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A study of the effects of the verbal behavior approach in teaching young children with autism

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A STUDY OF THE EFFECTS OF THE VERBAL BEHAVIOR APPROACH IN TEACHING YOUNG CHILDREN WITH AUTISM

by
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ABSTRACT

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The purpose of this study was to examine the effect of the implementation of the Verbal Behavior approach with young children with autism. The participants included eight boys between the ages of three and five who are currently placed in a self-contained classroom for students with autism. Using the Verbal Behavior protocol, baseline data was collected for all participating students in the area of verbal communication. Data was also taken for three students with violent or aggressive behaviors. During the intervention, when the Verbal Behavior approach was provided, goals were developed for each student and their performance data were collected daily for 20 weeks. The results showed that all students improved their verbal communication skills in prompted, unprompted and independent communication situations. The results also showed that the student's aggressive behaviors were consistently decreased and eventually extinguished.

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Last but not least, I want to thank my students for giving me a reason for wanting to know.

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CHAPTER ONE

INTRODUCTION

Autism Spectrum Disorder (ASD) is defined as a variable developmental disorder that appears by a child's age of three. It is characterized by impairment of the ability to form normal social relationships, communicate with others, as well as possibly stereotyped behavioral patterns (Wikipedia, 2007). Autism is listed in the Pervasive Developmental Disorder (PDD) category, which refers to a group of five disorders (i.e. Autism, Rett Syndrome, Childhood Disintegrative Disorder, Asperger Syndrome, and Pervasive Developmental Disorder Not Otherwise Specified) characterized by delays in the development of multiple basic functions including socialization and communication (World Health Organization, 2006).

According to the Autism Society of America (2007), the number of children diagnosed with ASD is now six out of every 150 births in the United States, which is an increase of 16% compared to previous data. The Governor's office of New Jersey states that the number of children diagnosed with ASD is now one in every 96 births in the state, which is alarming (Office of the Governor, 2007). In current years, more and more students with ASD and PDD are placed into regular education classrooms with their non-disabled peers because of the emphasis on inclusive education (Autism Society of America, 2007). Unfortunately, many children with autism do not have the skills required to achieve success in regular education classrooms and they are placed into self-contained special education settings where the class size is small and the curriculum is highly structured, and particularly designed for this group of students.

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Educational practices for children with autism have been debating for years. Educators are continually striving to meet the needs of this group of students and there is continuing controversy over which educational method is the most effective in teaching students with ASD and PDD. How to provide appropriate education to meet the needs of these students becomes a critical question.

Statement of the Problem

Autism is a spectrum disorder. Although it is defined by a certain set of behaviors, children and adults with autism can exhibit any combination of these behaviors in any degree of severity. Two children, both with the same diagnosis of autism, can act completely different from one another with varying capabilities. More important than the term used to describe autism is understanding that whatever the diagnosis is, children with autism can learn and improve when appropriate treatment and education are provided (Autism Society of America, 2007).

Children with autism may display some of the following characteristics: insistence on sameness; resistance to change; difficulty in expressing needs, using gestures or pointing instead of words; repeating words or phrases in place of normal, responsive language; laughing (and/or crying) for no apparent reason showing distress for reasons not apparent to others; preference to being alone; aloof manner; tantrums; difficulty in mixing with others; unwilling to cuddle or be cuddled; little or no eye contact; unresponsive to normal teaching methods; sustained odd play; spinning objects; obsessive attachment to objects; apparent over-sensitivity or under-

sensitivity to pain; no real fears of danger; noticeable physical over-activity or extreme under-activity; uneven gross/fine motor skills and/or non responsive to verbal cues; and acting as if deaf, although hearing ability is in the normal range (Autism Society of America, 2007).

Of those, challenging behaviors appear to be a serious problem. These children present aggressive behaviors such as acting out, biting, kicking, spitting, or hitting themselves or others with objects. Some children may act out in violent ways. Understanding why these behaviors occur and addressing them in a positive way can help prevent future occurrences. According to Public Broadcasting System (PBS) Parents (2007), all behaviors present are a form of communication and there is always a reason for the behavior, which is called function. For example, autistic children sometimes have trouble communicating with others because they may not know the words to describe how they are feeling or what to do in a difficult situation. Thus, these children's challenging behavior always serves a purpose or function. That purpose may be getting someone's attention, escaping from an activity, or gaining sensory pleasure. There is always a reason behind their behavior.

Educational Programs

Based on suggestions from pediatricians and neurologists, parents of young children are encouraged to seek out programs with Applied Behavior Analysis (ABA) when their child is initially diagnosed with autism. ABA is a systematic process to modify observable behavior through a manipulation of the environment.

Skinner (1957) originally developed the principles of Applied Behavior Analysis. Many behavior analysts have adopted these principles and incorporated

behavior management strategies and teaching structured learning into classroom settings. Skinner's analysis has become a conceptual guide for educators working with young children with autism (Carbone, 2007).

The ABA process starts with clear definitions of a behavior in observable terms and is measured carefully by direct observations, with independent verification by secondary observers. An initial assessment is followed to determine skills that the learner does and does not have. Selection of treatment goals for each individual is guided by data from the initial assessment, and a curriculum scope and sequence that list skills in all domains e.g. learning to learn, communication, social, academic, self-care, motor, play and leisure, etc. These skills are divided into smaller components of skills and sequenced developmentally from the simple to complex. The overall goal is to help each learner develop skills that will enable him or her to be as independent and successful as possible in the long term (Green, 2007). Its principles are derived from extensive basic research. It is comprised of an experimental approach to manipulating the environment and tracking alterations in behavior (Chiesa, 2004).

Since the early 1960's, many researchers have documented the effectiveness of ABA principles and methods for building a wide range of important skills such as verbal communication to reduce problem behavior such as tantrums and self-injurious behavior of individuals with Autism (Green, 2007). As indicated by Ghezzi's report (2007), great strides have been made in the education and treatment of young learners with ASD and these advances can be attributed to ABA as it pertains to developing and refining methods of teaching children with autism.

one of the first pioneers to provide evidence that the behavior of autistic children can be modified through teaching. DTT is one of the instructional strategies that incorporate procedural theories of ABA into instruction. This instruction involves (a) breaking skills down into specific components, (b) teaching one behavior at a time following sequential steps and (c) rewarding positive behavior to reinforce performance. Once basic skills are acquired, learning can be carried over into a natural environment (Fenske, et al., 2001). It is found that the Lovaas' technique was also known for its use of aversives to punish undesired behaviors. This form of teaching, however, can be difficult for young learner as they can be a challenge for teachers to teach.

The Verbal Behavior Approach, developed by Sundberg and Carbone (1996), is also an effective method for teaching students with ASD, PDD with similar developmental disabilities (Burk, 2007). Their theory is based upon the research of ABA with an emphasis on functional communication using Skinner's analysis of verbal behavior (i.e. classification of language by its functions) to teach language and other related skills. According to Skinner's analysis, language could be analyzed into a set of functional units, with each type of operant serving a different function. VB is a type of ABA with a focus on Skinner's analysis of verbal behavior. It is the application of the science of behavior analysis to teaching verbal behavior (Burk, 2007).

Purpose of the Study

The purpose of this study is to examine the effects of the Verbal Behavior Approach (VB) to language acquisition on a select group of preschool children diagnosed with autism. Specifically, this study will document the learning process of communication skills in children with autism as well as their behavioral changes when the VB program is implemented.

