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THE USE OF BEHAVIORAL INTERVENTION TECHNIQUES IN AIDING
AUTISTIC CHILDREN IN
THE CLASSROOM

by
James H. Dundee, Jr.

A THESIS
Submitted in partial fulfillment of the requirements of the
Masters of Arts Degree in School Psychology
of Rowan University
May 1997

Approved by _____
Roberta Dihoff, Ph.D.

Date Approved 5/7/97

ABSTRACT

James H. Dundee, Jr.
The Use of Behavioral Intervention Techniques in Aiding Autistic
Preschool Children in the Classroom
1997
Dr. Roberta Dihoff
Graduate Program of School Psychology

The purpose of this study is to provide information to support that, through the use of behavioral intervention techniques, especially the use of positive reinforcement, teachers can help to improve the academic success of the child with autism. The purpose of this current study is to view two unique groups of subjects. Subjects, for this design, consisted of twelve (12) preschool-aged students from the Gloucester County Special Services School District. The subjects were randomly assigned to two groups. The first group would receive reinforcement for their behaviors and the second group would not. It was hypothesized for this study that students who received reinforcement for their behaviors would show less maladaptive hitting behaviors and better times on task, in the classroom. Results from this study support the hypotheses.

MINI-ABSTRACT

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Chapter I

Need

The topic was selected for several reasons. First, the researcher has worked with developmentally disabled children and adolescents for the last two years. However, the author was interested to see if behavioral intervention treatment programs could assist autistic preschool students to change their disruptive behaviors, in the academic setting.

The author also wanted to observe the comparison between two groups in an autistic preschool, in which one group receives positive reinforcement, as a behavioral intervention technique, to keep the students focused on-task for a longer period of time, to have students increase their task completion rate, and to overcome some of the maladaptive behaviors in the classroom. The other group will not receive behavioral techniques (i.e. positive reinforcement) in the academic setting. The author is curious to see how these two techniques differ and would also like to explore how these varying methods affect behavior.

The author feels that the ultimate goal for a self-contained behaviorally-based educational program for children with autism and developmental disabilities is for a transition to a less restrictive setting. Preparation for transition from a highly specialized, intensive program to a more normalized educational placement presents many challenges for the teacher and the student. If behaviors can be changed, and the present movement in education is calling for inclusion, then hopefully autistic children can be transitioned into mainstreamed academic setting.

Purpose

Although behavioral interruption has been found to be effective in institutional settings, it could be distracting or inappropriate during a classroom lesson in an educational setting. The purpose of this present study is to provide information to support that, through the use of behavioral intervention techniques, especially the use of positive reinforcement (i.e. food, toys, and verbal praise), teachers can help to improve negative and destructive behaviors and help improve the academic success of the child. The purpose of the current study is to view two unique groups of autistic children in a preschool setting. The one group will receive positive reinforcement for appropriate behaviors, time on task, and completion of academic tasks assigned. The second group will not receive reinforcement, from classroom instructors, regardless of their behavior, time on task, or assignments completed in class. The ultimate goal, through this research, will be to share the results with the instructional staff, of the preschool, in the hopes that the data will be able to assist them in improving the lives and the academic successes of the autistic students.

Hypothesis

The following hypotheses are predicted in this study:

1. There will be a significant difference in behavior for those students who receive behavior modifications/interventions (i.e. positive reinforcement) as

opposed to those children who don't receive behavior modifications/interventions.

2. Students who receive positive reinforcement, from classroom instructors, will have a greater task completion rate and a longer "time on task" in comparison to those students who do not receive positive reinforcement.
3. Students who receive behavior modification techniques (i.e. positive reinforcement) will show significantly better behaviors, especially less disruptions in class as opposed to those students who do not receive positive reinforcement for their behaviors.

Theory

Autism is a developmental disorder that is the result of an abnormality in the structure and the function of the brain. It affects many aspects of the way in which the child sees the world and learns from his or her experiences. First described in 1943, child psychiatrist Leo Kanner coined the term "early infantile autism" because in the children he studied, aloofness and social withdrawal seemed to be present from the earliest part of infancy. He initially believed that the condition was due to some innate ability to establish a social relationship, and later suggested that the etiology might lie in the action between a biological predisposition in the children and detached, mechanical child-rearing practices on the part of the parents, who themselves had a mild form of the disorder (Mash & Barkley, Eds., 1989)

Not long after Kanner's initial publications, psychoanalysts published a number of clinical reports on similar children, choosing the classification of "atypical" to avoid

comparison with adult schizophrenia (Rank, 1949). Rank (1949) remarked that one assumed that these atypical children had suffered gross emotional deprivation and that close investigation indicated that the majority of mothers were immature and narcissistic with precarious social contact (Rank, 1940). There were many reports in the 1950's which tended to confirm the hypothesis of parental psychopathology on the basis of intensive clinical study, although some researchers suggested it might be reactive to the child's problems rather than causal (Esman, Kohn, & Nyman, 1959).

