WHAT EDUCATORS MUST KNOW ABOUT THE EFFECTIVENESS OF BEHAVIORAL INTERVENTIONS FOR CHILDREN WITH AUTISM

by

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List of Abbreviations

PDD-Pervasive Developmental Disorder

EMH-Educationally Mentally Handicapped

IEP-Individual Education Plan

ABSTRACT

Summary. The diagnosis of autism is on the rise. There are many misconceived definitions of autism, even in the educational profession.

Educators in all areas must become informed of behavioral intervention and modifications to help autistic students succeed.

This paper will reveal facts and information regarding behavior intervention and modification based on the Lovaas theory and method. It includes a case study of an eleven-year-old high-functioning autistic boy who has made great strides and is successful.

CHAPTER I

What Educators Must Know About the Effectiveness of Behavioral Interventions for Children with Autism

Due to the increasing number of children being diagnosed with Autism administrators, teachers and staff members in public schools need to be informed of effective behavioral interventions for these children. In order to educate these children with the least amount of frustration for the students, their parents and the school personnel, understanding these interventions for autistic behaviors is essential.

Those who work with children challenged by autism have dealt with the puzzling, and often times, difficult behaviors. The specific cause of autism has not been discovered yet, nor have any reliable cures. However, by employing various techniques and strategies with people who have autism, excessive behaviors can be reduced and deficit behaviors improved.

Autism is considered a subgroup of Pervasive Development Disorder (P.D.D.). Autism is thought to be the most severe of the P.D.D. continuum (American Psychiatric Association, 1994). Characteristics of P.D.D. include impairment of social interactions, impairment of communication skills, both verbal and non-verbal and impairment of imaginary play.

Often associated with autism are other symptoms such as: stereotypical and repetitive repertoires of restricted activities, delayed development of intellectual skills, impaired comprehension skills, abnormal eating and sleeping behaviors, inappropriate responses to sensory input, and self-abusive behaviors.

Another critical fact that seems clear from the research into autism is that while there is no cure for autism, there is hope for remediation.

Lovaas (1987) carried out a study of behavior modification or behavioral intervention. His study lasted fifteen years. Lovaas states the "the most promising treatment for autistic persons is behavior modification as derived from modern learning theory." He also states that the positive aspects using behavior modification techniques with autistic children include being able to build complex skills such as language, and, being able to reduce aggressive behaviors.

In the field of autism there are often more questions than answers. No single cure has been found. No two children with autism display exactly the same characteristics. Several facts are clear, however, regarding the research literature concerning autism. One is that many individuals with autism are also intellectually disabled.

Educators must not assume a high level of functioning in individuals with autism because of possible high competence. An autistic child may seem to be functioning at a normal or above-normal level of intellectual ability because of good verbal skills or exceptional mathematical ability. However, this same child is likely functioning at a below-normal level in other areas.

Many children and adults with autism can learn to carry out tasks and to function as independently as possible. As with all children, educators must provide the best educational program possible, one will enable their students with autism to grow and learn and to become optimally functioning adults in our society.

Problem Statement

Research has indicated that various types of interventions can be used to reduce autistic behaviors and increase appropriate behaviors in autistic children (Lovaas, 1987). The most promising treatment for children with autism is behavioral modification, or behavioral intervention. Lovaas (1987) argues that such treatment builds complex behaviors, such as language, and decreases negative actions, such as aggression. Research has indicated that behavioral intervention for autistic children results in substantial improvements in the overall functioning of young children with autism. (Maurice, 1995).

In a study by Lovaas (1987), nineteen autistic children received 40 hours a week of individual treatment. Forty-seven percent of the autistic children who received Lovaas' intensive behavior modification therapy for at least two years were able to successfully complete normal first grade classes. Outcomes reported by Lovaas also indicated that 47% of the young children given this form of therapy achieved normal functioning on IQ and educational placement evaluations after intensive early intervention (Lovaas, 1987).

The remaining children in the 1987 study, who did not "recover", made significant gains and were able to be served in classes with less restrictive environments than typical placements for children with autism. Lovaas' behavior modification methods have yielded the best outcomes of all service treatments currently used to serve young children with autism (Donovan, 1985). In a long-term follow-up of the study, the same percentage of children was in normal classes following two years of treatment. Thus, Lovaas (1987) argues that his program brings about improvement in most autistic children. Research has indicated that various types of interventions can be used to reduce

autistic behaviors and to increase appropriate behaviors in autistic children (Lovaas, 1987).

Behavior modification and intervention practice on children who are high functioning autistic produces more successful students than those who do not receive behavior modification and intervention. Research has indicated that behavioral intervention for autistic children results in substantial improvements in the overall functioning of young children with autism (Maurice, 1995).

Autism has a long past but a short history. As early as the late eighteenth century medical texts described cases of children who did not speak and who possessed unusual memory skills (McEachin, Smith, & Lovaas, 1995). According to Powers (1989), it was not until 1943 that the condition was given a name. In that year Dr. Leo Kanner, a child psychiatrist at John Hopkins University Medical School, described the common characteristics of eleven children he had seen between 1938 and 1943. These children shared several features, the most notable of which was extreme isolation or withdrawal from human contact beginning as early as the first year of life. According to Powers (1989), Kanner was convinced that autism was present from birth so he developed the term early infantile autism. Even today some professionals use the terms "infantile autism" and "early infantile autism" (Powers, 1989).

Starting in the 1960's, advances in the diagnosis and treatment of autism were made (Bettelheim, 1967). Teachers and therapists also began to use more advanced techniques, including applied behavior analysis, or behavior modification. These techniques teach important school and life skills to children with autism (Wilcox & Thompson, 1980).

Hypothesis

When children with Autism receive effective behavior interventions, such as applied behavior analysis or discrete trial training, they are more likely to be successful in the educational environment.

Limitations of the Study

Some parents and professionals have criticized the use of behavioral interventions for children with autism. Many critics claim that certain methods of behavior modification are not effective techniques (McEachin et al., 1995). Others have argued that behavior intervention treatments produce children with rigid, robot-like behaviors. In addition, some claim that behavior modifications use excessively aversive stimuli (Hudson, 1993).

This study is on a boy from a rural area in the mid-west region of the United States. His early years through upper elementary school are the focus of this study. The study was done to document the outcomes of this child's experiences during his school years as behavior modification and intervention were used in his home and in the school setting.

Differences were noted as he changed teachers and settings through the years. It is not possible to conclude that the differences were because of behavior modification and intervention as there were too many variables used. Some of the variables are differences in personalities of teachers and maturity of the boy as he grew.

Definition of Terms

Autism and high-functioning autism (PDD) were interchangeable terms used to identify the child on the autism spectrum disorder.

Early intervention programs are services initiated before the age of five years old.

Poor generalization refers to the inability to use the same skills in different areas.

Project ACCESS refers to a program through Southwest Missouri State University that offers accessible resources for teachers of students with autism and training in behavior modification and intervention.

Fragile X Syndrome is an inherited disorder caused by a defective gene on the X-chromosome.

DSM-IV is the acronym used for the Diagnostic and Statistical Manual of Mental Disorders, 4th edition.

Summary

Research has indicated that various types of interventions can be used to reduce autistic behaviors and to increase appropriate behaviors in autistic children (Lovaas, 1987). The most promising treatment for children with autism is behavior modification, or behavioral intervention. Lovaas (1987) argues that such treatment builds complex behaviors, such as language, and decreases negative actions, such as aggression.

CHAPTER II

REVIEW OF LITERATURE

The American Psychiatric Association's Revised Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1995) has been the reference for diagnosing Autism. The Diagnostic and Statistical Manual of Mental Disorders contains the "official" diagnostic criteria for identifying all mental and emotional disorders in children and adults. The DSM-IV outlines the following criteria for diagnosing autism: 1) Severely impaired social interaction, 2) Severely impaired communication and imagination, 3) Extremely limited interests and activities, and 4) First observed in infancy or early childhood.

Autism is a serious psychological disorder with onset in early childhood. Autistic children show minimal attachment, absent or abnormal speech, ritualistic behavior, and aggression (Lovaas, 1987). Approximately one-third of autistic children develop normally until somewhere between 1 ½ to 3 years of age; then autistic symptoms begin to emerge (Houten, Axelrod, Bailey, Favell, Foxx, Iwata, & Lovaas, 1996).

Theory

Research has identified several major symptoms of autism (Powers, 1989). The inability of children with autism to develop normal social skills is probably the most noticeable characteristic of autism (DeMyer, 1979). Children with autism do not interact with others the way most other children do. Some autistic children simply do not interact at all. They have great difficulty understanding and expressing emotion and show few signs of attachment (Powers, 1989). The child with autism may appear to be very uninterested in other people. They may avoid eye contact or appear to "look through" people

(Powers, 1989). This inability to relate to the world of other people is often the strongest indicator that a child suffers from autism.

Another symptom of autism is speech, language, and communication problems (Happe, 1995). Approximately 40 percent of children with autism do not speak at all. Others have what is called echolalia, a parrot-like repeating of what has been said to them (Powers, 1989). Sometimes echolalia is immediate and other times it is delayed. When echolalia is delayed it may involve the recitation of TV commercials, advertising jingles, or single words (Webster, Oxman, Konstantareas, & Mack, 1980). The autistic child does not use speech for communication, and what speech they do use may be repetitive and filled with illogical words and phrases. The voice of the autistic child may sound flat or monotonous, and they may have no apparent control over pitch or volume (Bettelheim, 1967).

Children with autism are unable to relate normally to objects and events (Powers, 1989). Children with autism have what is called a "need for sameness" and may become upset if objects in their environment or schedules are changed from their for their familiar placement or pattern. One explanation for the autistic child's need for stable routine may be their inability to understand and cope with novel situations (Maurice, 1995).

Researchers have found evidence of sensory impairment in one or more of the autistic child's senses. Hypersensitive hearing is one of the most common examples of sensory abnormalities (Dunlap, Koegel, & Koegel, 1996). Approximately 40 percent of autistic children experience discomfort when they are exposed to certain sounds or frequencies. Autistic children may cover their ears or engage in negative behaviors such as tantrums when these sounds are present (Happe, 1995). According to Powers (1989), while people respond to

much of what goes on around them, their brains filter out certain unimportant stimuli, allowing their attention to be focused on the most important information in the environment at that moment. Children with autism have difficulty with this "filtering out" process. They may overreact to sensory stimuli, or have almost no reaction at all (Powers, 1989). As part of their sensory problems, a child with autism may be fascinated with lights, color patterns, and shapes. They may be preoccupied with scratching or rubbing certain surfaces and may also avoid certain food textures--for example, "rough" textures (Donnellan, 1985).

Another symptom of autism is the significantly different way a child with autism develops. A child's skills at a given age may be slightly ahead of or behind most other children's and still be well within normal limits (Powers, 1989). For children with autism, however, this developmental process is not at all even with that of normal children. Their rate of development is quite different from normal children, (either relatively slow or extremely advanced) particularly with respect to communication, social, and cognitive skills. In contrast, motor development-the ability to walk, hop, climb stairs, manipulate small objects with the fingers-may be relatively normal or only slightly developed. In addition, sometimes skills will appear in children with autism at the expected time and then disappear (Lovaas & Bucher, 1974).

Research

There is increasing evidence that individual cases of autism can be caused by a variety of problems. Viruses may be a possible cause of autism (Powers, 1989). There is an increased risk in birthing an autistic child after exposure to rubella during the first trimester of pregnancy (DeMyer, 1979). There is indication that autism may be

influenced by genetics. For instance, there is a greater likelihood that two identical twins will have autism than two fraternal twins (Rutter, 1996). Also, if a mother has a child with autism her overall chances of having a second child with autism are between 2-3 percent (Webster et al., 1980). Otherwise, this frequency is actually fifty times higher than for parents who do not have a child with autism (Powers, 1989). Given the low incidence of autism in the general population, however, the risk of reoccurrence is still very small (Webster et al., 1980).

Scientists have only identified one specific genetic connection with autism- a condition called Fragile-X syndrome (Powers, 1989). Fragile-X syndrome is a recently discovered form of genetically caused mental retardation. Both sexes are affected by Fragile-X, with males usually most likely to be severely affected. This condition in which one part of the X chromosome has a defect, affects about 7-10 percent of people with autism (Powers, 1989).

Scientists do not know what causes autism, nor do they know exactly how autism affects brain structure, brain function, or brain chemistry (Happe, 1995). Although a number of different brain regions have been suggested as the site of damage, no consensus has been reached (Webster et al., 1980).

Behavioral intervention for young children with autism involves methods which breakdown skills into small, discrete tasks. The application of the general principles and procedures of behavioral intervention helps children 'learn how to learn' (Lovaas & Bucher, 1974). Autism is considered treatable and a wide variety of treatments and techniques are claimed to help (or even cure) people with autism (Rogers, 1996). Several studies have shown that early intensive intervention can result in dramatic improvements for children with

autism (Maurice, 1995). There is increasing evidence that behavioral intervention methods can produce comprehensive and lasting improvements in many important skill areas for most people with autism, regardless of age (Maurice, 1995).

Viewing early behavioral intervention from a social perspective provides a foundation for understanding the role of early intervention in supporting young children with autism. Children's skill changes should not be the sole focus of intervention efforts, nor should behavior interventions focus solely on the reduction of problem behavior.

The general principles and procedures of behavioral intervention include building complex behaviors, such as language, and decreasing negative behaviors, such as aggression (Lovaas & Bucher, 1974). Behavior modification procedures focus on teaching small units of behavior systematically (Maurice, 1995). Every skill the child with autism does not demonstrate--from relatively simple responses like looking at others to complex acts like social interaction--is broken down into small steps (Maurice, 1995). Appropriate responses are then followed by consequences that have been found to function as reinforcement. The response is more likely to occur at times when the reinforcer follows the child's response (Williams, Koegel, & Egel, 1981).

Researchers have suggested principles for using behavior modification techniques. These principles focus on developing and strengthening a new behavior as well as stopping inappropriate behavior and maintaining an established behavior (Schreibman, 1996). According to McCarney (1994), certain elements must be considered in order to effectively carry out the principles of behavior intervention. For example, language comprehension should never be assumed and social

understanding must be directly taught. The structure of the behavior intervention should focus on the individual autistic child's interests so that an incentive for communication can be created (McCarney, 1994). According to Dunlap (1996), intervention should focus its efforts on the establishment of new skills that are developmentally appropriate and serve useful functions for the child. Behavioral interventions should provide support in typical, inclusive environments and promote opportunities for community exposure and socially relevant interactions. In addition, behavioral intervention for children with autism should provide comprehensive, individualized family support (Dunlap et al., 1996).

Behavioral intervention can produce comprehensive and lasting improvements in many important skill areas for the autistic child. Behavioral intervention can also produce large improvements in specific areas like peer interactions and classroom behavior (McClannahan & Krantz, 1993). Behavior intervention must not focus solely on the reduction of problem behavior but also emphasize the ecological context in which the behavior occurs (Lovaas, 1987).

One of the keys to producing lasting treatment gains in children with autism is consistency. Many children with autism have great difficulty learning from the environment; they do not learn well from experience. One reason that children with autism need consistency is that they have trouble using the same skills with different people, places, or situations. This inability to use the same skills in different areas is called 'poor generalization' (Powers, 1989). Poor generalization can be minimized in the autistic child if responses to the child remain exactly the same (Lovaas et al., 1974). The conceptual basis for behavioral intervention is reinforcement (McCarney et al., 1994). High rates of aggressive and self-stimulatory behavior

are reduced by being ignored, by the use of time-out, and by the shaping of alternate, more socially acceptable forms of behavior (Houten et al., 1996).

The goals of behavioral intervention consist of building compliance towards elementary verbal requests, teaching imitation, and establishing the beginnings of appropriate toy play. Behavioral intervention emphasizes teaching expressive and early abstract language and interactive play with peers. The treatment also involves the teaching of varied and appropriate expression of emotion and observational learning (Maurice, 1995). The family system is the essential context in which the autistic child lives and grows thus early intervention treatment must have a major family focus if the treatment is going to produce effective outcomes (Tymchuk, 1974). The skills that are taught with the behavioral intervention method can be valuable to parents in the home environment as well as teachers in the classroom environment (Quill, 1995).

The most common form of behavioral intervention is applied behavior analysis. According to Rogers (1996), the strategies of applied behavior analysis assume that behavior is learned through consequences, which follow the behavior. If an autistic child likes the consequences following their behavior, they will demonstrate the behavior again. If the child does not like the consequences they will not exhibit the behavior again (Lovaas, 1987). Therefore, problem behaviors can be unlearned and appropriate skills can be substituted for them through the systematic use of rewards for good behaviors and removal of a stimulus for undesirable behaviors (Webster et al., 1980).

One specific method of behavior intervention that autistic children respond to well is visual scheduling. A visual schedule consists of specific symbols that represent an activity in the child's

day. Visual scheduling presents the abstract concept of time in a concrete and manageable form. This ability to predict time brings order and security to the autistic child, allowing him/her to spend time learning rather than frightened or worried. Each of the symbols represents a current activity in the child's day and is arranged in chronological order. The symbols are attached using Velcro or paper clips, allowing the autistic child to group the symbols and have an advance notice of upcoming activities (Krantz, MacDuff, & McClannanhan, 1993). Because autistic children value things remaining the same, the visual schedule makes transitions easier to adjust to (Krantz, MacDuff, & McClannahan, 1993). If the autistic child is unaware of what will happen to them next then they are more likely to engage in negative behavior. The child will become scared if they do not know what to expect, resulting in some cases in a tantrum. The visual schedule helps the autistic child to move from one activity to the next without disrupting their routine (Carr & Durland, 1985).

Another form of behavioral intervention for autistic children is formal compliance training. The steps of formal compliance training focus on giving a pattern of basic instructions and asking the child to respond (Quill, 1995). Because the autistic child often has a short attention span, they may need to be directed back to a task. The steps of formal compliance should be followed until the child either follows the directions or uses an appropriate form of behavior that communicates an understanding of the task. Directions may have to be repeated several times before the autistic child responds (Lovaas, 1987). Compliance training focuses on the reinforcement of behaviors that are different from or alternative to disruptive behaviors (Gelfand & Hartmann, 1984). The main intervention principle that this method is concerned with is reinforcing compliance and ignoring noncompliance.

The steps of formal compliance training begin with a verbal command and a five-second wait for a response. If the response is correct, the child is verbally or physically reinforced. If the child fails to respond or responds incorrectly the command should be repeated and the desired response from the child should be modeled. A final five-second wait is granted and if the child responds reinforcement is given, if not the steps are repeated again (Ozonoff & Miller, 1995).

Discrete trial training is a method of behavioral intervention that is used to maximize learning in autistic children (Quill, 1995). In this behavioral intervention the child is provided with clear messages and they immediately know if their response is correct and clear. There are four main components of the discrete trial method that need to be observed in order for the proper behavior to occur in the autistic child. The first is the use of a discriminative stimulus, which occurs when the desired instruction is given to the child. The discriminative stimulus lets the child know how and when to respond. It also lets the child know that reinforcement is available. The action or behavior given by the child as a result of the discriminative stimulus is known as the response. The response often follows the first initial direction that is given to the child (Wilcox et al., 1980). A response is the action or behavior given by the child as a result of the discriminative stimulus. A stimulus reinforcer is then introduced. A stimulus reinforcer is the feedback given to the autistic child that determines whether the behavior will increase or decrease in the future. The final characteristic that occurs is the prompt. It serves as the additional stimulus and facilitates the correct response. The prompts are any additional information that is given to the child if it is needed (McCarney, 1994).

Reinforcement plays a large role in the effectiveness of behavioral interventions for children with autism. According to Maurice (1995), reinforcement is the addition of a pleasant stimulus or the removal of a stimulus that is unpleasant. When one wants to increase the behavior of the autistic child then a pleasant stimulus, which is determined by that particular individual, is added after the behavior. For example when the child responds with an appropriate behavior or answer, they are rewarded for doing that behavior. It is essential in all methods of behavioral intervention that the autistic child be rewarded for appropriate behavior. Powers (1987) suggests being enthusiastic when giving praise. Whenever possible, provide physical contact: hugs or pats on the back. Even if a tangible reinforcer, such as food is used, always pair the reinforcement with praise so the child learns to appreciate praise alone (Powers, 1987). Autistic children tend to "obsess" in certain instances due to their insistence on things remaining unchanged (Lovaas, 1987). Charlop-Christy et al. (1996) assessed the effectiveness of using obsessions, such as food or praise, of children with autism to reduce their inappropriate behaviors. The application of providing obsessions as reinforcers in addition to mild reductive procedures such as time out was found effective (Charlop-Christy & Haymes, 1996). According to Charlop-Christy et al. (1996) the benefits of using the children's obsessions are substantial. First, there are no negative side effects and no increase in inappropriate behaviors in the nontreatment settings. In fact, three of the four children studied by Charlop-Christy decreased inappropriate behaviors during nontreatment work and play sessions. Charlop-Christy's study (1996) suggests promising techniques to decrease inappropriate behaviors. One example of a technique is providing reinforcement or obsessions upon the

nonoccurrence of an inappropriate behavior. This can be achieved with and without mild reductive procedures, such as time-out.

A "time out" is the removal of all reinforcement for a specified amount of time (Williams, Koegel, & Egel, 1981). Generally, it is sending the autistic child out of their environment, but it can be implemented by having the child sit in a chair, facing a blank wall. The use of time out can be effective although there are instances when its use can be a disadvantageous such as in the case of a child who engages in self-stimulatory behavior. Time outs should not last more than 2 to 3 minutes. According to McCarney (1994) the time out should occur at a time when the child needs to be calmed down or removed from a situation. The procedure is socially acceptable and can be very effective, especially in classroom settings. However, this method does not teach the child any new behaviors and it cannot be used with autistic children who engage in self-stimulatory behaviors. Examples of self-stimulatory behaviors that can be harmful include behaviors like whirling or head beating. Therefore, time-outs should not be prolonged nor should they be used when the problem behavior is potentially dangerous (McCarney, 1994).

Behavior intervention requires young children with autism to engage actively with their physical and social environments and provides them with consistent rewards. The use of behavioral intervention results in complete normal functioning for many autistic children (Maurice, 1995). Research also supports the theory of behavior intervention by suggesting that intensive behavioral intervention produces substantially better outcomes than other treatments for young children with autism (Carr & Durland, 1985).

According to Rogers (1996), six comprehensive intervention treatment programs have been designed to stimulate widespread changes

in young children with autism. Each of these programs has yielded positive outcomes. The programs varied in many ways, including different curriculum, different settings, different ages, and functioning levels. However, in the results of the six studies many similarities were observed. All the studies reported significant acceleration of developmental rates, resulting in IQ gains, improved social behavior and decreased symptoms of autism. In addition, these gains were accomplished within one to two years of behavioral intervention. The majority of treated children (73%) in these studies had useful communication skills by the end of the intervention period (Rogers, 1996).

There is little doubt that early intervention can produce large, comprehensive, lasting and meaningful improvements in many important aspects of children with autism. According to Maurice (1995), those improvements can amount to achievement of completely normal intellectual, social, academic, communicative, and adaptive functioning. A large majority of young children with autism benefit from early behavioral interventions. Most show substantial improvements in many adaptive, useful skill areas and reductions in problematic behaviors (Lovaas et al., 1974). Only a small portion (about 10% in Lovaas' study) has been found to make few or no improvements. The best-documented positive effect is improved intellectual functioning. The majority of the children studied by Lovaas (1987) made at least some gains in IQ scores over the course of 1-6 years of behavioral treatment. Slightly fewer than half made large gains (from levels indicative of moderate to severe mental retardation to levels in normal range), and only a small percentage made little or no gains (Lovaas, 1987). Improvements in language, social skills, play, self-help, and problematic behavior were also found for children

with autism who received behavioral intervention. Successful integration in regular schools is another positive effect that is supported by the effectiveness of behavioral interventions (Quill, 1995). Many children with autism who received at least two years of intensive behavioral treatment starting at an early age went on to participate in classrooms for typical children of the same age, some with little or no ongoing special support (Lovaas, 1987). Research has shown that the skills of children with autism who received some form of behavioral intervention actually persisted or continued to improve when they were placed in regular classrooms.

Despite all of the research that supports the effectiveness of behavioral intervention, many critics of the technique are still not convinced that it is beneficial to autistic children. According to Hudson (1993), an issue that has become the center of controversy relates to the extent to which the autistic child receiving physical assistance is truly independent. Hudson (1993) and other critics question whether the communication comes solely from the autistic child or from the assistance of an influencing person. Other critics claim that the behavioral intervention treatment produces "robot-like" features in the autistic child. An argument has been made which claims that behavioral interventions are simply a set of techniques and not a way of being (Powers, 1989). This is not a valid argument because the behavioral techniques focus on delivering messages to the autistic child with kindness, spirituality, respect, and the child's own right to self-determination and happiness.

This argument is found most often in cases of facilitated communication, in which the autistic child is assisted by another person to communicate. Facilitated communication is a technique that allows persons to communicate through the use of an augmentative

communication device, such as a computer or a modified typewriter (Happe, 1995). To many parents and teachers, facilitated communication is a technique that provides hope for the child with autism. It is a technique that, they think, may work with all if not most children with autism. Among the few studies conducted on facilitated communication were those reported by the Intellectual Disability Review Panel (1989). Based on their studies, the Panel concluded that where the facilitators had no access to the student's questions, there was no evidence that the student's were able to communicate independently. This argument against facilitated communication as a method of behavioral intervention claims that autistic children are merely "puppets" of their facilitator (Hudson et al, 1993). In response to this argument interventions must influence positively the behavior and functioning of children with autism thereby enabling them to become more socially acceptable. Thus, regardless of what individuals believe about facilitated communication, its worth must ultimately be determined by whether or not it does what it is supposed to do. Hudson (1993) found that the use of facilitated communication by young autistic children was generally not valid. He concluded that the facilitator exerted substantial influence. A critical issue is the extent to which facilitators are aware that they are influencing the communication of the autistic child.

Contrary to what some critics have said behavioral intervention does not necessarily result in children who merely "act normal" (Maurice, 1995). If that were true, then the children who achieved the best outcomes would have not demonstrated sufficiently flexible behaviors, which could be judged normal by teachers and examiners who did not know their history of autism. Behavior interventions are not based on teaching autistic children to act normal. They are based on

teaching the child ways to be able to act normal and to succeed in a particular setting (Maurice, 1995). The treatment is about using a strategy that is based on rewarding positive behaviors. For example, paying attention to the task at hand in order to increase the autistic child's independence (Powers, 1989).

Another argument against behavioral intervention is that this technique employs the use of aversive stimuli. An aversive stimulus is a form of punishment process in which the consequences for a behavior reduces the probability that the behavior will occur again in the future (DeMyer, 1979). According to Powers (1989), an aversive stimulus is simply considered to be an extreme form of punishment. In response to the arguments introduced by the critics, the Autism Society of America has adopted resolutions regarding the use of punishment. "Positive programming" is now being used as an alternative to aversive conditioning and to reduce severe behavior problems through the use of strategies based on reinforcement (Wilcox et al., 1980). Some intervention programs for children with autism may use punishment under certain conditions. However, they will concurrently teach another skill to replace the behavior to be reduced. Methods of behavior interventions do not use excessively aversive stimuli (Tymchuk, 1974). A "no" is not a shout, it is an informational "nope, try again" kind of "no". Yelling and hitting is not used in behavior interventions; instead a simple motivation to learn is introduced by offering the child rewards and lots of verbal praise. The questions raised about aversive stimuli in behavioral intervention do not appear to apply to the intervention programs used today.

A final argument against behavioral interventions is that it produces "robot-like" behaviors in the child. Some critics claim that the methods of behavioral intervention simply teach the autistic child

how to imitate someone else and not act on their own (Hudson, 1993). Methods of behavioral intervention consist of first developing the ability to sit, make eye contact, and then non-verbal imitation. For example, the child is asked to do something simple like touch their head but because they cannot imitate they will not do anything. Someone will then raise the child's hand and touch their head for them; eventually the child will be able to do the process on their own (Lovaas, 1987). This example shows that the ability to imitate should not be viewed in bad terms but in a way that is beneficial to the autistic child's behavior.

Summary

In order to reduce autistic behaviors and to increase appropriate behaviors, various types of interventions are used. Although some children are given medication to improve their overall behavior, there is not a certain drug that is proven to be effective in treating the symptoms of autism (McEachin et al., 1995). The most promising treatment for children with autism is behavior modification, or behavioral intervention.

CHAPTER III

METHOD: CASE STUDY

Introduction

Many children with autism who received at least two years of intensive behavioral treatment starting at an early age went on to participate in classrooms for typical children of the same age, some with little or no ongoing special support (Lovaas, 1987). Research has shown that the skills of children with autism who received some form of behavioral intervention actually persisted or continued to improve when they were placed in regular classrooms.

Current Placement

Michael is a ten year old boy who was diagnosed medically with autism at the age of three. Michael currently attends public elementary school as a fifth grader in a classroom of twenty-one students. He has an IEP and receives reading and math instruction from the EMH resource room. Michael has an IQ of 99 from his last testing but is able to receive help from the EMH teacher because of his autism diagnosis or label. His resource room consists of four other special needs students. Michael goes to Social Studies and Science classes with his homeroom classmates each day. He has an aide who goes to all of his core subject classes with him. She also helps with other children in those classes who may need some assistance. Michael attends music, physical education, art and recess independently. He also receives occupational and physical therapy once per week in addition to language therapy twice a week.

Michael's mother reports that her pregnancy with Michael was normal with no complications. Due to previous cesarean section deliveries after an emergency delivery of a still born baby boy in November,1988, Michael's birth was scheduled for March 29, 1993. However, labor began in the late evening of March 14, so Michael was delivered at 1:15 am on March 15, 1993. Michael aspirated fluids during the delivery and was taken to ICU for 6 hours of monitoring. He was brought to his mother's room by 10:00 am with no noted health concerns. Mother and baby stayed in the hospital for 3 days.

Developmental History and Delay

The mother reports that Michael met all of his milestones according to age appropriate checklists. He began speaking words and phrases around two years of age. However, around 36 months of age the language began to slow down, it continued to regress until it almost stopped completely. Michael began to repeat words and questions directed at him and not initiate or maintain any type of conversation.

Michael's daycare provider began questioning his hearing ability and reporting some unusual actions and reactions from his daily routine. Michael's parents took him to an Ear, Nose and Throat specialist who determined that he did not have a hearing problem. Michael's pediatrician casually mentioned Autism to his mother but said that maybe it was just a language delay. Michael's parents took him to a Speech and Language pathologist who did testing on Michael. The testing concludes that he had Pervasive Developmental Disorder (PDD) with high-functioning autistic tendencies.

Family

Michael's mother is an educator with a master's degree. His father is a high school graduate with a journeyman certificate in sheet metal. Michael has a brother, Tony who is 8 years older than Michael.

He also has a sister, Abby, 5 years older than him. Michael's parents began investigating Autism through as many resources as they could find. There was much research done on the internet and many books were read.

Service Agencies

Between the ages of three and five, Michael was involved with several agencies. Judevine services visited the home for an evaluation of Michael. Michael's parents became increasingly frustrated as results were slow in coming. Nearly eight months passed before any type of response from the evaluation was given, and then many inaccurate facts and observations were written into the report.

Michael began speech and language therapy with the language therapist at the elementary school where Michael's mother taught. Some improvements were noted; however Michael's parents learned that many professionals were not knowledgeable enough about high-functioning autism. It became almost a full time job advocating for Michael and searching for appropriate services. Michael's parents felt fortunate to be involved with a school district that truly cared about their child and helped in every way they could.

Michael attended Early Childhood Special Education classes three days a week in a neighboring school district. This school was twenty miles a way and was the closest available with such a program. The home school district paid all costs and provided transportation to and from the program, including summer sessions.

When Michael's parents found out about the ACESS program the school district provided training for all of Michael's present and future teachers to attend, as well as his mother. When Michael's parents learned of a locally ACCESS certified teacher in a neighboring

school district the home district paid for her to tutor Michael two days a week after school.

Michael attended mainstream kindergarten without his aide. His teacher worked to make sure he was accepted by his peers and helped him learn many of the basics. Michael was not very verbal during this time and it was difficult to figure out what he knew versus what he was not able to communicate (receptive language vs. expressive language).

His first grade year was the beginning of his tutoring after school. His teacher continued to do everything she could think of to help Michael succeed in the classroom and with his peers. Although he did not verbally express much during school time, Michael was happy at home and was positive about school.

An Aide was assigned to assist Michael for his second grade school year. Michael was beginning to realize and express the differences between himself and his peers. He was nervous and edgy during much of the school year. He did not like to make any mistakes or do anything wrong. He felt when someone was corrected for misbehavior that he was being corrected as well. He did not have the same enthusiasm for school that he had the year before. His aide helped him deal with the different situations. His teacher and aide also recommended that Michael receive additional help in the areas of math and reading. His math skills were close to his peers at the beginning of second grade but the gap soon widened. His reading skills were lacking and he was not making much progress. Michael began seeing the EMH teacher more informally and she began to set up a schedule and program for him.

Michael's third grade teacher was also a neighbor and close friend of the family. He began third grade with confidence and a whole new comfort level because he knew his teacher so well. Michael was able

to relax and enjoy the classroom environment. He attended his reading and math classes in the EMH resource room with his aide and was included in his regular classroom with his peers for all other activities and curriculum. His teacher and aide helped him show what he knew and he was able to then gain respect and acceptance by his classmates. The classroom atmosphere was very positive and cheerful and Michael's attitude for school was as well.

Michael's fourth grade teacher had not had any formal training in working with high-functioning autistic children. However, her love for kids and teaching helped Michael learn and thrive in her classroom. His aide since second grade moved on with him and her quiet help and guidance not only helped him but eased the burden on the teacher. She could rely on his aide to modify assignments appropriately and help with any communication difficulties.

By this time Michael had become much more verbal and initiated conversations with others. The EMH teacher told his parents that everything he says now makes sense and is correct. The listener only needs to know where he is coming from to realize that his responses to many questions, although not the standard answers, make perfect sense. The teacher told his parents many times that her objective with Michael is not to make him think and respond like everyone else, but to figure out how he interprets the world and help him cope and adapt so that others will understand him.

This EMH teacher has participated in all of the training sessions conducted by Project ACCESS. She has also attended other seminars and conferences on Autism. She notes that each child is unique and must be a taught/guided in his own way demonstrating that IEP's truly are Individual Education Plans.

Summary

Michael is now in the fifth grade and continues to attend reading and math classes in the EMH room. The rest of the school day Michael spends with his peers in various classes and activities.

Michael's parents are grateful that he is in a school district with teachers who are willing to listen to his parents concerns and desires. The attitude of helpfulness and interest in their child is truly appreciated. Michael's parents want him to be happy when he grows up, regardless of what career path he chooses. They want him to have friends and get along with his peers. Their worst fear for Michael would be for him to be socially isolated, made fun of or to be looked on as strange.

Thanks to the training in behavior intervention and modification for Michael's teachers, aide, and parents, he has overcome many situations that would otherwise have been impossible for an autistic child.

CHAPTER IV

RESULTS

Early intervention for young children with autism is an endeavor with great potential for meaningful outcomes that can be apparent very rapidly and that can last throughout the course of the child's development. The outcomes for the autistic child who receives behavior intervention include a variety of beneficial results. According to Dunlap et al. (1996) intervention that is focused on the development of skills rather than on the reduction of problem behavior and that recognizes that the child is a member of complex social systems holds the most promise of having an impact on the development of the young child. The outcome of the behavioral intervention approach is that problem behaviors are recognized as communicative expressions, or a failure to communicate. Instruction can replace the problem behavior with a more effective, conventional, acceptable, and desirable alternative (Dunalp et al., 1996).

Results

Behavioral intervention may not succeed in completely eliminating certain behaviors, but it can aid in making normal functioning possible. After receiving early intensive behavior intervention treatment many autistic children are included in regular classrooms (Quill, 1995). From a behavioral perspective, it is best to teach children with autism in contexts that are as similar as possible to those in which their same-aged peers learn. It makes sense to provide behavioral intervention to very young children with autism in the classroom (Watson, Schaffer, & Schopler, 1989). Teachers are able to help autistic children better follow directions, listen, and interact with peers through the use of behavioral intervention methods. The

teacher must provide a structured environment in which the autistic child can learn (Maurice, 1995). Teachers use positive reinforcers in order to reward the child for a positive behavior. Such reinforcers may include the use of a certain toy or a favorite computer game. Negative reinforcers can be issued by the teacher in order to show the autistic child that his/her behavior was inappropriate (Lovaas, 1987). Inclusion of the autistic child in the classroom is an outcome that research has proven to be very meaningful and beneficial (Quill, 1995).

Teachers who have an autistic child in their class should understand that consistency is vital to the child's ability to learn. The methods of behavioral intervention should be implemented in a trial and error fashion (Lovaas et al., 1974). The teacher needs to be flexible in terms of learning new ways to focus on the child's behavior and learning.

The development of social skills is another outcome from behavior intervention that has produced lasting benefits for children with autism. The ability to be able to socially interact with peers is a direct outcome of behavior intervention methods experienced by the autistic child. Early behavioral intervention strategies focus on improving the quality and frequency of social interactions for children with autism (Brown & Prelock, 1995).

A final outcome for the child who receives behavioral intervention is appropriate behaviors. Research (Lovaas, 1987) has proven that behavior intervention increases appropriate behaviors such as social initiations while decreasing those behaviors that are unacceptable. By allowing for social initiations to occur, the autistic child is given the opportunity to further develop appropriate behaviors (Demyer, 1979).

Summary

Research relating to behavioral interventions for children with autism has indicated substantial improvements in the overall functioning of the child. Using behavior intervention treatments, such as applied behavior analysis, can reduce autistic behaviors and increase appropriate behaviors in children who suffer from the disorder. Overall, the outcome for the child who receives some form of behavior intervention includes improvement in their overall functioning and development.

CHAPTER V

DISCUSSION

Introduction

Educators must not assume a high level of functioning in individuals with autism because of possible high competence. An autistic child may seem to be functioning at a normal or above-normal level of intellectual ability because of good verbal skills or exceptional mathematical ability. However, this same child is likely functioning at a below-normal level in most other areas.

Many children and adults with autism can learn to carry out tasks and to function as independently as possible. Educators must provide the best educational program possible, one which will enable their students with autism to grow and learn and to become optimally functioning adults in our society.

Implication for Effective Schools

High functioning children with autism encounter problems in school settings that differ from those who are not high functioning. Because of their near-average, average, or superior intelligence levels, they may not receive many special services in a school setting. These children may be left on their own to cope the best they can with the complex social expectations demanded in a school environment. They may have trouble attending to tasks and may perseverate on their own obsessions during class time. They may be ridiculed by classmates because of their odd behaviors and mannerisms. Some high-functioning autistic children; however have special interests or obsessions that can lead to relatively successful interactions with others.

Recommendations

A common problem for high functioning people is the expectations that others have of them. "The more capable an autistic person appears to be; the more likely it is that he will be expected to manage his own affairs without supervision." (Frifth, 1991, p.195). However, this is not always possible. High-functioning autistic individuals can get confused and frustrated by these normal, everyday expectations.

Another recommendation deals with society's perceptions of people with autism. One should not misinterpret the social awkwardness of high-functioning individuals to mean that they do not have friends. (Wing 1992). What seems to be happening is that "their lack of understanding of the subtle rules of social interaction and communication: (p.40) prevents them from forming or even initiating a relationship. Working with children diagnosed with high-functioning autism is usually positive. They often have excellent memories and good imaginations which enable them to do well in school. (Moss, 1994.

Since high-functioning children usually appear like typical children, many people misinterpret their abilities and expect normal academic and social functioning skills.

Summary

Educators must provide the best educational program possible, one which enables their students with autism to grow and learn to become optimally functioning adults in our society. In order to help people with autism to function optimally, intervention must be early; and it must be appropriate for each child's specific needs. Our educational goal should be to increase the likelihood of successful adult adjustment for people with high-functioning autism. Teachers and parents of these children are encouraged to seek out the best

educational practices available to date and to implement programs which will enhance the growth and development of the child.

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