Hispanic. The staff that is hired to work at this company provides DTI as well as other ABA methodologies with children with developmental disabilities. The staff who was selected to participate in this study will also be employees of the company where the study is taking place. Individuals who do not have a degree in psychology, liberal studies, or child development or who do not have a BA or BS degree were excluded from the study. If the individuals cannot read or understand the informed consent form, they will be excluded from the study. By choosing the first four participants for the two groups that meet all of the expectation, bias was avoided in participant selection for this study.

Sample

Single-subject designs may involve only one participant, but typically include three to eight participants (Horner et. al., 2005). In the study the staff participants included the first three individuals for each group who have not implemented DTI (answer no to all questions in the AFF see Appendix E), have not been previously trained

using the abbreviated feedback form, and have signed the consent form. There were four participants in this study.

Recruitment

Recruitment began after IRB approval was obtained (10-31-120016221). The evaluator prepared a recruitment flier (please see appendix D) for the direct staff to request permission to analyze the data from the performance task analysis. This was done for both sets of staff that were trained using the AFF and the lecture test model. The flier states that in each case participation in the study is optional and that it will in no way effect a staff member's position with the company in a positive or negative way. It will also state that if at any time they would like to discontinue their participation in the study, they are free to do so. The evaluator handed out the flier at a regularly scheduled meeting with the company and explains that, if anyone was interested, the evaluator will stay after to review expectations or the consent form. The fliers offered a brief explanation of the study.

Setting

The setting where the comparison data were analyzed was in a private office. The researcher was given access to the videos and data collected by the program supervisors whom had staff that consented. When the evaluator completed the compiling the data for analysis the data and videos were given back and placed the individual's files. The room where the analysis occurred included a table, chair, computer for viewing tapes and compiling and analyzing data. The video tapes were set up so only the researcher could view them to protect the privacy of the consisting staff.

Procedure

The abbreviated feedback method is used to implement a task analysis of the skills one needs to successfully implement a task or job that has multiple steps involved. According to to Jonassen, Tessmer, and Hannum (1999). The abbreviated form is expected to help the supervisors and staff to determine the instructional goals and objectives; define and describe in detail the tasks and sub-tasks that the student will perform; specify the knowledge type (declarative, structural, and procedural knowledge) that characterize a job or task; select learning outcomes that are appropriate for instructional development; prioritize and sequence tasks; determine instructional activities and strategies that foster learning; select appropriate media and learning environments; and to construct performance assessments and evaluation (Jonassen et al.,) reported that the rationale for using a task analysis such as the AFF is to classify tasks

according to learning outcomes, prioritize tasks and choose those that are more appropriate to *train,* as well as to identify and describe the components of the task (1999).

This study was used to continue building upon research on the effectiveness and efficiency of this training method introduced by Leblanc and colleagues (2005). However, this study focus on a different training environment (home vs. school) and with home program staff rather than school paraprofessionals. The results of this study can be generalized only to staff implementing DTI in home and with staff who work in home programs with children with autism. The purpose of this study was to build upon the current research provided.

Social Validity Scale

The data collected from the social validity scale can be added to the general practice of using the abbreviated feedback form. Learning to implement DTI has been reported to be difficult by staff as well as by supervisors who teach this method. The participant's consenting to the researcher reviewing there data will also be asked to fill out a social validity scale on the training method they received at their time of hire. The social validity rating scale included 26 Likert type questions where 6 were identified as "high acceptability." The average scales for the assistant teachers included (+/standard deviation) per item for assistant teacher 1, 5.8 (+/0.5) for assistant teacher 2, 4.6 (+/-0.6) for assistant teacher 3, 5.2 (+/0.8).

The social validity scale is not standardized across the field. It was specifically designed for the purpose of this study by the researcher. However, using a social validity scale to ask these types of questions offers the researcher an opportunity to understand if

the AFF is favorably perceived by staff. If the staff reports are favorable towards the abbreviated feedback from, continuation of the use and exploration of the model is more likely (Cooper et al., 2007).

With regards to support for children with autism, there was one major company that had a formal training procedure as well as offices for training in the area where the study was to be conducted. When the evaluator approached the company and shared the prospectus, the owner of the company was interested in the training opportunity and research being done out the offices or family homes. The evaluator explained that research could not start until IRB consent was obtained. Additionally, a formal letter was given to the clinical director of this company to request permission to conduct the study of analyzing the data and expressed that they would take responsibility for the research. It will be explained that the study would be done to determine if abbreviated performance feedback is a more effective and efficient way of teaching direct staff to implement DTI compared to the lecture test model.

Data Collection

The data analysis was taken from archive data from on the consenting participants. The original data collected by the participant's supervisors. The data on performance in the absence of feedback collected prior to training will be considered baseline. The training phase will include the program coordinator (staffs supervisor) providing the participants with a copy of the abbreviated feedback form, allowing them to review it, and giving them a better understanding of how they are expected to implement DTI. Each week the supervisor observed the staff implement DTI while scoring them

using the abbreviated feedback form. After the 5-8 minute observation (some video taping was also done), the scores were reviewed by the program coordinators with the direct staff, so they know where they need to improve and what they are doing well. When the scores reach a 90% accuracy rate and are stable after two consecutive sessions, the training will be complete. The feedback form was used at baseline, during treatment, and again as a follow up measure after one month. The feedback form was used for both the staff who were trained using the abbreviated feedback from and the staff who were trained by the lecture test model as baseline data collection, then again throughout the training. However the lecture model group did not receive the feedback from the form.

Baseline

Prior to training, the staff had basic introduction to autism, and how to take data on behavior concerns, as well as an introductory to applied behavior analysis. They did not have practice or exposure to the abbreviated feedback form. In addition baseline data were taken during the staff's shadowing hours prior to them receiving supervision or feedback. While they were implementing DTI, a program coordinator observed for 5-8 minutes and note how many of the items were or were not correct from the abbreviated feedback form. Baseline data were collected on their performance in implementing DTI as derived from the abbreviated feedback form. They did not receive any feedback regarding their performance on the abbreviated feedback form; this score will be considered the baseline. For the abbreviated feedback form, please see Appendix B.

Data Collection

All of the data were collective from the archive files with the staff who gave permission. The evaluator used this data to score at a later time for the study as well as inter-observer agreement from the original score the program coordinator collected. The program coordinator collected. The program coordinator collected data and noted if the direct staff presented the correct response as stated on the abbreviated feedback form. Staff responses were recorded as being either correct or incorrect o the data sheet or then graphed. At the end of each session, the correct responses were tallied up and divided by the opportunities to gain a percent to represent the accuracy as measured by data. Feedback was given only to the abbreviated feedback group and not the lecture test model.