Significance of the Study

In the field of autism, different instructional strategies are used. These strategies include Applied Behavior Analysis, Discreet Trial Teaching, and Verbal Behavior Approach. It is found that the effect of each strategy varies among the student populations. This study will use the VB approach to monitor the verbal communication and behavior changes of children with autism in a self-contained classroom in a preschool. Specifically, this study will document the techniques used within the VB curriculum in assisting children with autism in acquiring language and social skills. It attempts to evaluate the effect of VB to provide valuable information to special education teachers who are working with children with autism.

Operational Definitions

The following terms are used in this study:

1. Aggression: a forceful action or procedure (as an unprovoked attack) especially when intended to dominate or master.
2. Communication: expressing needs or desires.
3. Following Routine: conformity in fulfilling official requirements.

4. Self-Injurious Behavior: any behavior that can cause tissue damage, such as bruises, redness, and open wounds of oneself. The most common forms of these behaviors include head-banging, hand-biting, and excessive scratching or rubbing.
5. Self-Stimulatory Behavior: repetitive body movements or repetitive movement of objects to entertain oneself.
6. Taking Turns: the joint use of resource or space.
7. Tantrum: a fit of bad temper.
8. Verbalization: to express something in words.
9. Violence: exertion of physical force so as to injure or abuse.

Research Questions

This study will address the following questions:

1. Will Verbal Behavior Approach increase speech and language skills of children with Autism Spectrum Disorder or Pervasive Developmental Disorder?
2. Will Verbal Behavior Approach increase appropriate social behavior of children with Autism Spectrum Disorder or Pervasive Developmental Disorder? (i.e. requesting needs and wants)
3. Will Verbal Behavior Approach reduce inappropriate behavior of children with Autism Spectrum Disorder or Pervasive Developmental Disorder? (i.e. temper tantrums, self-injurious behavior, aggression and violence)

CHAPTER TWO

REVIEW OF THE LITERATURE

Autism refers to a brain development disorder that impairs social interaction and communication, and causes restricted and repetitive behavior, starting before a child is three years old. Autism is distinguished by a pattern of symptoms rather than one single symptom. The main characteristics are impairments in social interaction and communication with restricted interests and repetitive behavior (Wikipedia, 2007). Educationally based programs are often the only form of intervention given to children with Autism Spectrum Disorder (ASD) and are often the only support that their families receive (Reed & Osborne, 2007). Often these interventions are offered early in the child's development and there is a perception that interventions offered early are more effective than those offered later (Lovaas, 1987). A number of early-teaching interventions have been suggested as offering benefit to some children with ASD.

This chapter reviews research articles on autistic children's behavior characteristics, educational programs applied in the field and their effects on teaching children with autism.

Behavior Characteristics of Children with Autism

During childhood, autistic children may fall behind their same-aged peers in the areas of communication, social skills, and cognitive development. In addition, dysfunctional behaviors may start to appear, such as self-stimulatory behaviors, repetitive, non-goal directed behavior, rocking, hand-flapping, self-injury, sleeping and eating problems, poor eye contact, and insensitivity to pain, hyper-/hypo-activity,

and attention deficits. One common characteristic is the individual's insistence on sameness or perseverative behavior. Many of these children become overly insistent on routines. For example, if a routine is changed, even slightly, the child may become upset and tantrum. Some common examples are: drinking and/or eating the same food items at every meal, wearing certain clothing or insisting that others wear the same clothes, and going to school following the same route. One possible reason for 'insistence on sameness' may be the person's inability to understand and cope with novel situations (Autism Society of America, 2007).

The Autism Society of America (2007) also indicated that many autistic individuals seem to have impairments in one or more of their senses. This impairment can involve the auditory, visual, tactile, taste, vestibular, olfactory (smell), and proprioceptive senses. These senses may be hypersensitive or hyposensitive, resulting in the person experiencing interference such as in the case of tinnitus, (a persistent ringing or buzzing in the ears). As a result, it may be difficult for individuals with autism to process incoming sensory information properly.

Sensory impairments may also make it difficult for the individual to withstand normal stimulation. Some autistic individuals are tactilely defensive and avoid all forms of body contact, others have little or no tactile or pain sensitivity (Autism Society of America, 2007). Furthermore, some individuals with autism seem to crave deep pressure. Another example of sensory abnormalities is hypersensitive hearing. The Autism Society of America (2007) also found that approximately 40% of autistic individuals experience discomfort when exposed to certain sounds or frequencies.

These individuals often cover their ears and/or tantrum after hearing sounds such as a baby's cry or the sound of a motor.

Instructional Programs for Children with Autism

There are different instructional programs for children with autism. The prominent three methods are: Applied Behavior Analysis, Discreet Trial Teaching and Verbal Behavior Approach.

Applied Behavior Analysis

Applied Behavior Analysis (ABA) refers to the application of the science of behavior and incorporates the theory of antecedent/stimuli, behavior and consequence/outcome into instruction. The key aspects of ABA include observing current behavior for topography; frequency, antecedents and consequences; breaking down desired skills into steps; teaching the steps through repeated presentation of discrete trials and collecting performance data to evaluate if there should have any changes over time (Wikipedia, 2007). In general, these approaches share a number of common features including (a) the one-to-one teaching of children with autism by adult tutors; (b) a discrete trial with reinforcement-based method; and (c) an intensive teaching regime of up to 40 hours a week.

The ABA theory is that behavior rewarded is more likely to be repeated than being ignored (Autism Society of America, 2007). Current debate has centered on ABA techniques as an intervention for ASD problems according to Reed and Osborne (2007). Wallin (2007) states that ABA is a framework for the practice of a science, but not a specific program. The children undergoing this approach made gains of up

to 30 IQ points and just less than half of these children appeared to not be noticeably different (Gabriels et al., 2001).

Baer, Wolf, and Risely (1967) outlined seven essential elements of an ABA-based program:

- The program must be applied. The behaviors that one chooses to focus upon should have some social significance.
- The program must be behavioral. The environment and physical events should be recorded with precision.
- The program must be analytic. There should be clear and convincing evidence, through carefully collected data, that the intervention is responsible for a change in a behavior.
- The program must be technological. The techniques that one uses should be described completely enough to allow for duplication by another individual.
- The program must be conceptually systematic. There should be relevance to established and accepted principles.
- The program must be effective. The program should seek to change the targeted behavior to a meaningful degree.
- The program should display some generality. A change in behavior should be seen in a wide variety of environments, or should spread to a wide variety of related or similar behaviors.

According to Osborne and Reed (2007), there is a debate on the effect of ABA for teaching students with autism. In their study, three early teaching interventions were

monitored: ABA, special preschool placement, and portage. The children were studied over a 10-month period of time during which they received a high-intensity of one-to-one teaching session for two to three hours. Tangible reinforcement was used including food-and preferred activities together with verbal praise and chosen activities. Results showed that the children in the ABA condition made greater intellectual and educational gains than the children in the other program. They also made greater educational gains than those in the regular preschool program.

Harris (2003) pointed out that high intensity teaching with ABA format for the first year may result in faster and more successful mainstreaming and reduction in overall treatment costs, as high intensity early in treatment may reduce the need for intensive treatment in subsequent years. Participants demonstrated statistically significant improvements in language, cognitive ability, adaptive behavior, and overall pathology following three years of treatment. The first year's treatment intensity was highly predictive of outcome, with 60% of the children achieving normal cognitive, behavioral and educational functioning following the three years of treatment.

There is a concern about ABA. There is some confusion about ABA because of the fact that many professionals have not been trained in its use. While physicians, teachers, school administrators, psychologists, and social workers require licenses to work in their fields, they may not be knowledgeable about the use or benefits of ABA (Luce, 2002). States are now beginning to offer specific programs to certify Behavior Analysts who are qualified to apply the ABA approach.

Luce (2002) also recommends that a caregiver should inquire about a professional's level of expertise before selecting someone to provide a behavioral program for a child. While much of the day-to-day work in a behavioral program can be completed by individuals with minimal credentials, their supervisors should 1) hold a master's or doctorate degree in a human service field, 2) have experience working with individuals similar to the child—such experience should include a practicum or internship under the supervision of an experienced behavior analyst, and 3) maintain membership in the Association of Behavior Analysis or one of its chapters.

Discreet Trial Teaching

Discreet Trial Teaching (DTT) is another educational approach for teaching children with autism to receive strong empirical support (Downs et al., 2007). It has been reported that 47% of children with autism taught through an organized early intensive curriculum employing DTT instruction achieved normal levels of intellectual and academic functioning after two to three years of treatment and that their gains were maintained over several years (Lovaas, 1987; McEachin, Smith, & Lovaas, 1993).

A discrete trial is a single cycle of a behaviorally based instruction routine. A particular trial may be repeated several times in succession, several times a day, over several days (or even longer) until the skill is mastered. There are four parts, with an optional fifth to a discrete trial. The first component is the discriminative stimulus, which is the instruction or environmental cue to which the teacher would like the child to respond. The second component is the prompting stimulus. That is a prompt

or cue from the teacher to help the child respond correctly. The third component is the response, which is the skill or behavior that is the target of the instruction, or a portion thereof. The reinforcing stimulus, the fourth component, is a reward designed to motivate the child to respond and respond correctly. The final component is the inter-trial interval, which is a brief pause between consecutive trials (Wallin, 2007).

According to Wallin (2007), the discriminative stimulus is a specific environmental event or condition (a stimulus) in response to which the teacher would like the child to exhibit a particular behavior. The desire is that the child begins to discriminate certain stimuli such as teacher/parent/peer requests, important environmental events, etc. from the background noise of everyday life, and ideally to recognize the stimuli from the background noise.

Additionally, Wallin (2007) found that the response of the child is the behavior that the child exhibits as a result of the discriminative stimulus. It means the response that the instructor is interested in is only the result of the given instruction or other targeted event. If the child is reacting to stimuli other than those that the teacher has targeted, the instruction may need to be delivered in a different manner. The teacher needs to make sure if it is appropriate, or if the child is having difficulty with stimulus control. To ensure that everyone working with a child, and the child himself, is aware of what is to be considered a correct response, the criteria for the expected response should be described in detail before that trial is provided. There are three possible response behaviors in a given trial: a correct response, an incorrect response, and no response. Correct responses are typically followed with an activity

or treatment that the child finds pleasurable or exciting, in the hope that the child will continue to produce that response.

The DTT instructional method has several advantages. The most important is the five-step instructional procedure, which can be used to teach young children a wide range of skills and has proven particularly effective in teaching children with autism new behaviors and skills (Downs et al., 2007). Downs (2007) also reports that other studies have shown that DTT is an effective instructional method that can be used to teach children with autism generalized imitation, receptive language, expressive language and conversational skills.

DTT procedures are readily adaptable to individualized, developmentally appropriate curricula and facilitate ongoing data collection that allows for a continuous formative assessment of student progress. The very short units used in DTT can lead to rapid skill acquisition and are particularly appropriate for young students with limited participation in instructional tasks and formats (Downs, et al., 2007). Downs (2007) also indicates that although it is often thought of as occurring outside of students' typical routines, DTT instruction can be embedded throughout the school's ongoing daily activities.

Cowan (2007) reported that early behavioral research evaluating the treatment of children with autism used principles of reinforcement and punishment to create highly effective student-teacher interactions. This training technology focused on taking children out of the natural environment and teaching them in individualized, tightly controlled situations where distractions could be minimized, correct responses could be prompted and consequences could be reliably delivered (Cowan, 2007).

This teaching procedure made sense because basic behavioral research had clearly demonstrated that the rate of learning could be increased through the immediate and frequent delivery of potent consequences. Teaching under these conditions resulted in gains in the areas of social and language skills, as well as reduction in disruptive and injurious repetitive behaviors (McGee, Almeida, Sulzer-Azaroff, & Feldman, 1992).

In their study in 2007, Downs, Downs, Johansen and Fossum investigated the practicality and effectiveness of providing DTT instruction to children with a wide range of developmental disabilities within a public preschool setting. The project evaluated the effects of providing DTT or individual attention in a control condition. The effects of providing DTT on the participants' cognitive, language, behavioral and social-emotional functioning were evaluated. Results generally indicated positive changes in adaptive behavior development and social emotional functioning for students who received DTT.

Wolf (1964) indicates that DTT is an effective method of teaching students with autism. These children seldom display personally and socially desirable behaviors to which reinforcements can be applied while they are engaged instead in behaviors that interfere with teaching and learning. To discourage those behaviors while simultaneously encouraging appropriate and desirable behaviors, it is often necessary to create highly controlled and carefully monitored teaching environments. The DTT method can be the centerpiece of this environment, particularly with young learners in the early stages of skills development and abilities such as attending,

imitating, following instructions, and answering questions (Anderson, Taras, & Cannon, 1996).

Ghezzi (2007) reports that success with the DTT method is based on research showing the effectiveness of the program and that DTT in particular can contribute enormously to the education and treatment of learners with autism. It can give them an unprecedented chance to learn appropriate skills that lead an independent, productive and happy life.

DTT has some drawbacks. One potential drawback is that students are not interacting with peers during intervention; thus, their social-emotional development could be impacted (Downs et al., 2007). Greenspan (1992) has argued that behavior analytic approaches to intervention such as DTT hinder the social-emotional and behavioral development of young children with developmental disabilities. However, according to Downs et al. (2007), the opposite may be true, as students receiving DTT made gains in social behavior. Another potential drawback to using DTT is that some children may experience frustration and anxiety as they are pushed by the instructor to gain skills that may be difficult for them to learn. The relatively intense nature of instruction could lead to emotional or behavioral difficulties for some students (Downs et al., 2007).

In addition, teaching in a highly controlled situation resulted in responding that was under control of a few highly specific stimuli. The treatment gains observed in a controlled setting seldom carried over to novel situations, people or tasks (Cowan, 2007).

Also, suggestions are provided to effectively implement DTT. For example, reinforcement should be differential to involve reinforcing most positive response to some degree, but providing very strong reinforcement when the child completely exhibits the target behavior or skill. If the reinforcement is to be consistent and effective, the criteria for the response need to be planned out in detail, understood, and used consistently by everyone involved in the child's program. Consequences for correct and incorrect responses should be easily distinguishable. In addition, error correction procedures should be well defined. If the child makes a number of incorrect responses, the level of prompting may need to be increased. If the child fails to make any appropriate response whatsoever, the prompting level is again increased, and the efficacy of the reinforcer should be re-examined (Wallin, 2007).

Verbal Behavior Approach

The Verbal Behavior Approach (VB) to teaching children with autism is based on Skinner's behavior theory (1957). It is believed that all behaviors serve a purpose. There are basic principals of behavior such as reinforcement, extinction, stimulus and control. Skinner also believed that these principals were sufficient enough to account for language development (Carbone, 2007). Carbone (2007) indicated that the use of language analysis has sometimes mistakenly been identified as a "new" form of applied behavior analysis or even something other than behavior analysis. In fact, the principles of VB constitute the core of treatment strategies of DTT and ABA (Sundberg, 2007). The VB approach incorporates teaching verbal behavior where all DTT and ABA programs do not. Those who utilize the behavioral

analysis in language are striving to maintain a conceptually systematic approach that suggests no new or different principles (Burk, 2007).

The basic teaching procedures of VB consist of the standard methodology of ABA (Cooper, Heron, & Heward, 1987). These procedures include: prompting, fading, pairing, modeling, shaping, chaining, differential reinforcement procedures, intermittent reinforcement procedures, extinction procedures, punishment procedures, generalization, discrimination training, errorless learning, transfer of stimulus control, task analysis, fluency procedures, contingency contracting, and the use of token economies as reinforcement.

The VB approach suggests that in order to learn a skill, a child must have an imitation repertoire (Burk, 2007). To learn to sign, for example, a child needs to develop a good motor imitation (mimetic) repertoire; to learn to speak, the child needs a strong vocal imitation (echoic) repertoire. The echoic is the verbal operant that relates to vocal imitation. An echoic is a verbal behavior whose form is controlled by someone else's verbal behavior with point-to-point (1:1) correspondence. This means that the child echoes exactly the speech of the teacher. For example, the teacher says, "cookie" and the child says, "cookie." The echoic provides a mechanism for evoking speech to be reinforced. For example, the child learned to say, "Mommy," but if there is no echoic repertoire, a teacher has to wait until the child said, "Mommy" on his own and then reinforce it strongly. If the child has learned to develop a strong echoic repertoire, we can repeatedly say, "Mommy," the child would echo, "Mommy," and the verbal behavior would be reinforced many times and increased in the future.

A mand is a request. Tied to the mand is the motivative/establishing operation (MO/EO). Technically, the MO/EO (Michael, 1982) is a set of environmental events that temporarily alter the value of other stimuli/events as reinforcers and therefore evoke all behaviors that have produced these events in the past. The MO/EO relates to conditions of deprivation and aversion. When the child is deprived of something, the MO/EO for the item is high because the "not having" makes the item more attractive. However, once the child has access to the item, he becomes satiated and the MO/EO is low. For example, if a child who loves cookies has not had any for weeks, the MO/EO (desire) for cookies is probably very high. If you take a platter of cookies and offer one to the child, you could likely teach the mand for cookie fairly easily. You would hold up a cookie and say, "cookie." If the child has a strong echoic repertoire, he will probably echo, "cookie," which can be reinforced by giving the child the cookie. Once this has transpired several times, the child will begin to mand "cookie" in the presence of the cookie when the MO/EO is strong because saying, "cookie" has historically led to access to cookies. However, after the child has eaten the platter of cookies, the MO/EO is reduced and the mand will probably not occur. When teaching mands, teaching should occur in a condition of deprivation, when the MO/EO for the stimulus is high. In mand training, there is a MO/EO for the target stimulus, which is also the reinforcer that will be delivered. The MO/EO is probably the single most important motivative variable in teaching children language (Burk, 2007).

According to Burk (2007), tacting, or labeling, can be taught once the child has an echoic repertoire and has acquired a number of consistent mands. The tact is a

verbal behavior that is under the control of the nonverbal environment and includes nouns, actions, adjectives, pronouns, relations, and others. Tacting is functionally very different from manding. If a child sees a cookie and says "cookie," but maybe he or she has just had dinner or a bunch of cookies and is satiated (there is no or a weak MO/EO), his saying, "cookie" is not functioning as a mand, but as a tact. The way to reinforce a tact is not by delivery of the item named, because a tact does not specify its own reinforcer as a mand does. Tacts are reinforced with generalized reinforcers, essentially anything other than the item named. Naturally, praise or confirmation is typical means of reinforcement. Tacting (labeling) is most of vocabulary and makes up a huge portion of everyday language. In tact training, there is no MO/EO for the target stimulus, but there still must be a strong MO/EO for the reinforcer that will be delivered. The MO/EO is critical in tact training, although it relates to the reinforcer that is now different from the target stimulus.

Burk (2007) indicated that the intraverbal is a verbal behavior that is under the control of other verbal behavior and is strengthened by social reinforcement. Intraverbals are thought in terms of conversational language because they are responses to the language of another person, usually answers to "wh-" questions. There are two classes of intraverbals, “fill-ins” and “wh- questions”. Intraverbals allow children to discuss stimuli that aren't present, which describes most conversation. With an intraverbal, what the child responds to the adult's/peer's language does not match what the adult or peer originally said. Intraverbals can be reinforced in a number of ways, with praise, generalized reinforcers, or, naturally with a continuation of the conversational exchange (Burk, 2007).

Barbera (2007) finds that the VB approach reduces tantrums and other problem behaviors because it begins by assessing what the child likes and then uses those items and activities to motivate the child, so that he or she can start to learn. Once the reinforcers have been identified, the child is taught how to make specific requests or mands. In the VB approach, the child will immediately start receiving objects of reinforcement, and then will be asking for objects either verbally or through sign language. Eventually with systematic programming, the child will begin to ask for items that are not in sight. Once the child is responding to the reinforcers and asking for several items or activities, the learning is slipped in gradually (Barbera, 2007).

In a study performed by Murphy, Holmes and Holmes (2005), manding functions for two reinforcers were collected for three children with autism. Their experimental task required the participants to mand on three successive occasions for a token. The results of their study indicated that for children with autism, it is possible to establish derived mand and reinforcer functions following appropriate conditional discrimination training. The results also indicated that derived manding as a behavioral process can be observed and even generated using multiple exemplars with learning disabled children (Murphy et al., 2007).

In 2007, Hernandez, Hanley, Ingvarsson and Tiger conducted a study in which conditions that resulted in generalized manding were analyzed. The study demonstrated several designs that single-word responses were the predominant mand forms of three preschool children. Reinforcing single-word mands to obtain the emergence of other mands was applied. The results showed that prompting and

differential reinforcement of one or two mands resulted in the emergence of other mands for all participants. It is found that functional independence between mands and tacts depends on the contingencies for other functionally equivalent responses and on the presence or absence of minimal mand repertoires. That is, although the children were able to tact the items, more complex mands emerged only after prompting and differential reinforcement of a more complex mand and the extinction of less complex mands were programmed. These results may have differed from previous research because the manded items in the study were often highly preferred items (Wallace et al., 2006) The reinforcing efficacy of the items was suggested by the results of the preference assessments but was demonstrated by the control exerted by items in the differential reinforcement condition of the mand form analysis. Teaching one or two mands has resulted in improvement in multiple mand forms (Hernandez et al., 2007).

Summary

The review of the literature summarized two approaches (ABA and DTT) to instruction for children with autism and explored a relatively new instructional method, Verbal Behavior Approach (VB).

Applied Behavior Analysis (ABA) and Discreet Trial Teaching (DTT) have both resulted in academic, social and verbal gains of children with autism. Their positive changes in adaptive behavior development and social emotional functioning were also noted. The technique for the two methods is similar in nature. Highly controlled and carefully monitored teaching environments need to be created and used with intense one-to-one instruction with a high rate of positive reinforcement.

However, these programs vary substantially in terms of their treatment of teaching language. VB is a form of ABA but with a strong emphasis on verbal behavior.

The major difference between the verbal behavior programs (VB) and the majority of DTT and ABA programs is the conceptual analysis of language that underlies the assessment and curriculum used in the program. The VB approach is simply normative applied behavior analysis with a few refinements. It incorporates all of the standard methodology of applied behavior analysis, but it explicitly adopts Skinner's interpretive framework for analyzing verbal contingencies. In other words, it is a small variation on a methodology that has an enormous empirical foundation. There are some studies in the field to evaluate the VB Approach and its effectiveness on teaching children with autism. Much research is needed to further evaluate such an approach. The present study is designed to re-evaluate the effect of VB for a group of preschoolers. It attempts to add information to the educational effects on teaching children with autism.

CHAPTER THREE

METHODOLOGY

Context of the Study

The study was conducted in a self-contained preschool classroom for children diagnosed with autism in the southern areas of New Jersey. There are 25 preschool classrooms in this school district, providing services to children with and without disabilities. Of those classrooms for children with disabilities, five are located in this participating school. All classrooms are self-contained settings for children with physical disabilities, moderate cognitive delays, behavioral disorders, and those diagnosed with autism. The school is part of the City's Public School District. The NJ Department of Education (2000) listed the District Factor Group (DFG) for the city as "B" based on the 2000 Decennial Census Data. The DFG is an approximate measure of a community's socioeconomic status (SES) and is ranked from "A" to "J." Districts having the classification of "J" have the highest SES. Thus, this school is located in a community with a low socioeconomic status.

Participants

Students

The students in this study were eight males between the ages of three and five. These children are currently placed in a self-contained classroom, which falls in the category of Preschool Disability. They are classified as having moderate cognitive impairments with severe developmental delays in all areas of childhood skill development. They also have limited verbal communication skills and have been diagnosed with autism.

The individual students' information is as follows:

Student A: This student is a 4 year-old male. He has been diagnosed with autism as well as having moderate delays in most areas of development. He did not speak before entering the program.

Student B: Student B is a 4 year-old male who is completely non-verbal. This child is classified as having PDD as well as Mental Retardation. His abilities fall far below his age expectancy.

Student C: Student C is a 4 year-old male diagnosed with autism and Attention Deficit Hyperactivity Disorder (ADHD). His language skills were extremely limited when he started school. This student has a history of violent behavior.

Student D: This student is a 3 year-old male who entered the program in November 2007. He has very limited vocabulary words with severely delayed developmental skills. He does not have a formal diagnosis at this point.

Student E: Student E is a 5 year-old male diagnosed with PDD. While many skills are age appropriate, this student suffers from delays in social/emotional development. He has a history of violent behavior and has a significant speech delay.

Student F: This student is a 4 year-old male who suffers from mild delays in most developmental areas. He has limited vocabulary development, but has not been diagnosed with autism.

Student G: Student G is a 5 year-old male diagnosed with autism. He suffers from delays in all areas of development including verbal communication and has a history of violent behavior.

Student H: This student is a 3 year-old male who has the diagnosis of PDD. His delays are in the areas of verbal communication and socialization. He also appears to have problems in sensory areas. Self-help skills are emerging for this student.

Teachers

One Special Education Teacher provides instruction to all participating students in the classroom. The teacher has experiences in working with autistic students. She is assisted by four paraprofessionals during the entire school day. Each paraprofessional is responsible for assisting two students during a period of 90 minutes that revolve throughout the day in teaching all academic areas and self-help skills. Because of the implementation of the new VB curriculum in the classroom, onsite training took place on a weekly basis for all paraprofessionals and the teacher with a VB expert.

Research Design

A single subject design with AB phases was used in this study. During Phase A, a pre-assessment was administered to each student. Scores of the pre-assessment were recorded and charted as baseline data. During Phase B, VB instruction was provided and student progress was recorded. Baseline data was compared to Phase B data to measure gains or declines in communication and inappropriate behavior.

Instrumentation

The instrument used in this study to measure language acquisition and behavior was the Assessment of Basic Language and Learning Skills – Revised (ABLLS-R) developed by Pardington and Sundberg in 1998. This assessment covers

four areas: basic learner skills, academic skills, self-help skills, and motor skills. The ABLLS-R is an assessment, curriculum guide, and a skill tracking system. The ABLLS-R Protocol is used to record each child's scores and provides criterion-referenced information regarding individual student's current skill level serving as a basis for selecting educational objectives. After the ABLLS-R has been completed, it is intended to guide instructional objectives by providing very specific information on skills that the student has and does not have (Pardington & Sundberg, 1998).

Instructional Materials

The primary instructional material used in this study was the ABLLS-R Protocol Book. Each student had his own book for assessment and data collection. The other materials used in the assessment and instruction procedures included hundreds of pictures and common items as well as academic materials compiled by the teacher based on the tasks in those sections of the assessment.

The ABLLS-R includes an assessment tool to record scores and track progress for each child. The ABLLS-R Protocol provides an initial assessment of a variety of language skills as well as a means to review and update progress. It includes a set of grids that allow the test administer(s) to track the skills that have been acquired and to document the learner's progress over time. Rather than grouping skills together as expressive or receptive language, the assessment targets individual skills such as the mand (referred to as requests), the tact (referred to as labeling), the intraverbal, and the echoic among others.

Procedures

Pre-Assessment Procedures

The initial assessment of the students began in October 2007. Data collection occurred in the classroom for assessment items. Both the teacher and the student were seated at a table when assessing each individual student in the classroom.

A brief initial reinforcer assessment was conducted with each child. The following items were presented all at the same time: pretzels, two kinds of Goldfish crackers, Oreo cookies, chocolate chip cookies, Skittles, M&Ms, and small toys, including a toy car and a ball. The student was encouraged to select whatever items they liked, and these were available throughout the assessment in small quantities (4 or 5 of each particular food item). The teacher also provided verbal praise and gestures such as a "thumbs up", "high five" or a pat on the child's shoulder at various times during the assessment. Throughout the assessment, if a student indicated an interest in some other activity in the classroom, such as building blocks, reading books, or working on the computer, these activities were also offered for 10-15 minutes following the completion of parts of the assessment. Access to items or activities was not contingent upon the child's correct responses. The teacher gave breaks during the assessment as deemed necessary.

Correct responses were recorded based on the initial assessment. Results were used as baseline data. Teaching goals were set based on the testing results for each student. Students will be re-evaluated using the same test at an ongoing basis to collect their correct responses as instructional data when they are taught until April

2008. The assessment scores are recorded and compare each student's progress through baseline and instructional data.

Measurement Procedures

Each student had his own ABLLS-R protocol. As each task was presented, the score was recorded in the protocol. Each task or skill assessed on the ABLLS-R has a row of columns that include the task number, range of scores, task name, task objective, questions to ask about the child's skill, examples of responses (that may be required to clarify the response), scoring criteria, and a section for notes. The scoring column has four rows for each skill or task assessed. The score column corresponds to the criteria column (i.e. a score of 1, 2, 3, or 4). A score of zero means that the student does not meet the lowest criterion for that item as described in the criteria column. Depending on the particular skill, the scoring column may consist of only a 0 and a 1 or may have 0, 1, 2, 3, and 4. When the skill is assessed for the first time, the top row is completed. The other three rows are to be used and completed in different color ink when the ABLLS-R is updated.

Instructional Procedures

Based on charted results of assessment, individual goals or targets were set for each student. Each student has his own curriculum designed to fit his specific goals. Data were collected daily in the areas of verbal communication (manding) while implementing the VB curriculum during all subject areas for a total of 5 months. As one mand is mastered, a new one is introduced. Targets were also set for academic goals based on assessment results. The frequencies of inappropriate behaviors were also recorded during the instruction.

Data Analysis

Each child was individually assessed by the teacher in all areas of the ABLLS-R. Items presented by the teacher were for the following areas of the ABLLS-R: requests, spontaneous vocalizations, syntax and grammar, play and leisure, social interaction, group instruction, and classroom routines. For the purpose of this study, only data in the areas of requesting, prompted and spontaneous vocalizations and violent behavior were recorded.

Based on initial assessment using the ABLLS-R, individual goals were set for each student. These goals were worked on intensively and data was recorded for an average of 20 weeks. At the end of that time period the data was analyzed to see what gains, if any, students made in the area of verbal communication and what decrease can be noted in the area of inappropriate behavior.

CHAPTER FOUR

FINDINGS

Profile of the Sample

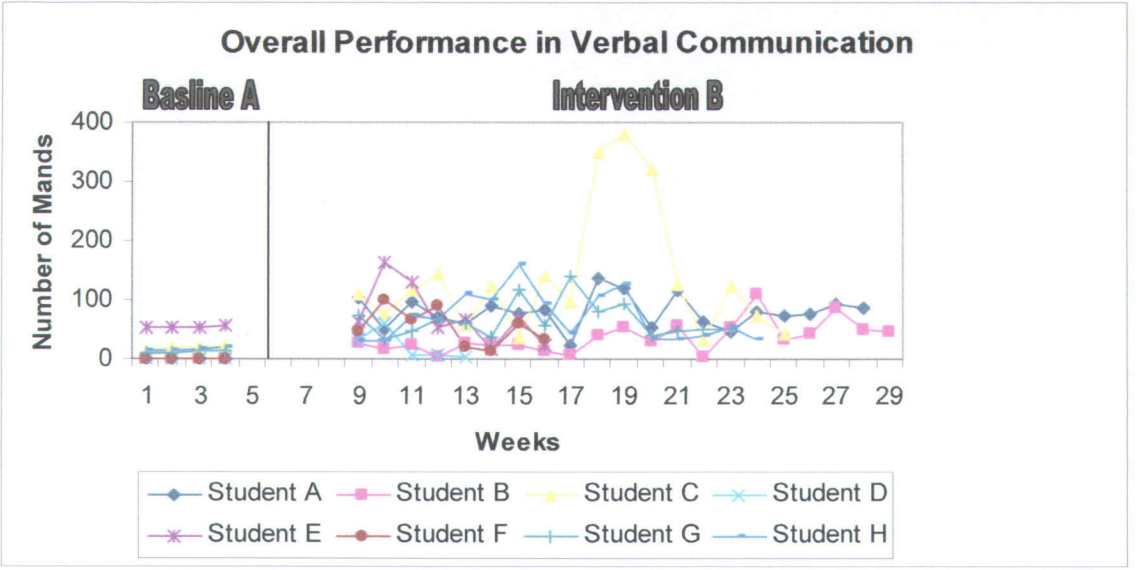
The subjects for this study were eight students with autism in a self-contained preschool classroom. Students received instruction with the Verbal Behavior protocol for 20 weeks based on individual's baseline performance level and learning goals. Of these students, three have been diagnosed with autism (37.5%), three have been diagnosed with PDD (37.5%) and two students have not had an official diagnosis (25%).

Analysis of the Data

Data show a significant increase in verbalization for all students participating in this study (see Table 4.1). Students A, B, D and F had baseline averages of zero. After implementing of the VB curriculum, Student A had a weekly average of 80.15 mands. Student B displayed an increase of 36.95 weekly mands. Student D had an average of 22 weekly mands. Student F increased to 54.13 weekly mands. Student C had a baseline average of 19 mands and displayed 138.11 average weekly mands after the implementation. Student E started with a baseline of 53.75 weekly mands and increased to 73.75 after implementation. Student G began with an average of 11.75 mands as a baseline and increased manding to 65.73 weekly after implementation. Student H began with a baseline average of 16.74 weekly mands and displayed 70.88 after implementation of the VB curriculum.

Table 4.1 *Overall Manding*

Baseline Mean = 12.65, Intervention Mean = 72.54



Data also show student improvement in appropriate verbal communication without prompting in a social setting (see Table 4.2). After implementing the VB curriculum, the totals for unprompted manding are as follows:

Student A displayed a weekly average of 71.1 unprompted mands.

Student B displayed a weekly average of 19.19 unprompted mands.

Student C showed a weekly average of 118 unprompted mands.

Student D produced an average of 0 unprompted mands.

Student E displayed a weekly unprompted manding average of 48.375.

Student F produced a weekly average of 9.88 unprompted mands.

Student G showed a weekly average of 15.8 unprompted mands.

Student G displayed a weekly average of 65.13 unprompted mands.

Table 4.2 *Unprompted Manding*

Baseline Mean = 12.65, Intervention Mean = 50.81

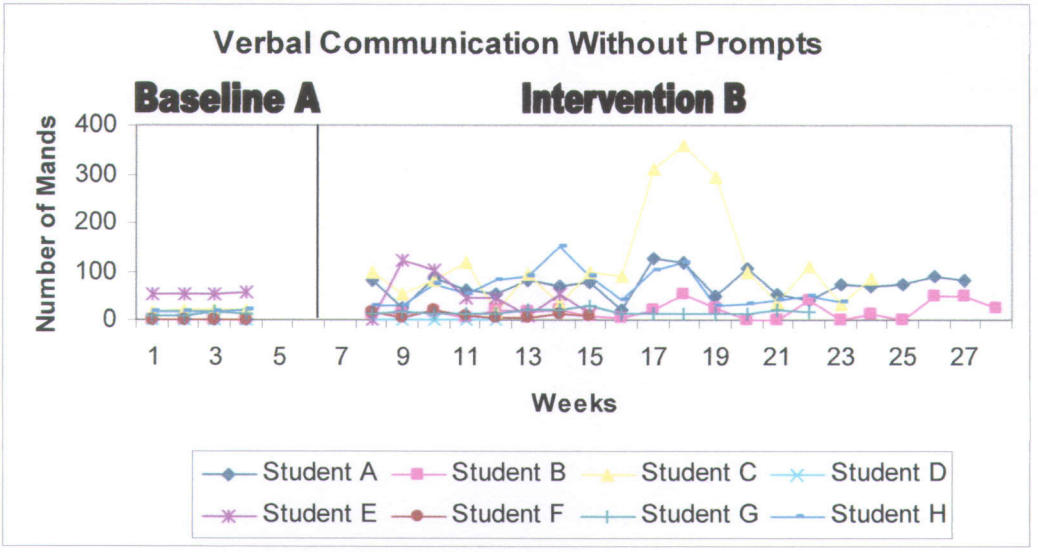


Table 4.3 contains data showing the numbers of individual students requiring prompting. Although there was an observable increase in unprompted manding, students still required an adult's prompt to communicate for specific requests. Student data for prompted manding on a weekly basis are as follows:

Student A displayed an average of 8.45 prompted mands.

Student B displayed an average of 17.9 prompted mands.

Student C showed an average of 24.65 prompted mands.

Student D produced a weekly mand average of 22 prompted mands.

Student E showed a weekly average of 24.38 prompted mands.

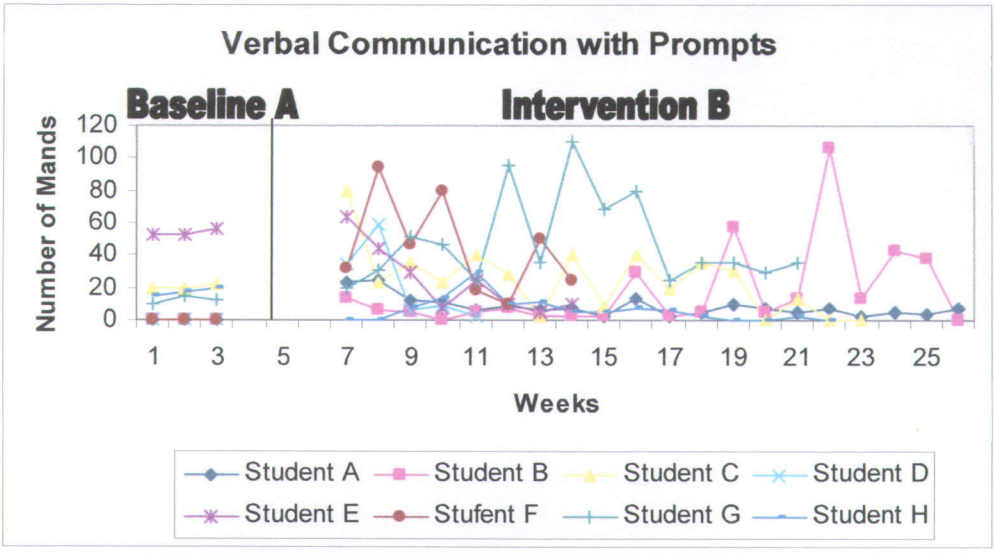
Student F produced a weekly average of 44.25 prompted mands.

Student G displayed an average of 48.2 prompted mands.

Student H showed an average of 6.2 weekly prompted mands.

Table 4.3 *Prompted Manding*

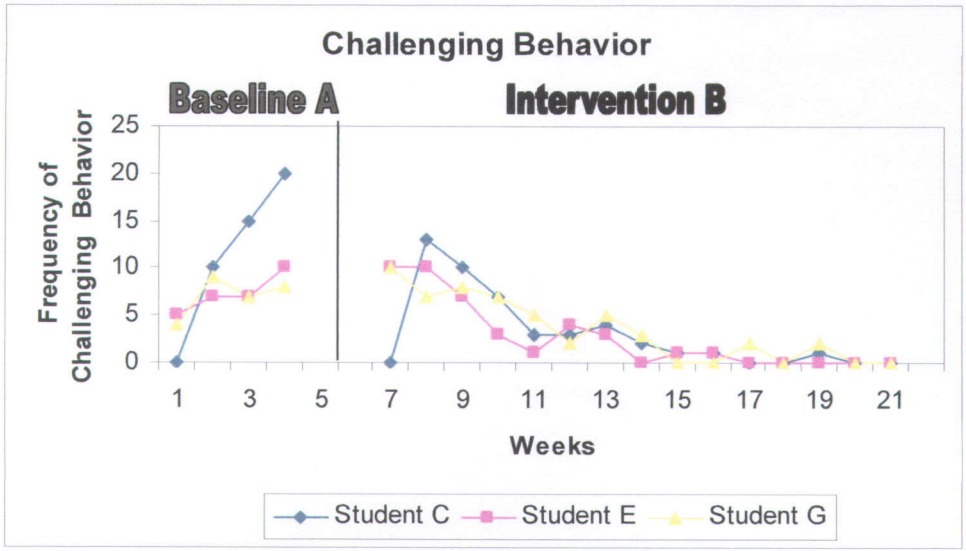
Baseline Mean = 12.65, Intervention Mean = 22.26



Results show that the Verbal Behavior Approach had a significant effect on challenging behaviors such as aggression or violence (see Table 4.4). During the baseline, observation data were collected for three students with aggressive and violent behaviors. Student C had an average frequency of 13.75 challenging behaviors a week. Student E had an average of 7.25 and student G had an average of 7. During the intervention, when the Verbal Behavior approach was provided, their challenging behaviors were decreased and eventually extinguished.

Table 4.4 *Behavior Changes*

Baseline Mean = 9.3, Intervention Mean = 4.68



CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Study

This study investigated the effects of the implementation of the Verbal Behavior approach to preschool children with autism during a five month period beginning in November 2007. The eight students who participated in the study were between the ages of three and five. Their performances in the areas of verbal communication and social behavior were examined.

Based on initial assessment using the ABLLS-R protocol, individual goals were developed for each student. Students were instructed toward these goals, and their performance was evaluated by recording data for 20 weeks. At the end of the five month period, the data were analyzed to examine the gains, if any, students made in the area of verbal communication and social behaviors.

Discussion of the Findings

The purpose of the study is to examine the effect of the VB approach for teaching children with autism. The first research question addressed the issue of students with autism or PDD and their gains in speech and verbal communication. Overall, positive effects were found after implementing the VB approach to instruction of the eight participating students. Results show that all students increased their verbal communication skills, especially in the area of independent or unprompted manding during the course of this study. During the intervention, when the VB approach was provided, highly reinforcing items were identified for each student when mand training was started. Students who had limited verbal

communication abilities began using verbal communication to request food, toys and other highly motivating objects. These findings are consistent with the previous studies of Murphy, Holmes and Holmes (2005) and Burk (2007). In their studies, specific items were used to generate mands with reinforcement for young children with autism. These items include highly motivational items such as food, toys and other objects in which these children were interested. Thus, the VB approach using highly reinforcing items has motivated autistic children to verbally respond to their teacher's prompts.

The second research question referred to the improvement of social skills and social speech as a result of implementing the VB approach. Results showed an increase in independent manding and social speech in all participating students. For example, several students began to request items without prompts. Other students began to speak independently in structured social situations as well. Also, students began to mand for items that were out of sight which indicates that they understood the importance of the verbalization. This finding supports the study of Hernandez, Hanley, Ingvarsson and Tiger (2007) to suggest that prompting and differential reinforcement of one or two mands resulted in manding for items that were out of sight or completely independent on the part of the student. This means that when the teacher provides prompts and positive reinforcement for speaking, the students understand that using words will fulfill their request for food, toys or other highly motivational objects. In return, these objects will reinforce their continuous verbal communication.

The third research question discussed the effect of the VB approach in decreasing inappropriate behaviors such as violence and aggression. The results showed that students' inappropriate, aggressive and violent behaviors were decreased and eventually extinguished. Students who had displayed several acts of violence or tantrum per day reduced their episodes to almost zero. There were no longer behavior problems during class transitions. Students were more easily redirected to present appropriate behaviors. This finding is consistent with that of Barbera, Rasmussen and Sundberg (2007). In the previous study, it was found that students would become violent or display aggressive behaviors when they were frustrated or not engaged in an activity. The VB approach provided autistic children with structured instruction in a step by step fashion. There was no down time in transition from one activity to another. Thus, all children had to participate in each activity. Obviously, when these children are engaged in an enjoyable activity, their inappropriate behaviors were reduced.

Limitations

The scope of this design was limited because only eight students with autism currently placed in a self-contained classroom participated in the study. Another limitation affecting this study was lack of consistency in data collection due to understaffing and lack of training for all staff members. Some of the staff entered the classroom without any training in the program, which may have affected the quality of data collection. In addition, the classroom was moved to another building during the school year which required time to be spent to structure a new and more appropriate setting for students. Thus, instructional time was reduced for

implementing the VB approach. This limited time period may also impact the study's results.

Recommendations

Considering the limitations of this study, the following recommendations are suggested. First, further studies should be conducted with a larger sample of population to confirm the findings of this study. Second, studies may need to divide into specific communication and behavior changes to examine the impact of the Verbal Behavior approach on specific skills and behaviors. Third, ongoing education in the field of teacher training should be provided for teachers and educational staff so that the Verbal Behavior approach could be effectively implemented in classrooms for students with autism.

Conclusions

The results of this study demonstrate student progress when the Verbal Behavior approach was implemented. Over a specific period of time, students demonstrated positive changes in verbal communication, appropriate social communication and social behavior when the VB approach was provided. These findings confirm that of the previous research of Burk (2007), Barbera (2007) and Murphy et al (2005). Based on the positive outcomes of this study, some implications should be considered. First, the curriculum should be continued for students with autism with a longer time period for the program implementation, in order to insure that these students would benefit from the VB approach to improve their communication skills. Second, in order to provide effective instruction using the VB approach, additional teacher training should be considered. Thus, educational staff

will be competent to collect data if they are familiar with data collection protocol and instructional methodology.

It is a challenge for teachers to teach students with autism. Although there are many instructional programs, the VB approach is a newly developed program designed for this particular group of students. The results of this study indicate that the VB curriculum is an effective method for individual or small group instruction. Future research should be considered to verify the findings and to enhance this curriculum to benefit more children with autism.

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APPENDIX A

Principal Permission and Subject Consent Form

November 14, 2007

Laura Salvitti
IMPACT Preschool
Vineland, NJ 08361

Dear Laura,

Congratulations on nearing the completion of your thesis on such an important topic! I understand that your focus is the Verbal Behavior approach to teaching students with autism, which is the new curriculum set forth by the Special Education Department of Vineland Public Schools. You will be implementing this curriculum in your classroom and collecting data to show student progress. You are approved to use this data in your report, with the understanding that no names or other personal student information will be shared in any way, and all such information will remain strictly confidential.

Good luck with your research!

Sincerely,

Monica Dannenberger
Principal

November 10, 2007

Dear Parent/Guardian:

I am a graduate student in the Special Education Department at Rowan University. I will be conducting a research project under the supervision of Dr. Joy Xin, as part of my Master's Thesis concerning the gains in language development and the decline in inappropriate behavior as part of the Verbal Behavior approach in teaching children with autism. I am requesting permission for your child to participate in this research. The goal of the study is to document the effectiveness of the Verbal Behavior approach.

As part of the curriculum, data is collected on a daily basis with regard to language acquisition and extinction of inappropriate behavior. Data is collected on all children. To preserve each student's confidentiality, no names or other identifying information will be used. Group data will be used for the study. In terms of individual results, no names will be used as students will be labeled "student A, B, C", etc.

Upon conclusion of this study, a summary of results will be available to any interested parties. If you have any questions, please feel free to contact me at (856) 691-4467 x 111. Dr. Xin can be contacted at (856) 256-4734.

Thank you for your help!
Sincerely,
Laura Salvitti

Please indicate your willingness to have your child participate by checking the appropriate box below and returning it to me by November 28, 2007.

_____I grant permission for my child _____to participate in this study.
_____I do not grant permission for my child_____to participate in this study.

_____
Parent/Guardian Signature

_____
Date

APPENDIX B

Data Collection Tools

Name: _____ Week starting: _____

Monday

Time spent manding	Staff	Activity	# of prompted mands	# of indep./IV mands	# of spont. mands
Totals					

Thursday

Time spent manding	Staff	Activity	# of prompted mands	# of indep./IV mands	# of spont. mands
Totals					

Tuesday

Time spent manding	Staff	Activity	# of prompted mands	# of indep./IV mands	# of spont. mands
Totals					

Friday

Time spent manding	Staff	Activity	# of prompted mands	# of indep./IV mands	# of spont. mands
Totals					

Wednesday

Time spent manding	Staff	Activity	# of prompted mands	# of indep./IV mands	# of spont. mands
Totals					

***Early learners*- indicate emergence of spontaneous mands using tally marks in column. Once spontaneous mands are established, use prompted and spontaneous columns only.**

Developed by: Julie Wolff, M.Ed., BCBA and Melanie Klastava, B.S., BCABA

Summary- Daily Rate per Minute

Day	Prompted mands per minute	Independent mands per minute	Spontaneous mands per minute
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			

$\frac{\text{Total \# of mands}}{\text{Total time spent manding}}$ **(calculate for prompted,independent,spontaneous)**

***Prompted mand*= item visible and model, physical, phonemic, and/or verbal (What do you want?)**

***Independent/Item Visible mand*= item visible, NO model, physical, phonemic, or verbal**

Spontaneous mand= NO item visible, NO model, physical, phonemic, or verbal. Under the control of the MO only

Date & Time: **Duration:**	**Student:**	**Person Filling Out Sheet:**
Antecedent	**Behavior**	**Consequence**
☐ Interrupted preferred activity ☐ Told No (wanted something could not have) ☐ Wants something and is allowed to have it ☐ Demand placed in context of table or other teaching location List demand _____ ☐ Demand placed in natural environment List demand _____ ☐ Wants attention but cannot have it ☐ Wants attention and can have it ☐ Transitional time ☐ Attention given to others ☐ Appeared to be in discomfort ☐ Bored – no materials or activities ☐ Other student provoked Describe how _____ ☐ Loud/disruptive environment ☐ Other:	Describe Behavior (use a clear, objective description of the child's exact behavior – avoid terminology such as "upset," "frustrated," or "angry"):	☐ Nothing/Ignored ☐ Physically redirected to an activity or location ☐ Verbal redirection to activity or location ☐ Required to continue current activity ☐ Separation from others but remained in room/area ☐ Removed from room/area ☐ Count and mand (wait until child demonstrates appropriate behavior then prompt correct mand and deliver item) ☐ Block behavior and redirect ☐ Deny access to reinforcer(s) ☐ Prompt through demand ☐ Attention provided (include told "no" or "stop") ☐ Reinforcer given ☐ Task withdrawn ☐ Other: