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Applied Behavior Analysis and Educator Effectiveness

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Dedication

I dedicate this thesis to my wonderful children, Ben, Dan, Sarah, their spouses, Jenna and Chris, and my extraordinary grandson, Brayden. I love you the most, French toast.
Acknowledgements

I would like to extend my gratitude and appreciation to all my professors at the College of Education, California State University at San Marcos. You have helped me believe that all of this was within my grasp.

I would also like to thank Barbara Chambliss, my mentor and a truly great special educator. Working for you was the best preparation for becoming a teacher.

And finally, a big thank-you to all my students, who have taught me the most.
Autism is a pervasive developmental disability which affects an estimated one in 110 children in the United States (Autism Speaks, 2010). Difficulties with social interaction, communication problems, and unusual behaviors are defining characteristics of autism. Because of these characteristics, individuals with autism often struggle with understanding the world. This thesis looks at one technique which has been found effective in reaching individuals with autism, Applied Behavior Analysis, or ABA. While ABA has been successfully used in certain environments, it has not gained universal acceptance among teachers or widespread usage in classrooms.

This study focuses on special education staff in one school district to ascertain attitudes towards the use of ABA. Staff was surveyed regarding training in ABA and the ways that training was utilized. Respondents were also questioned about the helpfulness of that training in common classroom situations.

Survey results found ABA to be an effective intervention in a variety of categories. The survey also found a correlation between the amount of training in ABA and perceived effectiveness in teaching students with autism.

KEY WORDS: Applied behavior analysis, autism, effectiveness, interventions, perceptions, special education staff
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Chapter 1

Introduction

Applied Behavior Analysis and Educator Effectiveness

Children with autism learn much, much less from the environment. They are often capable of learning, but it takes a very structured environment, one where conditions are optimized for acquiring the same skills that typical children learn 'naturally.' ABA [Applied Behavior Analysis] is all about the rules for setting up the environment to enable our kids to learn.

(ABA Resources at http://rsaffran.tripod.com/whatisaba.html)

Statement of Problem

Autism, according to the Diagnostic and Statistical Manual of Mental Disorders, edition four, (DSMIV), is characterized by "markedly abnormal or impaired development in social interaction and communication and a markedly restricted repertoire of activity and interests" (American Psychiatric Association, [APA], 1999). Although autism is considered a spectrum disorder, whereby, individuals display a wide variance in the severity of symptoms, in the numbers of symptoms, and in the manifestation of those symptoms, specific characteristics remain which must be present for an individual to be diagnosed with autism. To receive a diagnosis of autism, an individual must present at least six, of the twelve criteria, within the three
categories of social interaction, communication and behaviors, prior to the age of three. By impacting so many diverse areas of development, autism can negatively affect all aspects of a child’s education.

Over the past twenty years, new diagnoses of autism have been growing exponentially. Within California alone, the numbers have increased from 10,360 in 1998, to 20,377 just four years later in 2002, according to the California Department of Developmental Services (2003). Some of these numbers may be attributed to an increased awareness of this disability, better assessments and evaluations, a new focus on identifying individuals who display a milder range of symptoms, and broadening criteria for receiving a diagnosis of autism. There is a consensus, however, that the overall rate of autism has been increasing.

It has also become obvious that autism is an issue that schools will need to address, as more students are diagnosed and more resources are needed to educate the increasing numbers of students presenting with autism and other developmental disabilities. The US Government Accounting Office, (GAO), cites that the number of children receiving special education services under IDEIA, the Individuals with Disabilities Education Improvement Act, for a qualifying condition of autism, has increased more than 500 percent over the last decade (2005). The number of students with autism and other disabilities entering school has a huge financial impact on
school districts. At a time when school budgets are being cut, services for students with Individualized Education Plans (IEPs) are rising. According to the Center for Special Education Finance, the average per pupil cost of educating a student with autism was more than $18,000 during the 1999-2000 school year. This amount is triple the amount spent to educate a student who does not receive any special education services (2000).

**Rationale and Purpose**

Autism is a complex developmental disability that affects normal brain functioning and typical development in an individual. Persons with autism typically display delays and abnormalities in communication, social interaction, and stereotypical behaviors. Because autism affects children whose brains are still developing, whose neurons are still making connections; early intervention may modify that brain development, and enable children to achieve better outcomes.

In addition, the incidence of autism has been rising steadily over the last twenty years. According to the Autism Society of America, (ASA), autism is the fastest growing developmental disability in this country, with an annual growth rate of 10-17%. The number of individuals with autism is now estimated at one to one and a half million Americans with one of every 150 school age children receiving a diagnosis of autism (ASA, 2006). As the number of students diagnosed with autism continues to rise, it is apparent
that schools will need to adjust to a school population with very diverse needs, requiring specialized teaching strategies.

"Children with Autism typically do not learn in the same way as other children. They seem unable to understand simple verbal and nonverbal communication, are confused by sensory input, and withdraw in varying degrees from people and the world around them. They become preoccupied with certain activities and objects that interfere with development of play. They show little interest in other children and tend not to learn by observing and imitating others" (Leaf and McEachin, 1999, p. 7).

Despite the disruption of typical learning processes, behavioral scientists have utilized principles and procedures of learning theory to develop effective treatment methodologies for teaching children with autism. Applied Behavior Analysis (ABA) uses these principles to teach children with autism. Since the late 1980s, ABA has become widely accepted as an effective treatment for individuals with autism. Citing the initial research of O. Ivar Lovaas at UCLA, (1987), the National Institute of Mental Health, (NIMH), writes about the efficacy of ABA in the treatment of autism. In their Autism Spectrum Disorders publication, (2004), NIMH quotes the Surgeon General, "Thirty years of research demonstrated the efficacy of applied behavioral methods in reducing inappropriate behavior and in increasing
communication, learning, and appropriate social behavior" (Department of Health and Human Services, 1999).

Since ABA is one of the few broadly accepted interventions for individuals with autism, it is logical that State Departments of Education and individual school districts should examine the practice to see how implementation could benefit the expanding population of students with autism. Determining the most effective strategies for teaching hard to teach children is an important step in reaching the goal of affording every child a Free and Appropriate Public Education, (FAPE).

For ABA to work in the classroom, it must work for the teacher and support staff. The purpose of this study is to look for a possible correlation between ABA training and teacher perceptions of effectiveness working with students with autism. If ABA is to work in the classroom, teachers must be able to implement it and see progress in student achievement. They must believe that ABA is an effective, efficient strategy for reaching students who are difficult to reach through traditional teaching methods.

Hypothesis and Questions

This study will examine the impact of ABA training on educators’ perceptions of effectiveness working with students with autism. The premise of this research is that training in ABA enhances teacher and support staff’s perceptions of their ability to work with and teach students with autism.
Perceptions of educator effectiveness will be positively correlated with training in ABA. The following questions will be addressed throughout the course of this research study:

1. Does training in ABA enhance teachers’ and support staff’s perceptions of their ability to work with and teach students with autism?
2. Are teachers and support staff receiving training in ABA? How much, how often, and what type(s)?
3. Are teachers and support staff able to implement ABA strategies in the classroom?
4. What types of skills are being taught with ABA techniques?
5. Do educators desire training in ABA?