Interobserver Agreement

The program supervisor and evaluator scored both of the groups' performance using the abbreviated feedback form. The data were collected by observing video tapes attained from the DTI session. Interobserver agreement was based on a comparison of the data and both observers will agree on a score. Inter-observer agreement (IOA) will be calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100. IOA is a method used to ensure that the data are being collected correctly by the program supervisor. Only 30% of the sessions are required to be observed for IOA and to have IOA occurring at a rate of 80% or greater. If IOA fell below 80% before the following week's session, the program coordinator will

need to meet with the researcher to do training with the form until their IOA reaches 80%.

Data Analysis

The data were be analyzed visually by looking variability, level, and trend both within and between the phases of the change in the baseline and treatment. Data were continuously collected on the targeted behaviors then archived. This allowed the evaluator to identify if the intervention was resulting in more correct responses compared to baseline as well as competency with implementation of DTI. In addition the close data monitoring allowed for direct contact with the behavior under investigation (Cooper, Heron, & Heward, 2007). The data represented is the percentage of correct responses on the abbreviated feedback form. This level of contact with the data maintained though the summary graph. The properties that were used to identify and monitor the data through analyzing the variability, the level, and trend. The variability notes how spread out the scores are from each other. The level of data relates to the position of the data set taken from the Y-axis. If the data were on the top section they would be considered at a high level, where if they were in the middle section it a moderate level, or low section, low level. Lastly the trend data showed the direction the data were going when looking at the graph. You can have a increasing, decreasing, or zero trends (Cooper, Heron, & Heward, 2007). This analysis of the data will allow for a better understanding if there is a relationship between the staff's scores and the use of the AFF compared to the test lecture model.

Debriefing Procedure

After all data have been collected and analyzed, the researcher will make available the general outcome information with participant anonymity protected. In addition the participants will be able to offer their input and impression.

Ethical Considerations

The consent and confidentiality will be addressed through the informed consent documents that will be explained and signed during the meeting with the researcher after the participants express interest. (Please see Appendix A and F for consent forms, emergency and contact information, as well as HIPAA compliant notice of Privacy Practices). The researcher will comply with both Internal Review Board and HIPAA guidelines for consent and disclosure. Appendices B (The Abbreviated Feedback Form) and C (the social validity questionnaire) list the documents that will be completed, including a client registration with demographic and emergency contact information, Notice of Privacy Practices, HIPAA compliant release of information authorization and request (optional), permission for disclosure to supervisor, permission to video/audiotape sessions for research reliability, and IRB compliant Consent to Participate in Research. It will be explained in the consent form that the researcher and the dissertation committee will have access to the raw data at any time. Once the data have been entered and intervention has been terminated, the researcher will provide results to the participants who are interested. The data will be stored under lock and key for five years and will then be kept by the employer of the staff who is responsible for the raw data. The graphs will be stored under lock and key for five years and then will be destroyed.

Summary

The main focus of this study was to find out if the use of the AFF resulted in a mastery level implementation of DTI compared to staff that were trained using the lecture test model. The focus of this chapter was to explain this method of this study and to take the information from the research that we have from school and parent training programs, and systematically apply it to home programs. The literature review explained that at this time research around intensive intervention has concerned itself with determining the correct amount of service hours provided the best curriculum, and the optimum age for affecting the greatest impact on learning and increasing intelligence IQ. Additionally it was noted that increased attention has been paid to evaluating staff training methods due to the need for high quality control of these programs (Gordon et. al., 2009). The largest reported barrier to effective behavioral intervention was reported to be the difficulty of locating staff and training them. The literature review provided information on staff training, and why the AFF is reported to be more cost effective, efficient, and socially valid compared to the lecture and test DTI training model. Chapter 4 will present the findings and results from data analysis to answer the research question.

Chapter 4: Findings and Analysis of the Data

Introduction

The purpose of this study was to examine the efficacy of using the AFF in training staff to implement DTI when compared to a lecture test model alone. A single subject AB design was used to compare instruction types. Data will be analyzed, graphed, and interpreted in this chapter. The comparison data were analyzed in a private office in a company that provides DTI to children with autism. DTI was implemented in the home of the individuals with autism. The direct staff provided the DTI programming, while the program coordinator collected baseline data and then provided supervision and/or feedback from the AFF. The video recorder was on during implementation of DTI during training and the feedback form was filled out after the session. I was given access to the videos and the data that were collected by the program supervisors.

The first four participants who met all of the criteria were selected to avoid preference and to avoid bias. The data analysis was performed on archived data from the consenting staff. The original data were collected by the participants' supervisors. The data on performance in the absence of feedback collected prior to training or feedback was considered baseline. The data were analyzed on the baseline and training phases, from both the lecture test model and the abbreviated feedback groups. Data from both groups were scored by counting how many of the total skills were acquired from criterion (i.e., 30 correct) for all four consenting participants. Prior to reviewing the data sheets, the researcher scored the videos taken during baseline and training, then compared the researcher’s data with the program coordinators data for inter-observer reliability.

Interobserver agreement (IOA) was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100.

The four consenting staffs' data were coded for privacy. The participants and their relative training models were coded as follows: Participant 1 (P) was trained using the AFF), Participant 2 (P2) was trained using the (AFF), Person 3 (P3) was trained using the lecture test model (LTM), and Participant 4 (P4) was trained using the lecture test model (LTM). Each participant's raw data were collected and graphed on a data summary sheet and then summarized on an AB design allowing a visual analysis of the variability, level, and trend.

Data Analysis

Table 1 provides information on the experience of the direct staff with DTI prior to receiving either training. Participants were numbered and labeled as P1, P2, P3, and P4. Table 2 provides a visual analysis of the mean:

Table 1

Experience of Staff with DTI

Direct staff	Experience working with children with autism (mo.)	Experience with DTI
P1 (AFF)	12	0
Participant 2 (AFF)	6	0
Participant 3 (LTM)	11	0
Participant 4 (LTM)	18	0

Summary of Table 1

Table 1 indicates that the direct staff that consented to allowing the researcher to observe and analyze their data had no experience with DTI and all had no less than 6 months and no more than 12 months experience working with children with autism. In addition none of the consenting staff whose data were analyzed had exposure to the lecture test model or the AFF prior to the study. This group allowed for a similar baseline and skill set for comparisons to help control for confounding variables to support a stronger conclusion. The data in Table 2 provides information on P1 (AFF) and include baseline and treatment scores, as well as an analysis of the raw data.

Table 2

Participant One (AFF)

Observation	Baseline	%	Observation	Treatment	%
1/7/13	12/30	40	1/18/13	15/30	50
1/8/13	15/30	50	1/25/13	21/30	70
1/10/13	11/30	36	2/1/13	23/30	76
			2/8/13	28/30	93
			2/15/13	29/30	96
			2/22/13	28/30	93

Summary of Table 2

Table 2 indicates that in relation to the research question and the hypotheses (H01) a strong relationship was found between the data obtained from baseline and the treatment phase when training staff to implement DTI using the abbreviated feedback form. When reviewing participant 1(AFF) the average baseline was 42%, ranging from

11-15 correct scores out of 30 on the task analysis. When data were analyzed during the treatment phase, P1 (AFF) correct scores ranged from 15-29 correct out of 30 tasks on the task analysis. After P1 (AFF) received feedback on correct scores and incorrect scores following the observation, the scores ranged from 50% in the early phase of training to a 96% in later phase of training. The data stabilized at an average of 94%. The data in Table 3 provides information on P2 (AFF) and includes baseline and treatment scores, as well as an analysis of the raw data.

Table 3

Participant Two (AFF)

Observation	Baseline	%	Observation	Treatment	%
1/8/13	15/30	50	2/8/13	17/30	56
1/9/13	14/30	46	2/15/13	22/30	73
1/11/13	14/30	46	2/22/13	26/30	86
			3/1/13	28/30	93
			3/8/13	30/30	100
			3/15/13	28/30	93

Summary of Table 3

Table 3 indicates that in relation to the research question and the hypotheses (H1), there was a strong correlation between the data obtained from baseline and in response to treatment when using the abbreviated feedback form. The staff's average baseline was 47% during the training phase. P2 (AFF) received correct scores ranging from 14-15 correct out of 30 tasks. During the treatment phase, P2 (AFF) received feedback on the

correct and incorrect scores on the task analysis and obtained scores ranging from 17-30 tasks correct. The scores moved from 56% in the early phase of training to a 100% in later phase of training. The data stabilized at an average of 95%. The data in Table 4 provides information on P 3 (LTM) who was trained using the Lecture Test Model (LTM) and includes baseline and treatment scores, as well as an analysis of the raw data.

Table 3

Participant Three (LTM)

Observation	Baseline	%	Observation	Treatment	%
1/4/13	15/30	50	1/18/13	16/30	53
1/7/13	12/30	40	1/25/13	18/30	60
1/10/13	15/30	50	2/1/13	20/30	66
			2/8/13	20/30	66
			2/15/13	23/30	76
			2/22/13	22/30	73

Summary of Table 4

Table 4 indicates that in relation to the research question and hypothesis (H2), there were differences in data between baseline and treatment, but it was not as significant. However it provided a strong conclusion for hypotheses (H2). The staff's average baseline was 46%, ranging from 12-15 correct out of 30 tasks on the task analysis. During the training phase and after weekly visits from the program coordinator and asking questions about the program, P3 (LTM) scores moved from an average

baseline of 46% to a 56% in the early phase of training. P3 (LTM) correct scores on the task analysis ranged from 18-20 correct averaging at 76% in the later phase of training. The data stabilized at an average of 72%. The data in Table 5 provides information on Participant 4 (P4) who was trained using the Lecture Test Model (LTM) and includes baseline and treatment scores, as well as an analysis of the raw data.

Table 4

Participant Four (LTM)

Observation	Baseline	%	Observation	Treatment	%
2/1/13	14/30	46	2/22/13	16/30	53
2/8/13	13/30	43	3/1/13	16/30	53
2/15/13	13/30	43	3/8/13	18/30	60
			3/15/13	20/30	66
			3/22/13	22/30	73
			3/29/13	21/30	70

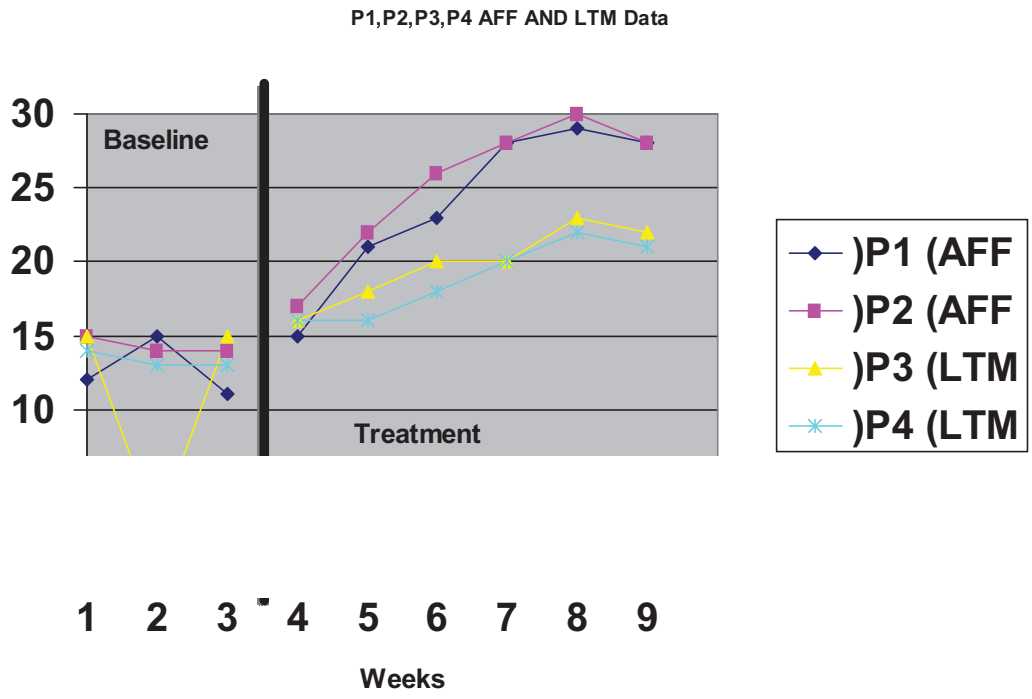
Summary of Table 5

Table 5 indicates that in relation to the research question and the hypotheses (H2), there was a difference in data between baseline and treatment. There was an increase between the data obtained from baseline and in response to treatment when using the lecture test model. The participant's average baseline was 44% with correct scores ranging from 13-14 out of 30 correct tasks. During the training phase and after weekly visits from the program coordinator and asking questions about the program, the

participant moved to scores ranging from 53% in the early phase of training to 70% in later phase of training. The correct scores during treatment ranged from 16-22 out of 30 tasks. The data stabilized at an average of 70%. The data in Table 5 provides information on Participant 4 (P4) who was trained using the Lecture Test Model (LTM) and includes baseline and treatment scores, as well as an analysis of the raw data.

The data in Figure 1 provide a visual summary of the mean to compare the magnitude of the effect from baseline to treatment of both the lecture test model and the abbreviated feedback form, to provide a visual analysis between baseline and treatment.

Figure 1



The mean was extracted and plotted on both. Both P1 and P2 baseline averaged at a range of 42% to 47% after three data points. When P1 went into the treatment phase B using the abbreviated feedback form, the trend was a steady and steep upward slope with only slight one-point variability on week eight. During the last three data points, P1 data averaged at a 94% accuracy rate. A significant change in the data from baseline compared to treatment indicates a strong correlation between baseline and treatment. When P2 went into the treatment phase B, similar to P1, the trend demonstrates a steep upward slope with some slight two-point variability in weeks seven and nine. P2 data were considered stable after three data points averaging at a 95% accuracy rate. Both P1 and P2 data improved significantly from baseline, which supports the H01 hypotheses that when using the AFF as a method of training staff on DTI implementation, staff will demonstrate a higher skill acquisition compared to baseline.

Both P3 and P4 baselines ranged between 44% to 46% after three data points. This was a similar range for P1 and P2. When P3 went into the treatment phase B using the lecture test model, the trend was a steady and gradual upward slope with some variability across the last five weeks. During the last three data points, P3 data averaged at a 72% accuracy rate. When P4 went into the treatment phase B, there was a flat trend line followed by a steep upward slope, then slight drop in week eight. P4 data were

considered stable after three data points averaging at a 70% accuracy rate. A 70% accuracy rate again would suggest further training needed to meet the 85% accuracy rate. Both P1 and P2 data improved from baseline, which supports the Ho2 hypotheses that when using the lecture test model as a method of training staff on DTI implementation, staff will demonstrate an increase from baseline.

Both P1 (AFF) and P2 (AFF) improved from baseline, supporting the Ho1 hypothesis. They exceeded the 85% accuracy rate expected from staff that implement DTI. P3 averaged at 72% and P4 at 70% using the test lecture model. Both improved from baseline supporting the hypothesis Ho2. However scores for both P3 and P4 indicated further training was needed to implement DTI as it was designed.

Debriefing Procedures

The researcher met with the staff that consented to have their data reviewed to discuss the findings, summary, conclusions, and recommendations of the study. The data were coded to protect the other staff and it was shared that all scores increased from baseline after treatment; however there was more of an increase found in staff that were trained using the abbreviated feedback form.

Interobserver Reliability

To assess the reliability of assessment, (IOA) was used. This helped to judge the relative believability of the data as well as for the researcher to detect possible drift in the researcher and the program coordinator's (observers) use of measurement. The observers used the same measurement system, measured the same events, and were independent of each other. The method used for calculating the IOA, were total count. The total count

recorded by each observer per measurement period is expressed as percentages. The agreement between the total number of responses recorded by the two observers is calculated by dividing the smaller count by the larger count and multiplying by 100 (Cooper, Heron, & Heward, 2007).

The data in Table 6 provides information on IOA between the researcher and the program coordinator from the four staff data. It includes the final data point from both baseline and treatment for six observations from each of the four staff's baseline and training scores, for both the researcher and the program coordinator.

Data were collected weekly by the program coordinator. Video tapes and data were observed by the researcher who used the AFF for scoring accuracy during baseline and treatment for both the AFF and LTM groups. The researcher observed each video and scored them using the AFF for all four staff that consented to their data and video's being observed. Although all data points are included in Figure 1, only the last data point for both baseline and treatment were calculated in the table.

Table 5

Scored Interval IOA

Observers	Participating Staff	Baseline	Treatment
Observer 1	P1	12, 15, 11	15, 21, 23, 28, 29, 28
Observer 2	P1	11, 13, 10	14, 22, 19, 27, 28, 27
IOA (for last data points)		90%	75%
Observer 1	P2	15, 14, 14	17, 22, 26, 28, 30, 28
Observer 2	P2	14, 13, 12	16, 22, 25, 27, 29, 29
IOA (for last data points)		85%	96%
Observer 1	P3	15, 12, 15	16, 18, 20, 20, 23, 22
Observer 2	P3	13, 13, 16	14, 14, 19, 21, 25, 23
IOA (for last data points)		93%	95%
Observer 1	P4	14, 13, 13	16, 16, 18, 20, 22, 21
Observer 2	P4	12, 13, 15	14, 20, 19, 22, 20, 23
IOA (for last data points)		86%	91%

According the Cooper, Heron, Heward (2007), 80% is the percentage used as a benchmark for acceptability, however 90% or greater is what is needed to create believability (Cooper, Heron, & Heward, 2007). In this study the program coordinator was the same person across all staff that consented to participation. The last data point in IOA collected in baseline for all participants were 85%, 86%, 90%, and 93%. The last data point collected in treatments for all participants were 75%, 91%, 95%, and 96%. Although 75% is low, it is considered acceptable due to simultaneous measurement of multiple behaviors (Cooper, Heron, & Heward, 2007).

Social Validity

Social validity was considered important for staff to be motivated to follow through with intervention as it was designed to be, based upon research, social validity measures treatment outcome and treatment acceptably (Risley et al., 1968). Although not a standardized instrument, this Likert-type scale of 1-4 measured the following participant responses.

Questions for the participants using the abbreviated feedback model:

- Did you find the AFF a useful tool for understanding the expectations of implementing discrete trial training?
- Did you find the feedback after evaluating the form helpful?
- Did you find that after each feedback session your scores improved because of the form?
- Were the feedback sessions a positive experience?
- Would you recommend the feedback form to other paraprofessionals who are learning how to implement discrete trial instruction?

Questions for the participants using the lecture test model:

- Did you find the using the lecture test model a useful tool for understanding the expectations of implementing discrete trial training?
- Did you find having the supervisor in the home to ask questions helpful?
- Did you find that after each supervisor home visit your scores improved because of the supervision you received?

- Was having the supervisor in the home to ask questions a positive experience?
- Would you recommend the test lecture model to other paraprofessionals who are learning how to implement discrete trial instruction?

Using a social validity scale to ask these types of questions offers the researcher an opportunity to understand if either the AFF or the lecture test model is favorably perceived by staff. It was explained to all staff that participation was optional. In addition, a copy was given to them that stated the form was optional and anonymous and would not impact them in a positive or negative way if they participated.

Both staff that were trained using the AFF reported it to be helpful in understanding the expectations of DTI. P1 (AFF) found the improvement could have been due to both experience and getting comfortable with the child as well as the feedback, where P2 (AFF) reported that the feedback was the cause of improvement. Both staff that were trained using the abbreviated feedback method reported that they would recommend this training method to staff learning how to implement DTI.

The staff that were trained using the lecture test model reported slightly different scores, only agreeing that it was helpful to have the supervisor in the home to ask questions. Both reported that the training was a lot to learn and did not feel ready to start. P3 (LTM) reported a feeling of not being prepared or that their score did not improve due to not getting enough support from the supervisor. P3 (LTM) also reported that the parents of the child had questions and that they were not able to get the support they needed to do the job they wanted to do. Staff P4 (LTM) reported that the training was difficult but that the score improved due to supervision and the ability to ask the

supervisor questions. P4 (LTM) also stated that being trained with the lecture test model was not a method that this individual would recommend.

Summary

This chapter presented the findings and results from data analysis to answer the research question. An AB design was used to compare instruction types. Data collected by the researcher was analyzed, graphed, and interpreted. Inter-observer agreement data were also used to support the reliability of data, to reduced observer drift, and to the support the reliability of data collected, analyzed, and graphed. Data were collected as originally intended by the study and allowed for reliable interpretation.

Although DTI is the most sought-after methodology by parents and professionals to treat autism, there are not enough trained and qualified individuals to provide this intervention at the current rate of diagnosis. Trainings that have been reported to be labor intensive are not embraced by trainers or trainees and do not result in long-term skills Due to this report, data were also collected on the social validity of the methods used to gain a better understanding of the level of difficulty of acquisition and if the staff embraced the methods of training. On the social validity questionnaire, one participant reported that the abbreviated feedback method of training was the cause of improvement and that fast and immediate feedback was helpful. Both staff who were trained using the abbreviated feedback method reported that they would recommend this training method to staff learning how to implement DTI.

Chapter 5: Summary, Conclusion, and Recommendations

Introduction

The recent rise in the reported cases of autism, as well as the growing media attention, has lead to an increased awareness of this disorder. As a result, a significant demand has been placed on the service industry to provide trained staff to serve families of children with autism in an attempt to keep up with the rate of diagnosis. DTI is one of the most sought-after methodologies by parents and professionals to treat autism; however, there is a gap in research on how to train qualified individuals who can provide this intervention. One criticism when using DTI is the difficulty acquiring and training staff that are qualified to implement this method of intervention. Autism educators also reported that a "crash course" in training was not sufficient to move intervention to a level considered best practice (Scott & Nelson, 2000; Van Acker, Boreson, Gable, & Potterton, 2005).

The purpose of this study was to understand if using the AFF to train staff to implement DTI is more effective and efficient than the current lecture test model. The experimental design used in this study was a single-subject, AB design. The AB design allowed for evaluation across treatments and thus allowing for a stronger conclusion when comparing hypotheses. This design allowed for causal inference when evaluating the comparison between the use of the AFF and the lecture test model. This design supported the notion that there was a functional relationship between the independent and dependent variables. The purpose of this study was to build on the current research and to

examine the efficacy of using the AFF in training staff to implement DTI compared to a lecture test model alone.

The theoretical construct was based on applied behavior analysis methods. This includes behavior that was conceptualized with a three-term contingency: antecedents, behavior, and consequences. DTI, based on Skinner's operant conditioning model, focuses on using positive reinforcement to gain behavioral change (1968).

The research question that served as the foundation for this study was as follows: When using the AFF as a method of training staff on DTI implementation, will they demonstrate an increase in skill acquisition compared to baseline?

Presentation and Interpretation of the Findings

According to the data analysis, the staff's scores increased and they responded well to being trained with the AFF. The data indicated that a significant increase in skill was observed across all staff from baseline. In this study, two research-based, applied behavioral training methods were compared to find which would create a more significant change in behavior from baseline: the AFF and the lecture test model.

The abbreviated feedback method was supported with research throughout this study to be an effective method of training for DTI. It was found in this study and Jonassen, Tessmer, and Hannum, (1999), that to determine the instructional goals and objectives you need to define and describe in detail the tasks and sub-tasks that the student will perform. It is important to specify the knowledge type (declarative, structural, and procedural knowledge) that characterize a job or task and select learning outcomes that are appropriate for instructional development. In addition, prioritize and

sequence tasks and determine instructional activities that foster learning (Jonassen, Tessmer & Hannum, 1999).

Other studies generalized the concept of using feedback but through videotaping and with distance learning. This was found to be similar to the abbreviated feedback form, but with the added benefit of the staff seeing the correct and incorrect performance versus just reading it. It was demonstrated in this study as well as the ones used in the literature review that on the job training improved performance. However like many of the methods of training noted in this study, continued research is needed on maintaining the level of training.

The lecture and test model provided a basic overview for all staff in this study. This model is broken down in three topical sections: autism, applied behavior analysis, and discrete trial instruction. At the end of 8 hours, a cumulative test is given. An 80% accuracy rate is expected to pass. Coming in with basic understanding was reported by participants to be helpful, specifically in the area of understanding autism.

In this method of teaching DTI, it is important that the trainer provides accurate training and reading materials, as well as a test that represents the information covered. The staff are allowed to take the material home and study prior to the role playing activities, review, and test the following day. Role played activities were reported to be a helpful part of this method of training in this study as well as the literature. Staff reported that role playing with experienced staff with as close to natural examples as possible was particularly helpful (Kraemer et al., 2008).

Limitations

Areas that could have affected the results of this study were the data not being collected as it was intended. A second observer and collecting interobserver data were used to address this possible limitation and to increase the trustworthiness of the data collected. Other concerns that could impact the study include motivation to perform and staff previously exposed to different training methods of DTI implementation that might have developed skills that will have to be unlearned. This was addressed through the questionnaire to rule in or out staff who had prior experience with DTI. The last area that could have resulted in limitation are concerns with limited geographic inclusion or the quality of the setting in which the training was delivered. The researcher used the first four staff that met the criteria and consented to their data being reviewed to avoid bias in selection however that particular data could have been impacted by confounding variables in the home where DTI was implemented or with the individuals who have autism with which the staff worked.

Summary

The crucial need for qualified staff implementing effective interventions brings with it an interest not only in improving staff training and performance, but in reconsidering how staff are supervised so as to ensure quality intervention (Reid et al., 2009). With proper weekly supervision and feedback, the staff in this study were able to implement intervention (DTI) as it was designed and demonstrated increased scores from baseline with final scores stabilizing higher than criterion (e.g. 80%-85%), ranging from 94%-95%. With the lecture test model the scores improved, however they stabilized

below criterion, ranging from 70%-75%. In both the abbreviated feedback method and the lecture test method of training, the scores did increase from baseline. However, with that being said, staff that were trained with the AFF had a more significant improvement.

For P1 and P2, who were both trained with the abbreviated feedback form, baseline was 42% and 47% retrospectively. After training, participant 1's final score was 94% and participant P 2's was 95%. P 3 and 4 were both trained using the lecture test mode. Their baseline scores were 46% and 44% retrospectively. After training, participant 3's final score was 72% and participant 4's was 70%.

After review of the participants' pre and post data, more experience did not correlate with the greatest increase in scores. The participant with the most experience working with children with autism had the lowest outcome scores and the participant who had the least amount of experience had the highest outcome score, implying that this method of teaching allows focused learning specific to the goal rather than depending upon a general base breadth of knowledge about autism.

When using the AFF as a method of training staff in DTI, staff did demonstrate a higher rate of skill compared to a lecture test model of training. The purpose of this study was to determine if the AFF was an effective and efficient method of teaching DTI compared to the lecture test model. The data represented through visual analyses demonstrates that staff that was trained using the AFF did have a significant improvement from baseline compared to the lecture test model.

Implications for Social Change

The high diagnosis rate places a significant demand on the service industry to provide trained staff to serve families with children with autism. Discrete trial instruction is still one of the most sought-after methodologies to treat autism; however, there is a gap in research on how to provide trained and qualified individuals who can implement this intervention to match the rate of diagnosis. At this time, the number of children diagnosed with autism continues to far surpass the number of qualified staff available to provide intervention. One criticism when using the most sought after intervention, DTI, is the difficulty acquiring and training staff. Using the AFF in staff training increases fluency and quality at a faster rate and shortens the gap between the recommendation of services and them being implemented. Having a staff that is qualified and ready to implement the treatment as it was designed will help the child and family reduce the barriers that can result from poor quality or lack of treatment. However the ultimate test is the speed and effectiveness of training being implemented and impact on the individual with autism.

Recommendations for Future Research

In this study, participants had prior experience working with children with autism, but no prior training in ABA. This prior experience did not appear to have a significant impact on data for either the abbreviated feedback model or the lecture test model. Additional research is recommended into the impact of prior ABA training paired with abbreviated feedback model to determine if there is any impact such as if their skill set increases faster than other participants or to a higher level.

It is also recommended based on the findings from this study that future research look into the lecture test model be considered as the first phase of training and then the AFF used as the second phase of training. It is recommend that future research be considered with a larger study in terms of provider participants as well as the functional levels of individuals with autism be explored to support the generalization of the results of this study.

Closing Statement

The crucial need for qualified staff implementing effective interventions brings with it an interest not only in improving staff training and performance, but also in reconsidering how staff are trained to ensure quality assurance (Reid et al., 2009). With proper training and supervision, the staff members implementing interventions are likely to have a more complete understanding of the approach and therefore better treatment results (Gordon et al., 2011). Improvements in staff skill set will likely have a direct correlation on the improvements and long-term outcomes for those being treated.

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Appendix A

A Walden University graduate student is conducting a research project for her dissertation in completion of a doctoral degree in psychology. You are being asked to be a volunteer for this student while she administers a training tool for educational purposes. If you (and your child) agree to participate, here are some important things you need to know:

- The student examiner will explain exactly what activities or tasks will be involved.
- You will not be asked to do anything dangerous.
- All information is confidential, unless there is concern about you or someone else being hurt.
- No identifying information will be collected about you and you will be given an alias.
- The information may be discussed for educational purposes but your name and any identifying information will not be revealed.
- Some things may be too difficult so you don't have to answer any questions or do anything that you don't want to.
- You can stop at any time.
- You will not be paid for your participation.
- Your decision to participate or not will not affect your relationship with the company this study is being done at.
- Your will not be given any feedback about your (or your child) performance because the person using the training tool is a student who is implementing her research for a dissertation. The research and results may or may not be accurate and so the student should not give feedback at this time. After the study has been approved the student may share the results.
- You will not be asked to participate for more than two hours at a time.
- You may be asked to return for a second time to finish the training.
- The examiner is being supervised by faculty member from Walden University.
- The testing sessions may be audio or video taped for supervision purposes and the tapes will be destroyed at the end of the study.

This agreement ends in six months unless you tell the examiner that you want to end it sooner. A copy of this agreement will be kept by the chair and instructor of the dissertation course and you will also be given a copy. If you have any questions or concerns about your participation that the student has not answered to your satisfaction, please contact Dr. Stiles-Smith at bstiles.smith@waldenu.edu.

Thank you for your help,

_____	_____	_____	_____
Examinee's/ Guardian's Signature	Date	Graduate Student Signature	Date

Appendix B

Direct Staff Evaluation Feedback Form

Date:	Staff ID Number:	Observer ID Number:

Organization: *Note if correct (C) incorrect (I) not observed (N/A)*

1.	Instruction area is neat and clean
2.	Needed materials are complete
3.	Needed materials are easily accessible
4.	Sits within reach of learner

Setting Expectations:

5.	Locates learner's goal from most recent data
6.	Shows and tells leaner his/her goal
7.	Completes a reinforce survey with learner
8.	Follows through with SR+ (reinforce) delivery

Instructional Delivery:

9.	Secures student attention before delivering 1st instructional cue
10.	Provides clear focus cue
11.	Provides clear response cue
12.	Delivers cue as scripted in data book or per supervisor
13.	Verifies student responses during early phase of instruction
14.	Tone of voice is varied and interesting

Data Collection:

15.	Needed data sheets are available and set up before instruction starts
16.	Data recorded as instruction proceeds (in situ)
17.	Data recorded accurately
18.	Data graphed immediately following each instructional activity

Error Correction Procedures:

19.	All errors are corrected
20.	Waits no more than 2 seconds for learner response
21.	If no response occurs or if an error occurs, re-presents the original cue and immediately models or prompts correct response.
22.	Once modeled or prompted, re-delivers cue with no model and/or less prompting (immediate recall check)

Reinforcement: Min 1 2 3 4 5 6 SR+ Count:

23.	Praise rate > 6/minute
24.	Provides behavior-specific praise
25.	Praise is enthusiastic and varied

26.	Provides > 5 different SR+ during observation

Behavior Management

27.	Ignores mild misbehavior
28.	Continues with task presentation (when reasonable) in presence of misbehavior
29.	Specifies alternative preferred or appropriate responses
30.	Correctly implements behavior management strategies as specified

Appendix C

Social Validity Questionnaire

This is an optional and anonymous questionnaire and will not impact you in a positive or negative way if you fill it out or not.

Please respond in as long or short of a response as you feel comfortable with.
Please know your response will be anonymous.
Please place the questionnaire in the pre-posted and addressed envelopes and mail when the study is completed.
You can answer yes/no or offer an explanation.
Thank you in advance,
Tammy Dobbs

Social Validity Questionnaire:

AFF

This is a Likert instrument with a 1-4 rating scale. Please indicate your findings in using this tool by placing a 1-4 before each question.

Not acceptability 2 = mild acceptability 3 = moderate acceptability 4 = high acceptability

- [ ] Did you find the AFF a useful tool for understanding the expectations of implementing discrete trial training?
- [ ] Did you find the feedback after evaluating the form helpful?
- [ ] Did you find that after each feedback session your scores improved because of the form?
- [ ] Were the feedback sessions a positive experience?
- [ ] Would you recommend the feedback form to other paraprofessionals who are learning how to implement discrete trial instruction?

Social Validity Questionnaire:

LTM

This is a Likert instrument with a 1-4 rating scale. Please indicate your findings in using this tool by placing a 1-4 before each question.

Not acceptability 2 = mild acceptability 3 = moderate acceptability 4 = high acceptability

- [ ] Did you find the using the lecture test model a useful tool for understanding the expectations of implementing discrete trial training?

- [ ] Did you find having the supervisor in the home to ask questions helpful?

- [ ] Did you find that after each supervisor home visit your scores improved because of the supervision you received?

- [ ] Was having the supervisor in the home to ask questions a positive experience?

- [ ] Would you recommend the test lecture model to other paraprofessionals who are learning how to implement discrete trial instruction?

Appendix D

Are you interested in learning how to implement discrete trial instruction (DTI) by using an abbreviated feedback form?

Information about the study:

This study is focused on decreasing the time it takes to learn DTI and increasing the effectiveness of how the tool is used. It is also hoped that by learning how to use DTI in a more effective and efficient manner, programs for children with autism will reduce delays and have a reduction in staff turnover.

- In order to participate in this study you will have to have passed the DTI test from using the lecture and test model. Not have had previous exposure to the abbreviated feedback from. In addition, you will have to work with a child with autism in a program that requires implementation of DTI.
- The anticipated time to participate in this study will take about 3 months from the beginning of data collection until all of the data collected. Sessions are 15 minutes and 1 day per week. Your program coordinators will video tape you implementing DTI. The abbreviated feedback will be given a code for identification scored by the program coordinator.
- The location of the study will occur in the home setting of your work location and will not affect therapy hours.

If you would like to participate, please sign the bottom of this form and turn it in to the office administrator in your office. For more information about participating in this research study please contact Tammy Dobbs at 805-441-9795 or tmila001@waldenu.edu.

Appendix E

Experience with Discrete Trial Instruction (DTI)

Instructions on filling out form: Please note by answering yes or no to the questions below.

- Have you ever implemented DTI?
    - If yes how many months or years or in what capacity?

      _____

      _____
- Have you ever seen DTI implemented?
    - If yes how long ago or how often?

      _____

      _____
- Have you ever read about DTI?
    - If yes what did you read, by whom, how long ago?

      _____

      _____

If you have any further questions please call Tammy Dobbs at 805-441-9795 or email at tammydobbs5@gmail.com

Appendix F

You are invited to take part in a research study of Tammy Dobbs who is a doctoral student of Walden University. She will be researching the effectiveness of a training tool to teach staff who works with special needs children who to implement a method called discrete trail training. The researcher is inviting you to be a participant in the study. The inclusion criteria include staff that have a bachelor's level degree in psychology or liberal studies, work with a child with autism implementing discrete trail training and have not been trained with to implement discrete trial instruction with the AFF to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Tammy Dobbs, who is a doctoral student at Walden University You may already know the researcher as a supervisor in another office within the company, but this study is separate from that role.

Background Information:
The purpose of this study is to is to increase the skill level of staff who implement discrete trail instruction with children with autism.

Procedures:
If you agree to be in this study, you will be asked to:

- Use the AFF to collect data on staff who implements discrete trial instruction.
- You will be observed while working with a child with autism by your supervisor and data will be collected and feedback will be given to you based on your how you implemented discrete trial instruction.
- This will take 8 to 10 minutes per week to observe and offer feedback.

Here are some sample questions:

23.	Praise rate > 6/minute
24.	Provides behavior-specific praise
25.	Praise is enthusiastic and varied
26.	Provides > 5 different SR+ during observation

Voluntary Nature of the Study:
This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at Walden University or California Psychcare will treat

you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind during or after the study. You may stop at any time.

Risks and Benefits of Being in the Study:
Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as not obtaining the scores you may want on the feedback form, stress, or becoming upset. Being in this study would not pose risk to your safety or wellbeing.

The potential benefits are that the staff will have an increased skill set when implementing discrete trial instruction.

Payment:
There is not payment for participation in this research study.

Privacy:
Any information you provide will be kept confidential in a locked file behind a locked door and will protect your anonymity. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure in the locked file cabinet and behind a locked door for a period of at least 5 years, as required by the university.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher via cell phone at 805-441-9795 or at tmila001@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-3368, extension 1210. Walden University's approval number for this study is **IRB will enter approval number here** and it expires on **IRB will enter expiration date.**

Please keep this consent form for your records.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By signing this form I consent and I understand that I am agreeing to the terms described above.

Printed Name of Participant	
Date of consent	
Participant's Signature	
Researcher's Signature	

Appendix G

Confidentiality Agreement

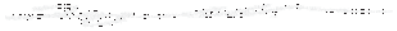
Name of Signer: Tammy Dobbs

During the course of my activity in collecting data for this research: "Improving the Acquisition and Application of Discrete Trial Instruction in the Home Environment: Use of the Abbreviated Performance Feedback in Training". I will have access to information, which is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

By signing this Confidentiality Agreement I acknowledge and agree that:

- I will not disclose or discuss any confidential information with others, including friends or family.
- I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorized.
- I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant's name is not used.
- I will not make any unauthorized transmissions, inquiries, modification or purging of confidential information.
- I agree that my obligations under this agreement will continue after termination of the job that I will perform.
- I understand that violation of this agreement will have legal implications.
- I will only access or use systems or devices I'm officially authorized to access and I will not demonstrate the operation or function of systems or devices to unauthorized individuals.

Signing this document, I acknowledge that I have read the agreement and I agree to comply with all the terms and conditions stated above.

Signature:  **Date: 1/6/12**

Appendix H

Letter of Consent From a Community Research Partner

Dr. Sadeghi Executive Director at California Psychcare
889 Murray Street
San Luis Obispo, California
93442
drsadeghi@calpsychcare.com
805-3006655

1/6/12

Dear Tammy Marrs,

Based on my review of your research proposal, I give permission for you to conduct the study entitled within the Improving the Acquisition and Application of Discrete Trial Instruction in the Home Environment: Use of the Abbreviated Performance Feedback in Training. As part of this study, I authorize you to recruit research assistants as well as direct staff to be a part of the data collection as well as involved in being trained by using the abbreviated performance feedback form. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: The supervision of staff and confidential maintaining of data from the training. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,
Dr. Sadeghi
drsadeghi@calpsychcare.com
805-441-9795

Appendix I

Curriculum Vitae

Tammy J. Dobbs
Tammydobbs5@gmail.com

EDUCATION

Cuesta Collage — San Luis Obispo, CA
A.A.: **Psychology** — May 1999
Emphasis: **Psychology**

Chapman University — Lompoc, CA
B. A.: **Psychology** — January 2002
Emphasis: **Behavioral Psychology and Research Methods**

Walden University — Baltimore, MD
M.A. **General Psychology** — December 2005
Emphasis: **Behavioral Psychology and Research Methods**

Chicago University — Chicago, IL
M.S. **Forensic Psychology** — March 2010

Walden University — Baltimore, MD
Doctorial Candidate in **Clinical Psychology** — Expected Completion
Emphasis: **Clinical Psychology** — Winter 2013 (ABD)

Chicago University — Chicago, IL
Board Certified Behavior Analyst — Expect Completion
Summer 2014

PROFESSIONAL ORGANIZATIONS

American Psychological Association (APA)
California Association of Behavior Analysis (CALABA)
Industrial and Organizational Psychology (SIOP)
Mentor for the for Kern Ridge High School Students Mentoring Program
Person Centered Thinking (PCT)
Quota International Vice President of the San Luis Obispo Chapter

SUMMARY OF EXPERIENCE

California Psychcare — San Luis Obispo, CA
Regional Clinical Director — 8/07-Present
Supervisor: Dr. Sadeghi PhD,

- Staff supervision
- Staff training
- Parent training
- Community Outreach
- Clinical meetings
- Assessment writing and review
- Program and data analysis
- Guest speaking for community and local universities
- Liaison between schools and home programs
- Supporting staff with understanding and implementing applied behavior management
- Supporting staff with ethical, multicultural, and clinical skills

Coastal Autism Services — Los Osos, CA
Autism Specialist and Consultant — 8/05 – 7/07
Founder and Clinical Director: Tammy Marrs M.A.

- Parent Training on behavior excess and skills development.
- Consultation on school and vendor programs.
- Offering behavior and social skills training on a variety of current methods for families and tutors
- Serving as Program Coordinator with an emphasis on collaboration between agencies
- Providing assistance in finding and training tutors
- Consulting and providing parenting and behavioral training to parents of children with special needs.
- Collecting data, choosing measurement procedures, and implementing applied behavior analysis.
- Consulting and training on applied behavior analysis, social inclusion, and self-care needs at after school programs and group homes.
- Providing, implementing, and training on current methodologies for children and adults with special needs.
- Training and speaking on how to promote positive behavioral management as well as basic background on the autism spectrum disorders.

- Helping set up, train, and supervise intensive tutor-provided behavior programs in the home and at schools.
- Collaborating with school supervisors to provide effective programs for children with autism.

Applied Learning Systems — Los Osos, CA
Behavior Therapist and Consultant — 3/04 – 8/06
Supervisor: Eric Carlson, PhD, BCBA

- Meeting with regional centers and school districts to determine what services are needed for children with autism.
- Consulting and providing parenting and behavioral training to parents of children with special needs.
- Providing assessments, collecting data, and choosing measurement procedures and implementing applied behavior analysis.
- Consulting and training on applied behavior analysis, social inclusion, and self-care needs at after school programs and group homes.
- Providing, implementing, and training on current methodologies for children and adults with special needs.
- Training and speaking on how to promote positive behavioral management as well as a basic background on autism spectrum disorders.
- Helping set up, train, and supervise intensive tutor-provided behavior programs in the home and at schools.
- Collaborating with school supervisors to provide effective programs for children with autism.

Holdsambeck & Associates — Lompoc, CA
Behavior Analyst — 5/02-3/04
Supervisor: Karen Chandler, M. A., M.F.T.
Rob Holdsambeck PhD, BCBA, Licensed Clinical Psychologist

- Consulting and providing parenting and behavioral training to parents of children with special needs.
- Giving assessments, collecting data, choosing measurement procedures and implementing applied behavior analysis.
- Consulting and training on applied behavior analysis, social inclusion, and self-care needs at after school programs and group homes.
- Providing, implementing, and training on current methodologies available for children and adults with special needs.

- Training and speaking on how to promote positive behavioral management as well as giving a basic background on autism spectrum disorders.

Lillian Larsen School District — San Miguel, CA
Lead Behavioral Therapist — 4/01-5/02
Supervisor: Tom Cooper M.A. Ed.

- Providing services to individuals who have autism.
- Providing parent and staff support by writing IEP goals.
- Implementing a variety of current methodologies that are designed to assist children with autism.
- Collecting and analyzing data.
- Writing progress reports.
- Providing Discrete Trial Training for children in the autism spectrum.
- Implementing individual educational goals in a running binder to help aids take DTT data as well as PRT data.
- Running integrated playgroups as well as training peers to be "expert players".
- Implementing as well as training aides on how to provide Floor Time to children within the autism spectrum.
- Setting up and training aides to use the TEACCH Method for young children with autism as well as adolescents.
- Teaching social stories to children as well as teaching staffs how to write these stories.
- Training on the use of facilitated communication methods.

County Office of Education — San Luis Obispo,
Behavioral Assistant — 5/99- 4/01
Supervisor: Jenny Sullivan M.A., BCBA

- Implementing IEP goals for children with autism in the school setting
- Advanced knowledge in Discreet Trial Training, Pivotal Response Training, TEACCH, PECS, Integrated Play Groups, Social Stories, Greenspan, and Floor Time.
- Providing applied behavior analysis.
- Collecting and analyzing data.
- Facilitating inclusion programs.
- Providing Discreet Trail Training Binders for data collection.
- Making training videos for new staff on Discreet Trial Training, Pivotal Response Training, and Integrated Play Groups.

Life Steps San Luis Obispo, CA
Behaviorist/Consultant 5/97-5/00
Supervisor: Lacey Dunbar M.A.

- Providing support and training to parents who have children with autism.
- Testing with the Bragance, ABLLS, and Michigan Shafer.
- Offering Early Intervention to children with developmental delays.
- Utilizing advanced knowledge of early childhood development.