Mahler (1965) studied the problem of infantile psychosis from the perspective of developmental psychopathology. She acknowledged that only "constitutionally vulnerable" infants developed schizophrenia, but suggested that the core deficiency was the infant's lack of, or loss of, the ability to utilize the symbiotic (need satisfying) object of the mother (Mahler, 1965).

A strong psychogenic position was developed by Bettelheim in his book *The Empty Fortress* (1967) where he concluded that parental behavior is necessary but not sufficient factor in the etiology in infantile autism. Bettelheim, in his research, believed that from the beginning, the mother failed to respond to the child's cues so that the child did not acquire any sense of control over the external environment and thus behavior was affected.

For the past thirty years, however, it has been widely accepted that Autistic Disorder is a biologically-based disorder of development. Research efforts directed toward a specific etiology have been unsuccessful, and the consensus is that autism is a syndrome that represents the "final common pathway" of a number of different etiologies including, biochemical, metabolic, genetic, electrophysiological, and structural

abnormalities (Dawson & Castelleo, 1992 in Lyman & Hembree-Kigin, 1994). Kanner eventually focused on the notion of an inborn defect, leaning toward the possibility of a genetically-based biochemical abnormality (Kanner, 1971 in Mash & Barkley, 1989).

Autism is the best recognized and most frequent occurring form of a group of disorders collectively known as the Pervasive Developmental Disorders (PDDs). According to the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV) (1994), these disorders are characterized by “severe and pervasive impairment in several areas of development: reciprocal social interaction skills, communication skills, or the presence of stereotyped behavior, interests and activities” (DSM-IV, 1994). By definition, the onset of Autistic Disorder must occur prior to age three (DSM-IV, 1994). The DSM-IV states that the autistic child has difficulties in social interactions which include: lack of awareness of the existence or feelings of others, not seeking comfort from others when distressed, failure to imitate, little or no interactive social play, and inability to establish peer friendships (DSM-IV, 1994).

Autism often overlaps other PDD diagnoses, and depending on the definition of autism that is used, slightly more or slightly fewer children will be considered autistic or to have another form of PDD. Historically, the terminology of designating disorders generally grouped as “early childhood psychosis” (i.e. infantile autism, childhood schizophrenia, early infantile psychoses, and symbiotic psychosis) has been used with “gross inconsistency (Seifert, 1990). But even today, the establishment of strict guidelines by which to diagnose the autistic syndrome remains a challenge.

In the past fifty years, clinicians and researchers have discovered that there are many forms of autism. Waterhouse et al. (1989) hold that “it is possible that that there

will prove to be nearly as many categories or subgroups as there are individuals identified as autistic or PDD" (Waterhouse et al., 1990). Wing (1985) writes "Although the classically autistic child is easy to recognize, there are many more children with autistic features who do not show the full syndrome" (Wing, 1985). Hart (1993) maintains that no specific behavior proves that a child is autistic. Autistic spectrum disorders constitute a syndrome- meaning that affected individuals will not have all the associated signs and symptoms (Hart, 1993).

The current study will concentrate on the use of behavior therapy in treating the needs of autistic children. Behavior therapy offers various action-oriented methods to help people take steps to change what they are doing and thinking. Many techniques, particularly those developed within the last decade, emphasize cognitive processes. In this study, the terms behavior modification and behavior therapy are used synonymously. Behavior modification or behavior therapy, has been defined as the use of a broadly defined set of clinical procedures whose description and rationale often rely on the experimental findings of psychological research, and an experimental and functionally analytic approach to clinical data, relying on objective and measurable outcomes (Craighead, Kazdin, & Mahoney, 1976) A second definition of behavior modification is the application of basic research and theory from experimental psychology to influence behavior for purposes of resolving personal and social problems and enhancing human functioning (Kazdin, 1979).

The behavioral approach had its origin in the 1950's and early 1960's as a radical departure from the dominant psychoanalytic perspective. During this time the behavior-therapy movement differed from other therapeutic approaches in its applications of

principles of classical and operant conditioning to the treatment of a variety of problem behaviors. It was during the 1970's that behavior therapy emerged as a major force in psychotherapy and education also experienced a significant growth spurt (Spiegler, 1983). Behavior therapy procedures will be discussed throughout this current study.

Definitions

1. **Autism:** is a severely incapacitating life-long developmental disability that typically appears during the first three years of life. The result of a neurological disorder that affects functioning of the brain.
2. **Behavior modification:** Systematic application of antecedents and consequences to change behavior.
3. **Control Group:** Subjects receiving no special treatment and serving as a basis for comparison.
4. **Developmentally Appropriate Education:** Educational programs and activities designed to meet the cognitive, emotional, social, and physical needs of the students.
5. **Disability:** The inability to do something specific, such as walk or hear.
6. **Handicap:** A disadvantage in a particular situation, sometimes caused by a disability.
7. **Inclusion:** Teaching disabled children in regular classes for part or all of their school day.
8. **Individualized Education Plan (IEP):** Annually revised program for an exceptional student, detailing present achievement level, goals, and strategies, drawn up by teachers, parents, the student, and specialists.

9. **Least Restrictive Placement:** Placement of each child in as normal an educational setting as possible.
10. **On-task:** Keeping a student focused on the material. Looking at the attention spans of the students.
11. **Pervasive Developmental Disorder (PDD):** disorders similar and including autism.
12. **Positive Reinforcement:** Strengthening behavior by presenting a desired stimulus after the behavior (i.e. food, toys, and verbal praise).
13. **Reinforcement:** Use of consequences to strengthen behavior.
14. **Reinforcer:** Any event that follows a behavior and increases the chances that the behavior will occur again.
15. **Self-injurious behavior:** Behavior that includes slapping of the leg or face, hand biting, and head banging.
16. **Self-stimulating behaviors:** Behavior that is persistent and repetitive. Self-stimulating behaviors include: rocking, hand flapping, grimacing, tapping, or repeating vocal or word patterns.
17. **Task Completion:** Students completing assigned tasks by the instructor. Does the student complete the task that is assigned to them?
18. **Time on Task:** Time spent actively engaged in the learning task at hand. The amount of time a student can remain focused on a given classroom assignment.
19. **Squeezing Eyes:** A negative behavior in which the child squeezes his/her eyes to avoid the instructor or the situation.

Assumptions

Some assumptions can be formed concerning the study. The first assumption is that all students in the autistic preschool are accurately classified as autistic. The second assumption is that all students started school on the same date. The assumption, made by the researcher, is that none of the students have previously received academic training in a classroom setting. The next assumption is that all information and results from this study are completely accurate. The final assumption is that none of the students have received positive reinforcement in an academic setting.

Limitations

Some limitations are noted concerning this study. The first limitation is that the research is limited to a small sample size. For this study, there will be sixteen (16) autistic preschool students participating. Since the sample size is small, the results may not be generalized to other samples. The sample is limited to autistic preschool aged children. Therefore, results from this study can not be generalized to older children with autism. A final limitation to this research that needs to be addressed is that the researcher is limited to certain times and dates when the autistic students can be observed and video taped.

Overview

In CHAPTER TWO, literature basis for this research is reviewed. Specifically this will include literature pertaining to the various treatment approaches of autism, especially behavioral intervention techniques used in educational settings. The literature review is intended to expand one's comprehension, prior to examining the study. In CHAPTER THREE, design and methodology of this study will be described. Specifically, it will include descriptions of the sample, measurement, design, testable hypothesis, and analysis. In CHAPTER FOUR, analysis of data will be discussed. Also, this chapter includes the order of presentation, organization of the analysis chapter, restatement of the hypothesis, interpretation of the results, and statements of significance. In CHAPTER FIVE, the researcher will discuss summary and conclusion. Also, this section contains a review of the results and implications for future research.

CHAPTER II

Literature reviews are presented in this chapter. The reviews will discuss the various treatment approaches for individuals suffering from autism. The review of the literature will enable the reader to better understand the various treatment approaches for autism and autistic disorders. The majority of the literature, in this section, will focus on the use of behavioral interventions in educational settings.

Treatment Approaches

Just as a variety of categorical systems accumulated and a muddle of overlapping diagnoses thrived, until the 1980's, therapy was just as idiosyncratic: treatments for autistic children ranged from separating the child from his parents, to psychoanalysis, to electric shock therapy (Siefert, 1990). Parents floundered in their search for a way to help their child, but in recent years many treatment interventions and programs have emerged (Wing, 1989).

Indeed, there is "hardly a treatment approach that has not been offered to autistic children" (Hertzog and Shapiro, 1990). Psychoanalysis, behavior modification, therapeutic nursery school, dyadic and triadic treatments, special education, speech and language therapy, holding therapy, sign language-based approaches to learning, neurodevelopmentally directed therapies (including perceptual retaining as well as

pharmacotherapies) have all been applied (Shapiro, 1978). More recent interventions such as facilitated communication, auditory training, changes in diet, and sensory integration therapy have been attempted with varying and often questionable rates of success.

There have been psychoanalytic reports of individual treatments (Ekstein & Caruth, 1969; Rank, 1955) with definite amelioration of symptoms, usually following intensive work with the parents as well as the child. Bettelheim (1979), suggested that the environment should make minimal demands and instead allow the child to regress and express infantile needs so that he or she can discover, at whatever pace he chooses, that he or she is safe and can have an effect on the environment (Bettelheim, 1979).

Hertzog and Shapiro (1990), in their research on treatment therapies, report that systematic comparison of the progress made by autism in three different educational settings found that the best results were obtained by a unit that used extensive, specific teaching in a well-controlled classroom that provided an organized and structured program and emphasized the use of techniques appropriate to the level and pattern of the handicap (Hertzog and Shapiro, 1990). Least progress was made in a permissive environment in which regressive techniques dominated (Bartalak and Rutter, 1973 in Hertzog and Shapiro, 1990).

In her article, "Teaching Tips from a Recovered Autistic", Temple Grandin writes: "The common denominator of many successful autism treatment programs is early intense intervention and mainstreaming with normal children" (Grandin, 1988). Autistics, according to Grandin's research, need normal children as models for behavior. For best results, treatment should start by age three, but Grandin believed that good

results could also be obtained with older children as well. There is a tendency among professionals to think that their own methodology has the “special magic” (Grandin, 1988). In many instances, the real magic that makes a program effective is early intense intervention in a structured environment, meaningful contact with normal children, and plenty of structured physical activity.

Newsom and Rincover (1989), in their research, stated that the most general conclusion that emerges from clinical research and studies is that autistic children can be divided into two large groups based on intelligence (Mash and Barkley, 1989). In the study Newsom and Rincover stated that the first group is composed of those in the severely retarded ranges of intelligence; the second is made up of those in the normal and mildly through moderately retarded ranges. Through the results of this study Newsom and Rincover found that the most appropriate treatment strategy for children in the first group emphasized the acquisition of behaviors that will make the children’s lives less difficult than they would otherwise be and allow them to function as independently as possible. The main objectives included: self-care skills, a reasonable degree of compliance with instructions and simple rules, basic social and affectionate behaviors, communication of needs and wants, appropriate play, and the reduction of harmful behaviors, especially in the home and school environments.

For the second group of children, in the Newsom and Rincover study, outcome is highly variable and more open to modification (Lovass & Smith, 1988). This group accounts for those who achieve normal or near normal outcomes and who will show rapid learning during the first three or four months of treatment. These children should receive a “total push” approach in order to take advantage of neurological and behavioral

processes early in life (Rincover et al., 1985). In addition to the objectives listed above, there was additional emphasis on: age-appropriate verbal language, social interaction with normal peers, and behaviors and skills expected in normal preschool and elementary classrooms. Rincover et al. in their research article, pointed out that even if expectations are high, parents should be counseled to remember that the outcomes can be highly variable, depending on the child, the quality of his education, and the opportunities available to him as an adult.

Brill (1994), through research, believed that children with autism play a broad spectrum of characteristics, many that change throughout the development. One program, according to Brill, could not serve every child's needs. Brill advises parents to evaluate a treatment program in light of the child's individual symptoms, strengths and weaknesses, and counsels caution when encountering programs that claim to cure a child (Brill, 1994). Throughout her study, Brill advised parents to consider the following factors in picking an appropriate treatment plan for their child: Brill suggested that the only treatment plan to survive the test of time and provide lasting benefits is a structured (predictable not rigid) educational program that manages behavior through behavior modification and targets goal to individual levels of functioning (Brill, 1994). Brill also believed that parents should investigate program claims before committing a child to a particular plan and that parents should be wary of people who try to convince you that the treatment is the child's only hope. Brill claimed that there are good reasons to expect that preschool aged children with autism who receive an intensive early education will benefit from the effects of treatment (Brill, 1994).

Group Instruction

Even autistic children need to function as part of a larger system with rules to which they must at least try to adhere. Koegel and Rincover (1974) investigated teaching autistic children in a large group, using the tandem model which begins with the use of one-to-one instruction and systematically expands to include more students. They demonstrated that it was possible to effectively teach a group of eight children, but only after instituting a "fading in" procedure to transfer stimulus control from one-to-one to a group format (Koegel & Rincover, 1974 in Rotholtz, 1990). The researchers have also described a procedure for providing autistic children with individualized instruction within a group setting.

Peer Mediation Intervention

Another strategy for remediating the social unrelatedness of autistic children is to teach normal or mildly handicapped peers to engage in appropriate social interactions with them (Newsom & Rincover, 1989). Peer-mediated instruction a key component within the LEAP (Learning Experiences An Alternative Program for Preschoolers and Parents) program, a highly acclaimed intervention designed for autistic children at the University of Pittsburgh. The findings and benefits of peer training include: peers can extend social interventions to multiple children concurrently once they are trained, a benefit that is especially important in group settings such as the classroom (Newsom & Rincover, 1989). Other findings demonstrate that generalization and maintenance of social skills are more likely if peers are involved in the intervention. Research has shown

that the mere exposure of handicapped children to normal peers through integrated classroom placements does result in significant observational learning by the handicapped children (Newsom & Rincover, 1989).

Maladaptive Behaviors in Autism

A case study by Early (1995) traced a school social worker's development of an in-class intervention for reducing self-stimulating and self-injurious behaviors that interfered with the school functioning of an adolescent with autism. Following failure of traditional counseling, in which the student was removed from the classroom, an operant conditioning program of differential reinforcement of incompatible behavior and response-cost was initiated during an academic lesson in the classroom. Because the new behaviors did not generalize to situations when the social worker was not present, the intervention was reconceptualized as maintaining adaptive behaviors by controlling the learning and living environments.

The study by Early provides a model for innovative school social work practice that combines the principles of social work's ecological perspective with behavioral practice techniques to enhance the social functioning of a severely disabled special education client.

Educational Considerations

Siegel (1996) suggest that "there is no one way to educate a child who has autism, no more than there is only one right way to educate a non-disabled child" (Siegel, 1996). Autistic children require a multi-modal approach that includes a focus on the development of socialization and communication skills (Hertzog & Shapiro, 1990). Educational considerations, in research, can and often do incorporate basic self-help skills, including learning to speak, learning to eat with utensils, etc., and these, as well as more conventional academic goals and objectives must first be detailed in a child's Individual Education Plan (IEP).

In creating an IEP, it is important to keep in mind that all autistic children acquire different skills at different rates. Koegel and Schreibman (1982) discussed that the behavior of autistic persons is often so disruptive, and their deficits so unique and pervasive, that most traditional teaching techniques are completely ineffective. The results of the study, by Koegel et al., 1982) show that autistic children can learn, but may do so only if great care is taken in designing and implementing their learning environment, Autistic children do not learn much unless specific rules, identified by research, are closely followed (Koegel & Schreibman, 1982).

The content of the educational program varies depending on the level of function of the autistic child concerned, but the aims are the same for all. These, are, first to improve social behavior so that life is easier for the child, his family, or the group of people with whom he is living; second to teach as many useful self-care, practical and school work skills a possible; third, to develop the abilities necessary for occupation and

for leisure activities; and last, but not least, to help the child understand the world a little bit better and find some interest and enjoyment in life (Schneider, 1993).

Behavior Modification Treatment

Fester (1961) analyzed the behavior of autistic children in terms of deficiencies in reinforcement and demonstrated that autistic children could be taught simple tasks by systematic and meaningful reinforcement (Ferster & DeMyer, 1962). In their 1973 review of behavior therapy with autistic children, Lovaas and Koegel stated that every child made measurable progress, even though it was slow and usually not maintained in new situations. The research to that date had focused primarily on the treatment of autistic children in a one-to-one adult-child ratio so that the failure to generalize to other situations was a very limiting factor (Lovaas & Koegel, 1973).

Rutter and Bartak (1973) made a systematic comparison of the behavioral, social, and scholastic progress of autistic children in three special classes using different methods (Rutter & Bartak, 1973). There was measurable improvement in behavior and social responsiveness in school and at home with no difference between the groups. For example, initially 40% had been rated as showing "markedly deviant behavior"; four years later this was reduced to 20%. Similarly, only 14% initially showed good social responsiveness (as shown by eye-to-eye gaze, play and facial expression, etc.); in the follow-up, this was increased to 54%. Only those children in the unit with structured cognitive/educational programming showed significantly greater-than-expected scholastic improvement in the four year follow-up. Rutter, in the article, suggested that the

beneficial element common to all the programs was the high level of staff-child interaction (Rutter & Bartak, 1973).

Lovaas, a pioneer in the use of behavior modification with autistic children, has developed an intensive program for teaching developmentally disabled children under age four. “ Children acquire skills through reinforcement of successive approximations, promoting and fading procedures, and teaching subjects to imitate adults’ behaviors as well as to learn through observation of other children (Lovaas & Smith, 1988). To achieve maximum effectiveness treatment is conducted at least forty hours per week over a period of several months or years, and all caregivers in the child’s natural environment are trained in the teaching principles.

Lovaas (1987) found that nearly half of his sample of very young children with autism who were provided with an intensive behavior modification program (forty hours per week of one-on-one intervention for two years) achieved normal intellectual and educational functioning at follow-up (Lovaas & Smith, 1987). Training, in this article, focuses first on acquisition of compliance, then imitation, then receptive and expressive language, and integration with peers. Incorporated into drills to accomplish these goals are pre-academic concepts such as vocabulary, shapes, colors, numbers and alphabet, as well as opportunities to use language.

Siegel (1996) states, through research, that one-to-one intervention is particularly important to young autistic children because they are not socially motivated to be part of a group, they do not engage in what behaviorists call “social learning” until it’s taught, they seldom do something to please an adult if they can be pleasing themselves instead. (Siegel, 1996).

The trick of much therapy with autistic children is to show the child benefits as quickly as possible, (for example, getting a desired food, toy, or activity) so that the child finds his/her newly acquired skill (pointing to a picture of a cookie to get a cookie) to be a more efficient way of functioning than the behavior it replaced (standing in the kitchen and screaming at Mom, while she scrambles to find different things to eat for the child) (Lovaas, 1988).

Summary

The author has tried to make it clear that the conditions of mental retardation, infantile autism, and other Pervasive Developmental Disorders are overlapping and that different diagnoses may be appropriate for the same child at different times in his/her life. Although these conditions are apparent in the preschool years, often it is only in retrospect that one gets the whole picture. The diagnosis should be a working diagnosis which leads the way for immediate educational or psychological intervention without a long-term commitment to a single mode of treatment.

Chapter III

Sample

Subjects in this study are enrolled in the Gloucester County Special Services School District Autistic Preschool. This preschool facility is located in the Pennsylvania suburbs. The facility is currently being housed in a Vocational-Technical school which is located in the Pennsylvania suburbs in Gloucester County, New Jersey. Twelve (N=12) autistic preschool students will serve as the subjects for this study. There are seven (7) females and five (5) males participating in this research project. Subjects range in age from two years of age to six years of age, with the mean age being three.

Students enrolled in the Gloucester County Special Services School District Autistic Preschool attend the preschool five days a week. Students attend the school Monday through Friday and attend school twelve months out of the year. Students begin their school day at eight-thirty in the morning and end their day at two-thirty in the afternoon. Students are brought to school, via school busses, from their respective towns that the students live in.

Teachers, who serve as instructional staff, have worked with autistic students for a minimum of three years. There are six (6) full-time teachers and three (3) part-time teacher aides that assist the children during daily activities and classroom lessons.

Measurement Description

For this particular research design, an observation data sheet was used to monitor the behaviors of the students. The Autistic Observation Data Sheet, as shown in Figure 3.1, was designed by the researcher and the instructional staff from the Gloucester County Special Services Preschool. Each group was observed using the data sheet. Figure 3.1 shows the data sheet for Group 1 (the experimental group), the exact same sheet was also used for the six subjects who were randomly assigned to the control group. The researcher used the data sheet for each of the ten observation sessions. Each time a student demonstrated a particular behavior, the researcher marked the appropriate area. For this particular research project, the researcher wanted to observe specific behaviors. The variables, located on the Autistic Observation Data Sheet, were the behaviors that the researcher wanted to observe. The researcher and the instructional staff felt that the behaviors listed on the Autistic Observation Data Sheet were the ones that most frequently occurred. Since the tool of measurement was designed by the researcher, reliability of the tool may not be high.

Figure 3.1

Autistic Observation Data Sheet

AUTISTIC OBSERVATION DATA SHEET	
Date of Observation	_____
Time of Observation	_____

Length of Observation _____

Activity Observed _____

GROUP 1 ACTIVITY SHEET

SUBJECTS	TIME ON TASK	TIME TO COMPLETE TASK	CRYING/ SCREAMING	HITTING SELF	HITTING OTHERS	SQUEEZING EYES	KEEP HANDS TO SELF
SUBJECT 1							
SUBJECT 2							
SUBJECT 3							
SUBJECT 4							
SUBJECT 5							
SUBJECT 6							

Design

Consent forms were mailed to the parents/guardians of twelve (12) of the preschool students. Twelve of the permission slips were returned and all twelve parents/guardians gave permission to have their children observed and video taped. In addition, the parents/guardians were telephoned, by the researcher, and were informed that they could come and monitor any of the observation sessions. Ten out of the twelve parents declined and two parents showed up on three observation sessions. The parent/guardian permission form, that was distributed for this project, can be seen in Appendix A.

Permission was also needed, by the Vocational-Technical school in which the Gloucester County Special Services School District Autistic Preschool is housed. Board of Education approval was granted for this research to take place.

Analysis

In order to determine the relationship, between the groups, across different variables a Mann-Whitney U- Wilcoxon Rank Sum W Test was used. The Mann-Whitney U - Wilcoxon Rank Sum W Test is a statistical test that is used for comparing two populations based on independent random samples. The researcher feels that this test is most appropriate in comparing the two groups in this design.

Procedure

The researcher, in this design, observed the students across various settings. The researcher monitored the students in the classroom, in the designated music room, and in the playroom.

For this study, the twelve (12) students will be randomly assigned to either the experimental or control group. The experimental group will receive positive reinforcement by their instructors for time on task, task completion, and their overall behavior in the classroom. The experimental group will be reinforced for their behaviors every five minutes. The instructional staff will carry stopwatches and after the completion of five minutes, the students in the experimental group will be taken into a separate room and rewarded. The rewards given to the students, by the instructional staff,

were: the use of toys, games, or having a specific food (i.e. cookies). The control group does not receive reinforcement regardless of their behaviors.

Subjects will be observed and rated using the Autistic Observation Data Sheet designed for this study. Each time a subject performs a certain behavior, the researcher will mark the appropriate area on the data sheet. One instructional staff member was assigned to monitor and time the students in regards to time on task and task completion rates. The staff member was to write down the times, using a stopwatch, that the students completed a certain task. In addition, subjects will be video taped by a member of the instructional staff. This enables the researcher to view the tape to see if any of the behaviors were missed during the initial analysis.

Testable Hypotheses

The hypotheses for this research project, that will be looked at in Chapter IV, are as follows:

1. There will be a significant difference in behavior for those students who receive behavior modification/ interventions (i.e. positive reinforcement) as opposed to those students who do not receive behavior modification/intervention.
2. The second hypothesis is that students, who receive positive reinforcement, will have a greater time on task rate and a better task completion rate as opposed to those students who do not receive positive reinforcement for their time on task and assigned tasks in class.

3. The final hypothesis states that students who receive positive reinforcement will show better classroom behaviors (i.e. less classroom distractions) than those students who do not receive positive reinforcement for their behavior.

Summary

In summary, the purpose of this project is to show, that although behavioral interruption has been found effective in institutional settings, it could be distracting and inappropriate during a classroom lesson in an educational setting. The purpose of this present study, is to provide information to support that, through the use of behavioral intervention techniques, especially the use of positive reinforcement, teachers can help to improve the academic success of the child.

The purpose of the current study is to view two unique groups of autistic children in a preschool setting. This research project will look at the differences between two groups of preschool autistic students, as one group will receive positive reinforcement and the other will not receive positive reinforcement. The researcher believes that the results, at the significance level of .05 ($p < .05$), will show that positive reinforcement will have an effect on the behaviors of the autistic students.

The ultimate goal, through this research, will be to share the results with the instructional staff, of the preschool, in the hopes the data will be able to assist them in improving the lives and the academic successes of the autistic students.

Chapter IV

Restatement of Hypotheses

In this study it was predicted that: there would be a significant difference in behavior for those students who receive behavior modifications/interventions (i.e. positive reinforcement) as opposed to those children who do not receive behavior modifications/interventions. Also, it was predicted that students who receive positive reinforcement, from classroom instructors, will have a greater task completion rate and longer time on task in comparison to those students who do not receive positive reinforcement. Finally, it was predicted that students who receive behavior modification techniques (i.e. positive reinforcement) will show significantly better behaviors, especially less classroom disruptions, as opposed to those students who do not receive positive reinforcement for their behaviors.

Analysis of Results

Results of Mean Rank Scores in Looking at Student's Hitting Behaviors. Using a Mann-Whitney U- Wilcoxon Rank Sum Test Statistic, mean scores were evaluated across settings at the .05 significance level ($p < .05$) Results are shown in figures 4.1 and 4.2. The results, from the Mann-Whitney U- Wilcoxon Rank Sum W Test, show that Group 1, the experimental group, had less hitting behaviors to themselves and others. The results also show that students from Group 2 (control group) demonstrated more hitting behaviors to themselves and other classmates and instructional. These hitting behaviors cause many of the disruptions during classroom activities and academics.

Table 4.1
Mean Scores of Students Hitting Themselves

p<.05

GROUP 1		GROUP 2	
Mean Rank	Sum of Ranks	Mean Rank	Sum of Ranks
5.50	33.00	7.50	45.00
5.83	35.00	7.17	43.00
4.25	25.50	8.75	52.50
4.50	27.00	8.50	51.00
4.00	24.00	9.00	54.00
5.00	30.00	8.00	48.00
3.58	21.50	9.42	56.50
4.00	24.00	9.00	54.00
4.17	25.00	8.83	53.00
3.50	21.00	9.50	57.00

Results from Table 4.1 indicate that the students who received reinforcement were less likely to hit themselves during classroom academics and classroom activities. Table 4.2 will show the mean scores of students who were hitting others.

Table 4.2
Mean Scores of Students Hitting Others

GROUP 1		GROUP 2	
Mean Rank	Sum of Ranks	Mean Rank	Sum of Ranks
5.67	34.00	7.50	45.00
5.42	32.50	7.58	45.50
4.75	28.50	8.25	49.50
5.00	30.00	8.00	48.00
4.08	24.50	8.92	53.50
4.67	28.00	8.33	50.00
4.25	25.50	8.75	52.50
4.17	25.00	8.83	53.00
4.33	26.00	8.67	52.00
3.38	23.00	9.17	55.00

Results from Table 4.2 indicate that students who received reinforcement were less likely to hit others, either other classmates or instructional staff, as opposed to those students who did not receive positive reinforcement. Individuals from Group 2 (control group) were more likely to others, regardless of the activity.

Analysis of Mean Scores Looking at Time on Task and Task Completion Rates. Using a t-test for independent samples, the mean scores were computed and variables, time on task and task completion rates, were analyzed. Results, using a significance level of .001 ($p < .001$), indicate that differences do exist between the mean scores of Group 1 and Group 2 in regards to time on task and

task completion rates. Although significant data was found in some cases, not all scores were significant across settings. In looking at the variable, time on task, six out of the ten observations show a significance ($p < .001$). In looking at task completion rates, only five out of the ten observations show significant differences ($p < .001$).

Summary

The following findings were indicated in this chapter. First, there were significant results shown when the mean scores between Group 1 and Group 2 were compared looking at hitting behaviors. Group 1 showed less hitting behaviors, either to themselves or others. Group 2 mean scores indicated that these individuals hit themselves and others more frequently. In addition, in looking at the mean scores of task completion rates and time on task, Group 1 showed a better time on task than Group 2. In terms of task completion rates, significant data was only found in fifty percent (50%) of the observations. Overall, it appears that the Group 1 (experimental group) demonstrated better behaviors in the classroom and seemed to have a longer duration of time on task.

CHAPTER V

Summary

The purpose of this study was to demonstrate that, although behavioral interruption has been found to be effective in institutional settings, it could be distracting or inappropriate during a classroom lesson in an educational setting. The purpose of this present study is to provide information to support, that through the use of behavioral intervention techniques, especially the use of positive reinforcement (i.e. toys, food, and verbal praise), teachers can help to improve negative and destructive behaviors and help improve the academic success of the child, regardless of the handicap. The purpose of the current study is to view two unique groups of autistic children in a preschool setting. The one group received reinforcement for their behaviors, time on task, and completion rates. The other group, of students, did not receive reinforcement, regardless of behaviors, time on task, and completion rates. The ultimate goal, through this research, was to share the results with the instructional staff, of the preschool, in the hopes that the data will assist the staff in improving the academic successes of the autistic students.

Subjects in this study are enrolled in the Gloucester County Special Services School District Autistic Preschool. This preschool facility is located in the Pennsylvania suburbs. The facility is currently being housed in a Vocational-Technical school which is located in the Pennsylvania suburbs in Gloucester County, New Jersey. Twelve (N=12) autistic preschool students will serve as the subjects for this study. There are seven (7) females and five (5) males participating in this research project. Subjects range in age from two years of age to six years of age, with the mean age being three.

Students enrolled in the Gloucester County Special Services School District Autistic Preschool attend the preschool five days a week. Students attend the school Monday through Friday and attend school twelve months out of the year. Students begin their school day at eight-thirty in the morning and end their day at two-thirty in the afternoon. Students are brought to school, via school busses, from their respective towns that the students live in.

Teachers, who serve as instructional staff, have worked with autistic students for a minimum of three years. There are six (6) full-time teachers and three (3) part-time teacher aides that assist the children during daily activities and classroom lessons.

Previous research, as shown in Chapter II, indicate mixed findings in regards to the use of behavioral interventions in the classroom. In order to determine the relationship, between the groups, across different variables a Mann-Whitney U-Wilcoxon Rank Sum W Test was used. The Mann-Whitney U - Wilcoxon Rank Sum W Test is a statistical test that is used for comparing two populations based on independent random samples. The researcher felt that this test was most appropriate in comparing the two groups in this design.

The following findings were indicated in this study. First, there were significant results shown when the mean scores between Group 1 and Group 2 were compared looking at hitting behaviors. Group 1 showed less hitting behaviors, either to themselves or others. Group 2 mean scores indicated that these individuals hit themselves and others more frequently. In addition, in looking at the mean scores of task completion rates and time on task, Group 1 showed a better time on task than Group 2. In terms of task completion rates, significant data was only found in fifty percent (50%) of the

observations. Overall, it appears that the Group 1 (experimental group) demonstrated better behaviors in the classroom and seemed to have a longer duration of time on task.

Conclusion

The following conclusions were made about the results. First, there were significant results found, in regards to hitting behaviors between the two groups. Second, review of the mean scores, in looking at the variables time on task and task completion rates, indicate that significance was only found under certain settings. Overall, it does appear, that through this research, individuals who received positive reinforcement performed better in the class and had better classroom behaviors.

Discussion and Future Considerations

There are many factors and variables that can affect any research. This section will explore variables that have a potential affect on the results. Also, it will take a closer look at future considerations of this research.

Although the hypotheses were met in this study, there are many factors that could have determined the results of some of the data that was not found to be significant. In attempting to overcome some of the limitations, that are noted in Chapter I, the first problem with this study is that the sample size is too small. For convenience purposes, the researched utilized the facilities that were made available. Unfortunately, due to time constraints, the researcher was only able to visit the students and observe one day a week. Some of the results, from the study, may have been different if the researcher was able to observe the students on a more frequent basis.

In addition, some difficulties with this study, were that the results can only be generalized to preschool-aged populations. For future considerations, the study may want to look at comparing students of different age groups. Perhaps a longitudinal study that follows the Special Education from preschool through high school. This would be an intense study, but it would show if reinforcement really affects the behaviors of individuals. Also, the researcher would like to see the study compare two preschool-aged groups. The one could be mainstreamed students and the other could be classified Special Education students.

The research also had its limitations in regard to the design of measurement. The tool used for this design was constructed by the researcher. The test was probably not highly reliable.

Overall, even though limitations were part of this study, the results do indeed show that behavioral intervention techniques can show a difference in the academic success of preschool-aged autistic students.

In a highly specialized, behaviorally-based program, children's behavior management strategies are generally individualized. As the students develop more appropriate classroom behaviors, the teacher can carry out a classroom behavior management system. A behavior chart can be used where children work toward a daily group special activity or reinforcer. At predetermined time intervals, for example approximately thirty minutes. If the child has been behaving appropriately, his/her name tag will move up one step on the chart. If not, his/her name tag will remain at its present level and the teacher will review with the student the desired appropriate behavior. When developing this type of chart, the teacher will determine the number of steps the child will

need to take in order to earn a reward. If the reinforcement is a group activity, the system incorporates positive peer pressure and incentive for the child to participate in the group. The researcher believes that rewards will enable students, with handicaps, to perform more productively in mainstreamed classrooms.

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APPENDIX

APPENDIX A: CONSENT FORM

GRADUATE STUDY

PARENT PERMISSION FORM

Dear Parent/Guardians:

As a graduate student at Rowan College of New Jersey, I will be conducting a study in measuring the effects of behavioral interventions on Autistic Aged Preschool students. During this study, I will be observing the daily activities of the children in the Gloucester County Special Services Preschool. At times, the observations will be videotaped. If you would not like me to either observe or videotape your child please contact me at (609) 468-1445. If there are any further questions, please contact me.

Respectfully Submitted:

Jamie Dundee

Graduate Student.