**Significance of Study**

The tremendous growth in the population of individuals with autism and the difficulties inherent in teaching this population make this study relevant. Services for students with autism cost districts almost $19,000 per student, per year, compared to an average of just over $6500 per student per year for general education students (US GAO, 2005). With this growth and the attendant cost to districts, it is important to discover, not only effective ways to teach individuals with autism, but also effective ways to teach these individuals in a classroom setting. An important component of determining effective classroom interventions is the ease with which these interventions
can be incorporated into a classroom setting. The research has shown that ABA is being underutilized in school classrooms (Barton-Anwood, Morrow, Lane, & Jolivette. 2005; Scheruermann, Webber, Boutot, & Goodwin, 2003). This research will survey educators in one district to look for correlations between ABA training and perceptions of effectiveness working with students with autism.

**Limitations**

This study focuses on teachers and special education assistants working with students with autism in a specific school district. The conclusions and findings of this study may not translate to other populations. For instance, these findings may only describe effects of ABA training on students with autism and not students with both autism and other disabilities. Autism often coexists with other disorders, including seizure disorders, Oppositional Defiance Disorder, (ODD), Obsessive Compulsive Disorder, (OCD), Specific Learning Disabilities, (SLD), Attention Deficit Hyperactivity Disorder, (ADHD), as well as mental retardation. Certain individuals with more complicated developmental delays may not benefit as much from the incorporation of ABA principles in the classroom.

The study may also not reflect the impact of ABA training in dissimilar environments; such as school districts with dramatically different populations of students with disabilities. Some private schools and Non Public Schools,
NPS, may have vastly different proportions of students with disabilities, especially students with Moderate to Severe disabilities. The results of this study may not generalize to include these different populations.

Although there is a wealth of empirical data supporting the use of ABA for teaching individuals with autism, data have shown that not all individuals respond in the same manner, or to the same degree, when given intense intervention (Lovaas, 1987). It is not within the scope of this study to determine which individuals may benefit more from ABA interventions.

Additionally, research has shown that intense ABA intervention is necessary to produce significant results, but the research has not yet determined a quantitative amount of intervention for maximum results (Reed, Osborne, & Corness, 2007). This study will not be focusing on the amount of time an individual teacher may employ ABA strategies in the classroom. It will examine whether ABA interventions are utilized or not.

Some research has also shown that eclectic treatment plans may not be as effective as treatments which employ only ABA and behavior modification interventions (Eikeseth, Smith, Jahr, & Eldevik, 2002; Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Sallows & Graupner, 2005). This study is looking at the correlation between the use of ABA and teacher perceptions of effectiveness working with students. The study does not take into account other teaching strategies which teachers may employ.
One final limitation is the sample size utilized for this study. This study will survey teachers and support staff in one mid-sized district in San Diego County. Because the sample size is limited, the results may be neither applicable nor reproducible in a larger sample size.

**Summary**

In conclusion, this study will look at what autism is, the increasing rates of autism and how those rates impact schools. Effective teaching practices for students with autism will be examined, as well as how educators perceive the effectiveness of these practices. The research will look at the value of training in ABA interventions in one district to discover if there is a correlation between ABA training and educators' perceptions of effectiveness working with students with autism.

**Definitions of Key Terms**

ABA: Applied Behavior Analysis is based on the work of behaviorist, B.F. Skinner, who recognized that reinforcement can lead to behavior changes. Through the correct use of positive reinforcement one can increase the likelihood of a desired behavior recurring. Conversely, a lack of reinforcement, can decrease the rate of an unwanted behavior.

ABC: Antecedent, Behavior, and Consequence are terms used in describing what happens prior to a behavior, the behavior, itself, and what happens after a behavior.
Autism: A developmental disorder characterized by impairments in communication and social interaction, as well as restrictive, stereotypical behaviors. This disorder is a spectrum disorder and affects individuals prior to the age of three.

DTT: Discrete Trial Training is a specific form of ABA, which is used frequently as an intervention for children with Autism.

FAPE: A Free and Appropriate Public Education is one of the requirements of IDEA, entitling children with disabilities access to a free, appropriate education.

IDEA: The Individuals with Disabilities Education Act is a Federal Act, which dictates legal requirements for the education of individuals with disabilities, and mandates a free and appropriate education for all individuals.

IEP: An Individualized Education Plan is the legal document describing the qualifying condition, present levels of performance, goals, objectives, accommodations, modifications, services, and setting for an individual receiving special instruction in a school district.

Lovass Therapy: Term used to describe ABA protocols commonly used for teaching children with autism.
Chapter 2

Literature Review

Autism is a life-long developmental disability which affects core aspects of an individual’s personality. In addition, diagnoses of autism are increasing exponentially. According to the Autism Advisory Committee of California, "Autism is the fastest-growing special education eligibility category for public education in California and the nation. Between 1998 and 2002, the number of pupils with ASD receiving services in California nearly doubled, from 10,360 to 20,377" (2007, p.2). A plethora of interventions for individuals with autism exist, but the research points to Applied Behavior Analysis, (ABA), as the treatment of choice (Heflin & Simpson, 1998; Rosenwasser & Axelrod, 2001, Skinner & Hales, 1992). In spite of this fact, teachers are not always equipped with the knowledge and skills to implement ABA within the classroom (Barton, Morrow, Lane, & Jolivette, 2005; Lerman, Tetreault, Hovaneitz, Strobel, & Garro, 2008; Maheady, Harper, Karnes, & Mallette, 1999). This study will look at educator perceptions of the efficiency and effectiveness of ABA in reaching and teaching students with autism, after a review of the literature on the definition of autism, the growing need for interventions, the efficacy of ABA, and ABA in the classroom.
What is Autism?

The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, [APA], 2000), lists “autistic disorder” under the umbrella of “Pervasive Developmental Disorders” which includes five disorders: Autistic Disorder, Asperger’s Disorder, Childhood Disintegrative Disorder, Rett’s Disorder, and Pervasive Developmental Disorder Not Otherwise Specified, PDD-NOS. Within Autistic Disorder, there are three major categories of symptoms: social interaction, communication, and behavior. Individuals labeled with autism must display a minimum of six characteristics, (from a list of twelve), within those three categories, with at least two coming from the category of social interaction (APA, 2000; Tews, 2007). Autism is not a disease; there is no medical test to definitively identify autism (Autism Speaks, 2010). Rather a diagnosis, or label, is based on observations of how closely an individual’s behavior aligns with characteristics within the three aforementioned categories. Autism is also a spectrum disorder, meaning that the manifestation, severity, and combination of symptoms can vary across a continuum, ranging from mild to severe, in each of the categories (Autism Society of America, ASA, 2010; Bryson, Rogers, & Fombonne, 2003). Each individual with autism is unique; they have a unique expression of autism. As Dr. Stephen Shore once said, “If
One of the more characteristic symptoms of autism, lack of eye contact, is a common form of social interaction missing in many children with autism. Other non-verbal behaviors related to social interaction; facial expressions, body postures and the use of gestures, may also be missing or abnormal (APA, 2000). Additional social interaction impairments may include a lack of social or emotional reciprocity and a lack of spontaneous sharing of emotions. For example, individuals with autism rarely seek or offer comfort or affection, and may not share interests or achievements with others (Rutter & Schopler, 1987). An inability to develop relationships or friendships is another hallmark of social abnormality, common in individuals with autism. According to Scheruermann, Webber, Boutot, and Goodwin, many children with autism appear "unmotivated to interact with others or the environment in general" (2003, p. 198). They seem to be in their own world much of the time.

Communication impairments include a lack or delay in language acquisition and/or atypical use of language, for example, the use of stereotypical, repetitive speech or the inability to sustain a conversation (APA, 2000). Individuals with autism may display echolalia, where they repeat words, phrases, or whole conversations, hours or sometimes days after first hearing them. The ability to generate spontaneous language may
also be impaired, what Rutter & Schopler call, "a poor flexibility in language expression and a relative lack of creativity and fantasy in thought processes" (1987, p. 165). Many individuals rely on previously learned responses or scripts, to answer questions and sustain conversations. They may also speak in a monotone, with little or no inflection or emotion in their voice, or may appear to hold conversations with themselves, not comprehending that conversation involves a give and take with another person; taking turns talking.

Behaviors, interests and activities can also be stereotypical and repetitive. Individuals with autism frequently display abnormal preoccupations with parts of objects or non-functional elements of toys; for example: spinning wheels on toy cars, opening and closing doors, lining up objects (Tews, 2007). They may also display unusual mannerisms like hand flapping, finger flicking, and spinning, or an obsession with maintaining routines, such as the arrangement of food on dinner plates or wearing the same clothes each day. While many children will show some of these behaviors, there is a difference in the intensity, focus and inflexibility of the behavior in individuals with autism (APA, 2000). They may show an adherence to maintaining their routines and rituals, in spite of efforts to engage them in more appropriate behaviors.

There is no single, specific cause of autism; rather, there seem to be
multiple factors involved. While those causes are unknown, there does appear to be a genetic predisposition which may be triggered by something in the environment. Different theories have focused on childhood immunizations, (particularly the preservative, thimerosal, which was a frequent ingredient in many vaccines), exposure to heavy metals, dietary concerns, (including allergies and vitamin deficiencies), even poor parenting, as contributing causes for autism, but, so far, they all remain just theories (Herbert, James D., Sharp, Ian R. & Gaudino, Brandon A., 2002). Unfortunately with so many theories about causation, multiple therapies and interventions abound for the treatment of autism (Heflin & Simpson, 1998). Not all of these therapies and interventions are research based, however, and few of them have empirical research to back up their claims. Given the difficulty reaching individuals with autism, determining effective treatments and implementing those treatments should be a priority for anyone working with individuals with autism.

The Need for Intervention

Autism is now the fastest growing developmental disability in this country, with an annual growth rate of 10-17%. While the growth rate of Americans with disabilities during the 1990's was about 16%, the growth rate of Americans with autism was 172% (ASA, 2010). The number of individuals with autism is now estimated at one to one and a half million Americans with
one of every 110 school age children receiving a diagnosis of autism (Autism Speaks, 2010). The US Government Accounting Office cites that the number of children receiving special education services under the Individuals with Disabilities Education Act, (IDEA), for a qualifying condition of autism, has increased more than 500 percent over the last decade (2005). In California, the number of persons receiving services for autism increased approximately 300% during 1987-1998 and approximately another 100% during 1998-2002 (Rice, 2002).

The number of students with autism and other disabilities entering school districts has a huge financial impact, as well. At a time when school budgets are being cut, services for students with Individualized Education Plans (IEPs) are rising. According to the Center for Special Education Finance, the average per pupil cost of educating a student with autism was more than $18,000, during the 1999-2000 school year. This amount is triple the amount spent to educate a student who does not receive any special education services (2000).

With limited budgets and resources, schools need to find the most efficient ways of teaching students with autism. Citing the initial research of O. Ivar Lovaas at UCLA, the National Institute of Mental Health, (NIMH), writes about the efficacy of ABA in the treatment of autism. In their 2004 Autism Spectrum Disorders publication, NIMH quotes the Surgeon General,
"Thirty years of research demonstrated the efficacy of applied behavioral methods in reducing inappropriate behavior and in increasing communication, learning, and appropriate social behavior" (Department of Health and Human Services, 1999).

**Applied Behavior Analysis, ABA**

"Behavior Analysis is a scientific approach to understanding behavior and how it is affected by the environment" (Autism Speaks, 2010). Behavior analysts refer to behavior as anything a person can do and the environment as all the events or conditions, either preceding or following the behavior, which might change that behavior (Leaf & McEachin, 1999; Smith, 2001). ABA is based on behaviorist, B.F. Skinner's theory that behavior can be changed through the prudent use of reinforcers, what he called operant conditioning (1938). A behavior will increase when it is immediately, positively, reinforced, but will decrease if it is ignored. Because children with autism do not learn in the same way as other children, through observation, they require direct teaching to learn things which many children pick up on their own (Leaf, & McEachin, 1999). ABA uses prompting, reinforcement, and extinction to directly teach the individual. Specific skills are targeted, broken down into the simplest components, and taught through the use of prompts and reinforcers (Steege & Mace, 2007; Tews, 2007).
In a landmark study, O. Ivar Lovaas, (1987), of the University of California at Los Angeles, used ABA interventions to teach a group of preschoolers. Lovaas, (1987), hypothesized that young children with autism who were immersed in an intensive, comprehensive learning program, which also targeted behavioral deficiencies, might be able to catch up to their normal peers within a few years. This hypothesis was based on a couple of assumptions. First, even though many individuals with autism test in the profoundly retarded range on IQ tests, those scores can be changed. Second, targeting the individual's inability to learn the way typical children learn would change the poor outcome faced by most individuals with autism. To qualify for the study, a child had to receive an independent diagnosis of autism, from a professional unrelated to UCLA. The child had to be less than 40 months of age, (46 months, if echolalic), and had a prorated mental age of at least 11 months. The children were then divided into groups. The experimental group, made up of 19 children, received 40 hours of ABA per week. One control group, of 19 children, received 10 hours of ABA per week and the second control group, of 21 children, was not treated at all by Lovaas and his Young Autism Project.

The results of Lovaas', (1987), trial were phenomenal. Of the 19 children who received intense ABA, (40 hours per week, for two or more years), nine recovered to the extent that they were mainstreamed and
indistinguishable from their typical peers. Only one of the 40 children in the two control groups recovered to the same extent. In a follow up study conducted several years later, study participants retained most of the gains they had made during the initial study. One participant from the experimental group, who initially was able to be mainstreamed, was placed in special education, while one of the 40 who received modified intervention and was initially placed in a special education program was able to be mainstreamed (McEachin, Lovaas, & Smith, 1993). These are significant findings, and while the extent of recovery has not been completely duplicated, many studies have reached similar conclusions about the effectiveness of ABA (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Sallows, & Graupner, 2005).

Additional research has focused on learning rates of children with autism (Howard, et al., 2005). Children with developmental delays learn at a slower rate than their typically developing peers. By the time they reach school age, they have missed multiple learning opportunities, simply through their inability to absorb information at the same rate as other children. Researchers studied the effects of ABA on the mean learning rate of study participants, theorizing that learning rates for children with developmental delays must increase if those children are ever to catch up with typical peers. Unless their learning rate actually exceeds a normal learning rate, those children cannot close the gap between their skills and the skills of typical
children. This study showed that children who received intensive ABA interventions acquired skills at rates that matched or exceeded normal acquisition rates. Children in the two control groups in the study, however, did not increase their rate of learning and skill acquisition (Howard et al., 2005). Their learning rates remained below normal, meaning that as time progressed, they would fall further and further behind. They would learn less each year than their typical peers.

Eikeseth, Smith, Jahr, and Eldevik conducted a study using older children, (four to seven years old) in 2002. Prior to this study, most experiments focused on early intervention models for children aged three and four. In this study, however, older children who received intensive behavioral treatment were found to make similar gains in IQ, receptive and expressive language, social skills, and adaptive living skills. In a follow-up to their 2002 study, Eikeseth, Smith, Jahr, and Eldevik checked back with the study participants one and a half years after the initial research was completed (2007). The children continued to receive the same interventions in the interval between the completion of the initial study and this follow-up, although the intensity of the treatment was reduced to accommodate school schedules. Initially, children received 28-29 hours of intervention per week, which was reduced to between 16 and 18 hours per week, after the first year. The type of intervention remained the same, either ABA or an eclectic...
approach, using several different commonly used interventions for children with autism. Through this study, the authors discovered that ABA intervention was the most effective. Intensive intervention using an eclectic approach did not produce as significant gains as the intensive ABA interventions. In addition, this study provided evidence of the effectiveness of ABA with older children in a school setting, as well as the possibility of implementing this type of program within a classroom.

Teachers and ABA

Additional studies have also looked at the implications for student performance when ABA principles are implemented in classrooms and that research has shown that student performance is enhanced when teachers use ABA strategies in their classroom (Dib & Sturmey, 2007; Sarakoff & Sturmey, 2007). The research also shows that although ABA is recognized as an effective strategy for teaching individuals with autism and considered a best practice, it is not common practice in the classroom. "There is a large body of knowledge about the most effective curriculum and strategies for teaching these students. Unfortunately relatively few teachers are aware of those strategies, and most have not mastered them" (Scheruermann, Webber, Boutot, & Goodwin, 2003, p. 198). While different theories abound for why ABA implementation is not common in classrooms, the fact remains that few teachers are prepared to use behavior modification techniques in
their classrooms (Barton-Arwood et al., 2005). In fact, "Most teachers receive relatively little formal instruction in evidence-based practices" (Lerman et al., 2008, p. 243).

With the advent of legislation mandating a standards based education and empirically proven interventions for all students, schools and teachers may need to begin including ABA in their repertoire of strategies, however. The Individuals with Disabilities Education Improvement Act, (IDEIA), guarantees all children a Free and Appropriate Public Education (FAPE) (Wright, 2004). For children with disabilities, this means an Individualized Education Plan, which spells out goals and objectives, as well as a means to measure progress on goals and objectives (Heflin & Simpson, 1998). It also includes the use of interventions and methodologies which are "reasonably calculated to provide educational benefit" (Etscheidt, 2003, p. 51). Many states are beginning to look at what this might mean for students with autism and deciding in favor of the use of ABA for instruction of students with autism. "State departments of education are increasingly complying with IDEIA by mandating funding and training of school staff in ABA methods" (Bloh & Axelrod, 2007, p. 52). As ABA becomes more widely recognized as an effective intervention for children with autism, teachers will be asked to learn and implement ABA interventions in their classrooms (Lerman et al.,
This study will look at teachers' perceptions of the effectiveness of ABA principles in teaching children with autism.

Summary

Current data attest to the explosive growth rate in the diagnosis of autism. Given this growth rate, the need for effective interventions in the field of autism is imperative. Existing research provides evidence of the efficacy of ABA interventions for individuals with autism. New research is currently focusing on the use of ABA in the classroom. This study will use survey data to ascertain educator's views on the efficacy of ABA training for use in the classroom.
Chapter 3

Methodology

The purpose of this research is to determine whether training in Applied Behavior Analysis (ABA) affects teacher and support staff’s perceptions of their effectiveness working with students with autism. ABA is an intervention based on years of research in the field of learning theory. It has been proven to be an effective intervention for individuals with autism and has been used to teach academic and daily living skills, as well as to modify non-compliant and difficult behaviors, while teaching replacement behaviors (Department of Health and Human Services, 1999; Heflin & Simpson, 1998; Rosenwasser & Axelrod, 2001; Skinner & Hales, 1992).

Because ABA has been so useful in home programs and clinical settings as an early intervention, current research has been focusing on the use of ABA interventions in the classroom. ABA is just beginning to gain acceptance in the classroom, as more education specialists receive training in ABA and behavior modification techniques, either through pre-service training in credentialing programs, or professional development workshops on the job. This study will add to the research by looking at how teachers and other support staff perceive the effectiveness of ABA interventions in their classrooms (Dib & Sturmey, 2007; Sarakoff & Sturmey, 2007).
Design

This study utilizes a survey to determine teacher and support staff’s perceptions of effectiveness working with students with autism and how that might relate to training in ABA. Other causes for teacher perceptions of effectiveness: years spent teaching, post graduate units, grade levels taught, are all variables taken into consideration, during the course of this research. These variables will also be analyzed for correlations; in order to isolate ABA Training as a factor in participants’ perceptions of effectiveness working with students with autism. The surveys were administered to teachers, Designated Instructional Service providers, (DIS), and paraprofessionals in a mid-sized district in San Diego County. Upon completion of surveys, data was tabulated and analyzed using a quantitative statistical analysis. Finally, conclusions and findings were reached and discussed in the following chapters.

Participants

Participants in this study included Special Education teachers, DIS providers and paraprofessionals from an elementary school district in North San Diego County. This district includes nine schools, serving students in Kindergarten through eighth grade. The student population is over 5600, with numerically significant populations of African-American, Hispanic, and white students, as well as socioeconomically disadvantaged students, English
learners and students with disabilities (California Department of Education, 2010).

The District receives Title I and Title III funding, as well as Economic Impact Aid, (EIA), and English Language Acquisition Program, (ELAP), funding (Fallbrook Union Elementary School District, 2010). Forty-eight percent of students are served under the Free or Reduced Price Lunch Program, while 31% are classified as English Language Learners. Another seven percent participate in migrant education programs (California Department of Education, 2010).

There are 263 teachers in the district, 17 of whom are teaching special education classes, including six regional Moderate/Severe classes. Regional classes accept students from throughout the Special Education Local Planning Area, (SELPA), and are operated under the auspices of the North Coastal Consortium for Special Education, (NCCSE). The District also employs 113 paraprofessionals who work with students, and 34 DIS personnel (Ed Data, 2010). DIS providers include Speech and Language Pathologists, (SLPs), Physical therapists, (PTs), Occupational Therapists, (OTs), Adaptive Physical Education teachers, (APE), District Nurses, and Psychologists. Four hundred sixty-two students, approximately nine percent of the student population, receive special education services in this district (California Department of Education, 2010).
Materials

This research study used a survey composed of both standard demographic questions and specifically designed questions to elicit information about educator perceptions on teaching students with autism; the *ABA Training and Teaching Effectiveness Survey* (Appendix A). Demographic questions focused on years of experience, grade levels taught, education level, and service capacity. Other questions addressed the amount and types of ABA training, as well as general questions about the employment of ABA training. The survey also employed a Likert scale to determine the effects of ABA Training on educator perceptions of effectiveness. Lastly, the survey included questions about future training and a space for additional comments.

Data Collection

Data was collected through administration of the *ABA Training and Teaching Effectiveness Survey*. Surveys were sent out to teachers and support staff working with students in special education midway through the school year. Envelopes were provided at each school site for completed surveys, which were collected one week later. All survey information was separated from any identifying information, to maintain participants' anonymity. Data was analyzed, evaluated, and classified in order to interpret results.
Statistical analysis was used to check for correlations between questions to determine if training in ABA enhanced participants' perceptions of effectiveness working with students with autism. Statistical analysis was also used to determine if other demographic information might be related to participants' perceptions of effectiveness working with students with autism.

**Procedure**

Upon approval by the Superintendent of Special Education, e-mails were sent to special education teachers and DIS providers in the District, explaining the purpose and timeline of the survey. Hard copies of the survey and cover letters were addressed to all special education teachers, DIS providers, and their paraprofessionals for a total of 141 surveys and delivered to each school site. Participants were assured of anonymity and confidentiality of survey results. Interested participants were also apprised of the process for obtaining results and conclusions, upon completion of the study. Participants were asked to complete twenty multiple choice questions and were offered an opportunity to add additional comments. The collection process for completed surveys was included in the cover letter. Envelopes were provided for completed surveys at each school site and were collected one week after the delivery of the surveys. Once surveys were returned, the results were analyzed. Statistical analysis was employed to determine correlations between questions.
Method of Analysis

Quantitative analysis was used to study the survey results. Data from the 79 completed surveys was entered into a data analysis software program. The twenty questions in the survey were analyzed for frequencies of responses, as well as similarities and connections between questions. Statistical analysis was also employed to determine any statistically significant correlations between answers.

Summary

With the expanding population of students with autism and the empirical support behind ABA as an intervention for individuals with autism, school districts are beginning to look at the future of ABA in the classroom. Existing research has already shown that ABA can enhance academic performance and improve social interaction for children with autism (Dib & Sturmey, 2007; Sarakoff & Sturmey, 2007). This study expands on that research by attempting to show that ABA training also enhances educators’ perceptions of their ability to teach students with autism.
Chapter 4

Data Analysis

Given the rising rates of autism spectrum disorders, (ASD), it is of vital interest for anyone working with children with an ASD to find more effective interventions to reach these notoriously hard to reach children. Empirical research has proven the effectiveness of Applied Behavior Analysis, (ABA) (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Sallows, & Graupner, 2005). While most research has been conducted with younger children, proving the importance of early intervention, recent data provides testimony to the effectiveness of ABA for older children, as well (Eikeseth, Svein, Smith, Tristram, Jahr, Erik, & Eldevik, Sigmund, 2007). Additionally, new research provides insight into the use of ABA in a classroom setting (Dib & Sturmey, 2007; Sarakoff & Sturmey, 2007). Although studies provide evidence of the effectiveness of ABA in classrooms, it is not yet being utilized consistently (Barton-Arwood et al., 2005).

This study and survey examined the impact of ABA training on educators' perceptions of effectiveness working with students with autism in one district. Data were collected regarding basic demographics, training or lack of training in ABA, types of training, frequency of application of ABA interventions, and components of ABA interventions employed. Respondents were also asked to rate eight statements about the effectiveness of ABA
training on different aspects of teaching; including prompting, reinforcement, motivation, interventions, types of skills taught, and types of students taught.

The data were analyzed for frequencies and correlations.

Participants

Participants in this study included Special Education teachers, Designated Instructional Service, (DIS), providers and paraprofessionals from an elementary school district in North San Diego County. Just over half of the participants, 50.6%, had between one and ten years experience working with students. A quarter of the respondents, 25.3%, had worked with students for 11 to 15 years. Another twenty percent, 20.3%, had more than 20 years experience with students, with the remaining respondents reporting less than a year working with students.

Almost 30 percent, 29.5%, of respondents reported working with students in all grade levels. More than 40 percent, 43.6%, worked with students in pre-K through fourth grade, while over a quarter of participants, 26.9%, worked with students in grades five through eight.

Half of the respondents, 49.9%, reported working as paraprofessionals, with half of those working in a Learning Center or Mild/Moderate setting, and half working in an SDC or Moderate/Severe setting. Almost 40 percent, 38.1%, of the survey participants worked as teachers, with 45% of those working in a Learning Center or Mild/Moderate
setting, and 35% working in an SDC or Moderate/Severe setting. The remaining ten percent of respondents worked as DIS providers.

Almost 20 percent, 19.7%, of survey participants had no training in ABA, 25 percent had six or fewer hours, and almost 25 percent, 23.7% had more than five days of ABA training. The remaining respondents reported receiving varying amounts of training (see Figure 1).

Figure 1:
Types of training included manuals or books, lecture, video or online training, and hands-on training. More than a quarter, 25.4%, of respondents reported attending lectures on ABA, while 17.9% reported receiving hands-on training with students. Almost 20 percent, 19.4% received two types of training and almost a quarter of respondents, 23.9%, received three different trainings. Only 6% of respondents received all available trainings (see Figure 2).

Figure 2: 

![Types of training graph](image-url)
Analysis

Question 7 asked respondents how often ABA training influenced the approaches, strategies, or interventions they used in the classroom. A chi square analysis revealed a relationship between the amount of training and the frequency of use; $X^2 (3, N=68) = 11.4, p=.01$. Respondents who received two or more days of training were more likely to use ABA approaches in the classroom than respondents who received less than 12 hours of training. Respondents who received two or more days of training were also less likely to report using ABA interventions one or fewer times per day.

![Bar Chart](image)

**Frequency of ABA Interventions**
- Often, 1 or less per hour
- Sometimes, 1 or less per day
- Seldom, 1 or less per week

**Training**
- 12 or less hours
- 2 or more days
Question 8 asked respondents what topics they taught using ABA principles. Almost 80 percent, 77.7% used their ABA training to teach more than one topic. Of respondents that chose only one topic, the most frequent response was behavior. Question 9 asked respondents what aspects or components of ABA they utilized. Again, most respondents, 80.5%, reported using more than one aspect of ABA. Single components were chosen by a total of 14 respondents.

Questions ten through 12 asked respondents to rate statements linking ABA training with effectiveness working with students. Each of these questions was analyzed for correlations using a 2 (training) X 2 (agreement) chi square test for independence. Responses were collapsed to compensate for low cell counts. The amount of training was collapsed into two categories, 12 or less hours and two or more days; and ratings were collapsed into agree and disagree or no opinion. Actual counts were then compared with expected counts in each cell and discrepancies noted. For each question, the observed count was less than the expected count for agreement with the statement, when respondents had 12 or fewer hours of training and for disagreement when the respondent had two or more days of training. Conversely, the observed count was more than the expected count for disagreement when respondents had 12 or fewer hours of training and for agreement when the respondent had two or more days of training.
10. ABA Training has helped me identify appropriate antecedents and reinforcing consequences for my students.

Table 1:

<table>
<thead>
<tr>
<th>Training X Antecedents and Consequences</th>
<th>Antecedents and Consequences</th>
<th>Agree</th>
<th>Disagree or no opinion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of Training</td>
<td>12 or less hours</td>
<td>Count</td>
<td>27</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>2 or more days</td>
<td>Count</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Count</td>
<td>54</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td></td>
<td>33.0</td>
<td>11.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>21.0</td>
<td>7.0</td>
</tr>
</tbody>
</table>

11. ABA Training has helped me provide appropriate modifications and interventions to better serve students.

Table 2:

<table>
<thead>
<tr>
<th>Training X Modifications and Interventions</th>
<th>Modifications and Interventions</th>
<th>Agree</th>
<th>Disagree or no opinion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>12 or less hours</td>
<td>Count</td>
<td>25</td>
<td>19</td>
</tr>
<tr>
<td>Training</td>
<td>2 or more days</td>
<td>Count</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td>Training</td>
<td>Total</td>
<td>Count</td>
<td>52</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td></td>
<td>31.8</td>
<td>12.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20.2</td>
<td>7.8</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td></td>
<td>52.0</td>
<td>20.0</td>
</tr>
</tbody>
</table>
12. ABA Training has helped me motivate students and promote success through prompting and reinforcement.

Table 3:

<table>
<thead>
<tr>
<th>Amount of Training</th>
<th>Count</th>
<th>Disagree or no opinion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 or less hours</td>
<td>30</td>
<td>14</td>
<td>44</td>
</tr>
<tr>
<td>Expected Count</td>
<td>34.8</td>
<td>9.2</td>
<td>44.0</td>
</tr>
<tr>
<td>2 or more days</td>
<td>27</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>Expected Count</td>
<td>22.2</td>
<td>6.8</td>
<td>28.0</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>15</td>
<td>72</td>
</tr>
<tr>
<td>Expected Count</td>
<td>57.0</td>
<td>15.0</td>
<td>72.0</td>
</tr>
</tbody>
</table>

Questions 13 through 17 asked respondents to rate statements linking ABA training with teaching specific skills. For each question, a chi square analysis was used to examine the relationship between the amount of ABA training and the respondent's perception of effectiveness of that training in teaching a particular skill. A significance level of \( p < .05 \) was chosen. A frequency scale was also used to determine the perceived effect of ABA training on teaching strategies and skills.

Question 13: ABA Training has helped me teach academics; reading, writing, mathematics; was evaluated using a 2 (training) X 4 (agreement) analysis and yielded \( X^2 (3, N=73) = 14.96, p=.002 \). Fifty-four percent of respondents strongly agreed or agreed that ABA training helped them teach academics.
Question 14: ABA Training has helped me teach daily living/adaptive skills; was also analyzed using a 2 (training) X 4 (agreement) analysis, and produced \( \chi^2 (3, N=54) = 13.17, p=.004 \). Fifty-three percent of respondents believed that ABA training helped them teach daily living/adaptive skills.

A 2 (training) X 3 (agreement) chi square analysis was used to examine the relationship between ABA Training and teaching communication in question 15: ABA Training has helped me teach communication; labeling, pragmatics, and/or grammar. This analysis was significant, \( \chi^2 (2, N=55) = 6.38, p=.041 \). Fifty-four percent of these respondents felt ABA training helped them teach communication skills.

A 2 (training) X 2 (agreement) chi square analysis was used to examine the relationship between ABA Training and teaching social, play, and/or leisure skills in question 16: ABA Training has helped me teach social skills, play skills, and/or leisure skills. This analysis was also significant, generating \( \chi^2 (1, N=73) = 6.29, p=.012 \). Almost 80 percent, 78.5%, of respondents found ABA training helpful in teaching social, play, and leisure skills.

Question 17: ABA Training has helped me reach my most severely impacted students; was evaluated using both a 2 (training) X 2 (agreement) and a 2 (training) X 4 (agreement) chi square analysis. The 2 X 2 analysis yielded \( \chi^2 (1, N=73) =1.28, p=.258 \), which is not a significant difference. The
2 X 4 analysis, however, produced $X^2 (3, N=61) = 13.23$, $p=.004$, which is significant in finding a correlation between ABA training and reaching the most profoundly affected students. Thirty-seven percent of the expected cell counts were below five, however, which may affect the significance in a larger sample size. The 2 X 4 analysis, which did not collapse the responses strongly agree and agree into one response displayed a large difference between the two responses. Only four respondents with 12 or fewer hours of training strongly agreed that ABA training helped them impact their most severely affected students, while 24 agreed. Conversely, 13 respondents, who received more than two days of training, strongly agreed that ABA training helped them reach their most severely affected students, while eight agreed. Sixty-four percent of these respondents found ABA training helpful in reaching the most profoundly affected students.

The final question in the survey asked respondents about future ABA training. A large percentage of respondents, 45.5%, expressed interest in receiving training in four to five areas. Equal numbers of respondents, 19.5%, were interested in receiving training in two to three areas or were not interested in future training. The remaining respondents expressed interest in training for behavior, 9.1%, interventions and reinforcement, 2.6% each, and task analysis, 1.3%.
Results

The results of the *ABA Training and Teaching Effectiveness Survey* indicate that educators, working with students with autism, find ABA an effective intervention for these students. More than 70 percent of respondents found ABA training helpful in providing appropriate antecedents and consequences, prompting and reinforcement, and teaching social, play, and leisure skills. Over 60 percent found ABA training efficacious in providing appropriate modifications and interventions, as well as reaching their most severely affected students. More than 50 percent utilized their ABA training when teaching academics, adaptive and daily living skills and communication.

A relationship between the amount of ABA training and perceived effectiveness providing and teaching skills also exists. Data analysis revealed a positive correlation between the amount of training and the ability to provide appropriate antecedents and consequences, modifications and interventions, as well as prompting and reinforcement. Further analysis found a positive correlation between the amount of ABA training and teaching academics, daily living skills, communication, and social skills. This analysis also revealed that a majority of respondents found ABA helpful in reaching their most severely impacted students.
The survey also considered the amount of training received by educators. Almost half of the respondents in this survey, 44.7% had six or fewer hours of ABA training, and more than sixty percent, 63.1% had 12 or fewer hours. Almost a quarter of respondents, 23.7%, however, had more than five days of training. There was no correlation between service capacity; assistant, teacher, or DIS provider; and amount of training.

There was a correlation between the amount of training and experience working with students, though. None of the respondents who had worked with students for a year or less received two or more days of training and more than five percent, 6.3%, had received no training at all. A third of respondents who had worked with students for between one and five years had received 12 or fewer hours training. Those working between five and ten years had the highest rates of training. Almost 40 percent, 39.3%, received two or more days of training.

Finally, respondents were questioned about future ABA training. Almost half of the respondents, 45.5%, wanted more training in ABA. Slightly less than 20 percent were not interested in future ABA training. There was no statistical correlation between service capacity, previous training, or years of experience and interest in future training.
Summary

The data gathered through the ABA Training and Teaching Effectiveness Survey addressed the research questions about the impact of ABA training on educators' perceptions of effectiveness working with students with autism. Educators' perceptions of effectiveness were positively correlated with training in ABA. Training in ABA was utilized for teaching various skills, as well as for providing strategies to work with students.

As educators spend time working with students, they are receiving training in ABA. Educators with the least amount of experience with students also had the least amount of training. Most training is being provided in a lecture format with hands-on training with students ranking a close second. Almost half of respondents, 49.3%, received more than one type of training.

The data collected through this study bodes well for the future of ABA in the classroom. Respondents to this survey are finding the principles of ABA to be valuable in actual classrooms working with students. They are able to utilize the interventions and strategies and find them helpful in addressing the issues they face in teaching this population.
Chapter 5

Discussion

The tremendous growth in the population of individuals with autism and the difficulties inherent in teaching this population make this research relevant. Discovering efficient, effective means to teach these students in a classroom environment is extremely important for educators. Two important considerations in determining effective interventions are the ease with which these interventions can be incorporated into a classroom setting and the degree of educator “buy-in” or their belief in the efficacy of the intervention. If ABA is to work in the classroom, teachers must be able to implement it and see resultant progress in student achievement. Unfortunately, although research has proven the effectiveness of ABA, (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Sallows, & Graupner, 2005), it is still being underemployed in classrooms (Barton-Arwood, Morrow, Lane, & Jolivette, 2005; Scheruermann, Webber, Boutot, & Goodwin, 2003).

This study added to the existing research, by examining teacher and support staff views on the effectiveness of ABA interventions, in an attempt to determine if training in ABA enhanced educator perceptions of their ability to work with and teach students. Educators were asked to respond to questions about the effectiveness of ABA training on different aspects of teaching, including prompting, reinforcement, motivation, interventions, types
of skills taught, and types of students taught. This information was analyzed along with amounts and types of training in ABA and synthesized into this report.

The data analysis showed strong support for ABA training in teaching students with autism. Special education staff found training in ABA a valuable tool for many aspects and topics of teaching. Additionally, as educators received more ABA training, their perceptions of the effectiveness of that training rose. Finally, educators expressed an interest in receiving more training in ABA.

Summary

The ABA Training and Teacher Effectiveness Survey demonstrated that the majority of educators are receiving ABA training. The amounts of training vary according to experience, with senior staff receiving more training than less experienced staff. Service capacity did not have a significant effect on the amount of ABA training. Assistants, teachers and Designated Instructional Service, (DIS), providers all received similar amounts of training.

Data analysis revealed that educators find ABA a valuable intervention. Educators utilize ABA for a variety of purposes, including determining appropriate antecedents, consequences, interventions, modifications, prompts, and reinforcements. ABA is also used to help teach a
variety of skills, including academics, daily living skills, communication, and social skills. Finally, a majority of respondents agreed that ABA training had helped them reach their most profoundly affected students.

The survey also looked at the types of training most desired by respondents. More participants marked an interest in four to five areas of training than any single area, including not interested. Of those who expressed an interest in one aspect of training, behavior was the most common area of interest.

**Limitations**

This study focused on teachers, special education assistants and DIS personnel in a specific school district. Because the sample size is limited to employees of one district, the results may be neither applicable nor reproducible in a larger sample size or other districts. The student population can also differ dramatically across districts and schools. This research may not be reproducible in education settings with different student populations.

Although research has proven the effectiveness of ABA interventions for teaching individuals with autism, individuals respond at different rates and in different degrees to these interventions (Lovaas, 1987). Respondents with limited experience may have had little opportunity of working with students who have good response rates to the interventions. The amount of intervention is another feature which may limit the applicability of this study.
The intensity of ABA interventions needed to produce maximum results is still not fully understood (Reed, Osborne, & Corness, 2007). As more research becomes available, ABA programs may include specific time requirements to maximize student progress.

Additionally, some research has shown that programs which utilize ABA interventions as a primary methodology show more promise than programs which use various methodologies (Eikeseth, Smith, Jahr, & Eldevik, 2002; Howard, Sparkman, Cohen, Green, & Stanislaw, 2005; Sallows & Graupner, 2005). This study was not limited to programs which use ABA exclusively and does not take into account other teaching strategies which teachers may employ in their classroom.

**Implications**

The Individuals with Disabilities Education Improvement Act, (IDEIA), guarantees all children a Free and Appropriate Public Education (FAPE) (Wright, 2004). For children with disabilities, this means an Individualized Education Plan, (IEP), which includes the use of interventions and methodologies which are “able to achieve the goals of the IEP” (Etscheid, 2003, p. 66). Several states, including the state of California, are now recommending the use of ABA as an instructional intervention and methodology (Bloh & Axelrod, 2007). As Departments of Education begin to
advocate the use of ABA interventions, teachers will be asked to learn and implement those interventions in their classrooms (Lerman et al., 2004).

All educators have a responsibility to know how to teach their students. For staff working with students with autism, it is apparent that this means understanding the principles of ABA and how to implement those principles. Teachers and DIS providers must be able to help students make progress on goals. Research has shown that ABA is one way to help individuals with autism achieve their potential.

Given the current research, and the impact of federal mandates guaranteeing the rights of all children to a FAPE, educators should be receiving training in ABA. Teacher credentialing programs, colleges of education, and school districts should all be looking towards universal training in ABA for all staff working with students with autism. ABA training can be offered as both pre-service and post-service instruction and should be part of an ongoing campaign of professional development.

Recommendations

Current research suggests that ABA methodologies are a best practice for students with autism (Heflin & Simpson, 1999). Teachers and support staff should be trained in the use of ABA. This training should include systematic instruction in the principles of ABA, incorporating data collection, prompt hierarchies, reinforcement procedures, and programming for
generalization (Heflin & Simpson, 1999). Training should also be ongoing, utilizing the most current research into best practices.

Continued exploration into which individuals respond best to ABA interventions is needed. Although ABA has the backing of an abundance of research, data have shown that individuals respond to interventions differently and at different rates (Lovaas, 1987). Further research should consider the intensity of intervention necessary to produce maximum results, since research has not yet determined the quintessential level of intensity needed (Reed, Osborne, & Corness, 2007). Finally, future studies need to examine combinations of teaching methodologies compared to a singular methodology.

More research into ABA in the classroom should also be conducted. Studies should focus on types and amounts of training necessary to develop educators competent in the application of ABA principles. An understanding of effective means and ways of teaching those principles should be an important consideration in the research.

Conclusions

With the alarming increase in the rates of autism, it is obvious that Special Education staff will be faced with more students with autism. It is essential that we find the most efficient, productive methods for teaching these students. Proponents of ABA have long claimed that ABA principles
are uniquely suited to the learning styles of individuals with autism (Leaf, & McEachin, 1999). This study has shown that ABA training has positively influenced educator perceptions of effectiveness in one district.
References:


Appendix A

ABA Training and Teacher Effectiveness Survey

My name is Tara Reilly and I am a K/1 SDC teacher in Fallbrook. This is my third year teaching; although I worked as an assistant for many years before becoming a teacher. As part of my Master’s Thesis, I am looking at a potential relationship between training in ABA, Applied Behavior Analysis, and educator perceptions of effectiveness working with students with autism. In other words, does training in ABA enhance educators' perceptions of competence and effectiveness? Do they feel better prepared and equipped to work with students with autism?

As part of this survey, you will be asked demographic questions, as well as questions about training you have received, how you use or don’t use that training, and if you believe that you are better able to meet student needs as a result of your training. You should be able to complete the multiple choice portion of the survey in less than fifteen minutes. If you would like to expand on any of your answers or leave comments for clarification, there is a space provided at the end. You will also have the opportunity to participate in a follow-up interview, if interested.

For purposes of this survey, I am using the following definition of ABA:

“Behavior analysis is a scientific approach to understanding behavior and how it is affected by the environment. Behavior refers to all kinds of actions and skills (not just misbehavior), and environment includes all sorts of physical and social events that might change or be changed by one’s behavior. The science of behavior analysis focuses on principles (that is, general laws) about how behavior works, or how learning takes place. Through decades of research, the field of behavior analysis has developed many techniques for increasing useful behaviors and reducing those that may be harmful or that interfere with learning. Applied behavior analysis (ABA) is the use of those techniques and principles to address socially important problems, and to bring about meaningful behavior change.”

Retrieved January 26, 2011
http://www.autismspeaks.org/whattodo/what_is_aba.php
1. How long have you been teaching or working with children?
   - less than 1 year
   - 1-5 years
   - 6-10 years
   - 11-15 years
   - 16-20 years
   - more than 20 years

2. In what grade(s) are students you work with or teach?
   - Pre-K
   - K
   - 1-2
   - 3-4
   - 5-6
   - 7-8

3. How many post-graduate units do you have?
   - 30-40
   - 40-50
   - 60-70
   - 70+

4. In what capacity(ies) do you serve students?
   - Designated Instructional Services
   - Instructional assistant
   - Teaching
   - Learning Center
   - Moderate/Severe SDC
   - Other ____________________________
5. How much training have you received in ABA, Applied Behavior Analysis?
   - None
   - 6 or fewer hours
   - 6-12 hours
   - 2-3 days
   - 4-5 days
   - More than 5 days

6. What types of ABA training(s) did you receive?
   - Manual/Book
   - Lecture
   - Video/Online
   - Hands-on/with Student

7. How often does your ABA Training influence the approaches, strategies, or interventions you use in the classroom?
   - Seldom; I use ABA one or fewer times per week
   - Sometimes; I use ABA one or fewer times per day
   - Often; I use ABA one or fewer times per hour
   - Constantly; I use ABA throughout the day

8. I use ABA to teach: (Mark all that apply)
   - Academics
   - Behavior
   - Communication
   - Functional skills
   - Motor skills
   - Social skills

9. What aspects/components of ABA do you use?
   - Analysis of antecedents
   - Analysis of consequences
   - Prompting
   - Reinforcement
   - Task Analysis
   - Other ____________________________
Please rate the following statements:

10. ABA Training has helped me identify appropriate antecedents and reinforcing consequences for my students.
   - Strongly Agree
   - Agree
   - No Opinion
   - Disagree
   - Strongly Disagree
   - NA

11. ABA Training has helped me provide appropriate modifications and interventions to better serve students.
   - Strongly Agree
   - Agree
   - No Opinion
   - Disagree
   - Strongly Disagree
   - NA

12. ABA Training has helped me motivate students and promote success through prompting and reinforcement.
   - Strongly Agree
   - Agree
   - No Opinion
   - Disagree
   - Strongly Disagree
   - NA

13. ABA Training has helped me teach academics; reading, writing, mathematics.
   - Strongly Agree
   - Agree
   - No Opinion
   - Disagree
   - Strongly Disagree
   - NA
14. ABA Training has helped me teach daily living/adaptive skills.

- Strongly Agree
- Agree
- No Opinion
- Disagree
- Strongly Disagree
- NA

15. ABA Training has helped me teach communication; labeling, pragmatics, and/or grammar.

- Strongly Agree
- Agree
- No Opinion
- Disagree
- Strongly Disagree
- NA

16. ABA Training has helped me teach social skills, play skills, and/or leisure skills.

- Strongly Agree
- Agree
- No Opinion
- Disagree
- Strongly Disagree
- NA

17. ABA Training has helped me reach my most severely impacted students.

- Strongly Agree
- Agree
- No Opinion
- Disagree
- Strongly Disagree
- NA
18. Are you interested in receiving further training in ABA, and if so, what areas are you interested in?

- Not interested
- Yes, Behavior
- Yes, Interventions
- Yes, Prompting
- Yes, Reinforcement
- Yes, Task Analysis

19. Would you be interested in participating in a follow-up interview?

- Yes; Please e-mail me @ reill007@csusm.edu;
- No

20. Are you interested in receiving a copy of the results of this survey?

- Yes; Please e-mail me @ reill007@csusm.edu
- No

Additional Comments: