Reducing Aggressive Behaviors in Students with Autism by Implementing Scheduled Relaxation Exercises

Jodi Loomis California Lutheran University

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Dedication

This thesis is dedicated to my family, who have supported me through this incredible journey. Thank you for never letting me give up and for giving me the strength to push through. I would also like to thank my professor Dr. Maura Martindale who taught me that "I can do this", and for her never ending patience. Thank you also to Dr. Ian Scheu for helping in the end and working those final details with me. I would like to give a special "Thank You" to Pat Cane, the founder of Capacitar International and Capacitar for Kids, an amazing healing, wellness, and relaxation program that has made such an impact on myself and my students. I am grateful for the people who have surrounded me and encouraged me to complete and succeed at what I was always meant to do.

Abstract

The purpose of this quantitative study is to examine the aggressive behavior of elementary students with a diagnosis of autism or multiple disabilities in a moderate to severe special day class before and after the implementation of scheduled, relaxation through exercises using a single subject interrupted times series pre-intervention, intervention, postintervention design. To date, no research studies have been conducted to discover if this particular activity may assist in reducing aggression and promote student learning in the classroom. Capacitar for Kids: A Multicultural Wellness Program for Children, Schools & *Families* incorporates breathing, centering, meditation, energy flow, balance, managing emotions, acupressure, and tai chi to clear the mind and increase focus and, in turn, to establish more effective learning (Cane and Duennes, 2005). The study consisted of three participants ages 8-10. Two have a diagnosis of autism and one of multiple disabilities. Data was collected using researcher-made data collection forms. Aggressive behaviors including screaming, crying, punching, biting, grabbing clothing, hitting, scratching, pulling hair, kicking, destroying objects, or throwing objects were tallied for each student, along with the duration and the possible functions of the behaviors. Results indicated a decrease in aggressive behaviors of the three participants by a total of 234% during the intervention phase of the study, when relaxation was implemented three times daily. The significant results give reason for further research and provide a practical approach to reducing aggressive behavior in students with autism or multiple disabilities.

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Chapter One: Introduction

Aggressions

Aggressive behaviors are often observed in children with autism spectrum disorder (ASD). Machalicek, O'Reilly, Beretvas, Sigafoos & Lancioni (2007) state that it can hinder their learning and in fact be quite stigmatizing (as cited in Matson, 2009, p. 170). Hellings et al. argue that aggressive types of behaviors, such as hitting, biting, kicking, scratching, and throwing of objects are commonly seen among children with autism spectrum disorder (as cited in Matson, 2009, p. 171). Dominick et al. found that children displaying these types of disruptive behaviors typically have a lower IQ, have difficulty with expressive language, and have problems with social skills (as cited in Matson, 2009, p.171).

Statement of the Problem

As a special education teacher at the Sunflower Elementary School, in a Special Day Class (SDC) with students with autism and a student with multiple disabilities, I have documented these aggressive behaviors daily, and they can last from five minutes to 45 minutes. These behaviors directly interfere with the students' ability to access the instruction and the social environment. There is limited research that deals specifically with the treatment of the challenging behavior of students with ASD in classroom settings (Machalicek, O'Reilly, Beretvas, Sigafoos, & Lancioni, 2007). However, these behaviors are occurring frequently in the special day class at Sunflower Elementary School. Furthermore, results from a recent study by Kanne and Mazurek (2011) indicated that out of 1,380 children and adolescents with ASD, 68% showed aggression toward the caregivers and 49% towards non-caregivers. These high percentages, along with ASD being identified in 1 in every 88 children (New Data on Autism

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Spectrum Disorders, 2012), indicate the need to pay attention to interventions and programs that target aggressive behaviors.

Classroom Description

The SDC, located in an elementary school in a small city in Southern California, North of Los Angeles, was established seven years ago to serve students with severe behavior problems who were not successful in programs in their home schools in the district. The classroom can accommodate students in kindergarten through fifth grade with any disabilities defined under the Individuals with Disabilities Education Act (IDEA). Currently, a system of positive behavior supports is in place. Students in this class receive intensive applied behavior analysis (ABA), as well as the use of a token economy system and proactive teaching daily. "ABA employs teaching where the objectives of intervention are to teach your child those skills that will facilitate his development and help him achieve the greatest degree of independence and the highest quality of life possible" ("Applied Behavior Analysis (ABA)", 2011). All students are on a token system where they receive tokens for engaging in appropriate behavior. When they fill up their token board with 6 tokens, they have access to their choice of positive reinforcement, which is usually candy, a treat, a cookie, toys, iPad, games, and so forth. Daily proactive teaching skills include the systematic teaching of student-specific skills that can affect behavior and socialization in a controlled setting.

The Need For Research

These behavioral strategies show some improvement in teaching ASD students to learn appropriate coping strategies in order to manage their behavior. However, there is still a presence of aggression in this particular classroom. Informal observation records (teacher-made

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Antecedent, Behavior and Consequence (ABC) data sheets) document aggression in three students. In a two-week period, over ten school days, 80 aggressive behaviors were observed and recorded for each of the three students. The behaviors that these three students exhibited included: screaming, crying, punching, biting, grabbing clothing, hitting, scratching, pulling hair, kicking, destroying or throwing objects. The possible functions for these behaviors include escape, avoidance, tangible, attention, and frustration. Sometimes the aggressive behavior of one student will cause another student to show aggressive behavior at the same time; this impedes learning for the two students as well as the rest of the class. These behaviors can be so severe that the students engaging in the behavior, need to be removed for their own safety. Staff resources are continually being directed toward addressing these behaviors, rather than teaching and assisting the students both socially and academically.

There is some evidence that various systems of relaxation exercises, including yoga, Tai Chi, and Progressive Muscle Relaxation, may reduce these aggressive behaviors in the classroom and promote academic engagement and learning (Mullens and Christian, 2001; Lopata, 2003; Hernandez Reif & Thimas 2002; Rosenblatt et.al, 2011). While there is some literature on these aggressive behaviors, there is limited research on using a specific relaxation program to reduce aggressive behaviors in students with severe disabilities.

The purpose of this study is to determine the effectiveness of implementing a specific scheduled program of exercises used in *Capacitar for Kids*, which includes relaxation and calming techniques, along with the continued use of applied behavior analysis (ABA), token economy, and proactive teaching programs that are already in place in the classroom.

Overview of Methodology and Treatment

Capacitar for Kids is a program in Multicultural Wellness Education for children, schools, and families (Cane and Duennes, 2005). It incorporates breathing, centering, meditation, energy flow, balance, managing emotions, acupressure, and tai chi, and is designed to clear the mind, increase focus, and in turn establish more effective learning. "In the classroom children can learn to take responsibility for their health, to care for their bodies and to alleviate pain by holding an acupressure point or by using some of the other Capacitar exercises" (Cane and Duennes, 2005, p. 38). In the present study, several exercises from the Capacitar program will be utilized daily, along with calming music. The exercises will be integrated into the school day before circle time, after recess, and after lunch. Each session will last for approximately ten minutes. This will be a non-contingent program for the students. Students will be able to participate in the program three times daily regardless of the behavior and aggressions displayed throughout the day.

The purpose of this quantitative study is to examine the aggressive behavior of three students who are in the moderate to severe special day class, and who have a diagnosis of autism or multiple disabilities. Their aggressions will be measured and observed before, during, and after the implementation of the *Capacitar for Kids* exercises, using a single-subject interruptedtimes series: pre-intervention, intervention, and post-intervention design. To date, no research studies have been conducted to discover if this activity may assist in reducing aggression in students with autism and promote student learning in the classroom.

Research Questions

To achieve the stated purposes of this research, two research questions are addressed:

1. How can we reduce aggressive behaviors in a SDC classroom?

2. Will specific, scheduled relaxation and calming activities decrease aggression in a SDC setting?

Research Hypothesis

Two elementary school students with autism and one elementary student with multiple disabilities who receive specialized academic instruction in a special day class, will exhibit a decrease in frequency and duration of aggressive behaviors through the implementation of specific, scheduled relaxation exercises during the school day, as measured by a record of observational data.

Operational Definitions

- <u>Aggression Behaviors</u>: behaviors that include screaming, crying, punching, biting, grabbing clothing, hitting, scratching, pulling hair, kicking, destroying objects, or throwing objects.
- <u>Special Day Class at Sunflower Elementary School</u>- a classroom setting for students who do not participate in the general education classroom except for non-academic and extracurricular activities. All academic instruction is received in the SDC classroom.
 Students in this class can range from kindergarten to fifth grade, with disabilities including autism and multiple disabilities. Students in this class typically have significant behavior challenges.
- <u>Specialized Academic Instruction</u>- "Adapting as appropriate to the needs of the child with a disability the content, methodology, or delivery of instruction to ensure access of the child to the general curriculum." ("Special Education Services", 2013)

- <u>Relaxation</u>-deep breathing, calming exercises, meditation, centering, *Capacitar for Kids* visualizations, balancing, acupressure, tai chi movements, and energy flow are relaxation exercises.
- <u>Capacitar for Kids</u>-"a program in Multicultural Wellness Education for children, schools and families." (Cane and Duennes, 2005)
- <u>Applied Behavior Analysis</u>- "uses an understanding of why behavior occurs to address a wide range of social issues, including helping individuals to learn. Like other applied sciences, ABA can be applied to a range of populations and settings (e.g., business and industry, education, gerontology, healthcare) and to a range of social concerns (e.g., anxieties, depression, phobia, addiction, behaviors associated with autism)." ("Applied Behavior Analysis (ABA)", 2011)
- <u>Autism Spectrum Disorder</u>- Autism spectrum disorders (ASDs) are a group of developmental disabilities that can cause significant social, communication and behavioral challenges. (Center for Disease Control. Retrieved from <u>http://www.cdc.gov/</u> <u>ncbddd/autism/index.html</u>)
- <u>Multiple disabilities</u>- "Multiple disabilities means concomitant impairments (such as mental retardation-blindness or mental retardation-orthopedic impairment), the combination of which causes such severe educational needs that they cannot be accommodated in special education programs solely for one of the impairments.
 Multiple disabilities does not include deaf-blindness."(<u>http:// IDEA.ed.gov</u>)
- <u>Eloping</u>- includes running out of the classroom, running away from the work area or reinforcement area, or running away from the adult that the student is working with.

Chapter Two: Literature Review

Challenging behaviors, such as aggression, are present in children with autism (O'Reilly et al., 2009). Without proper interventions, these behaviors can perpetuate in people with autism spectrum disorder (ASD) and associated disabilities. Aggressive behaviors may prevent a student from successfully accessing their academic and social environments and, in turn, these behaviors can affect the teacher's ability to effectively deliver instruction (Machalicek et al., 2006). Various relaxation techniques, such as yoga, meditation, progressive muscle relaxation, and guided imagery, have been found to improve breathing, lower heart rate, increase participation, and reduce both behavioral acting out and distress, as well as anxiety. This has been found in children with learning and behavior problems as well as specific disabilities. (Lopota, 2003).

This study will investigate the effectiveness of implementing a relaxation program, *Capacitar for Kids*, to reduce aggressive behaviors in students with autism as well as students with multiple disabilities. The first part of the literature review examines the minimal research on aggressive behaviors in children and adolescents with Autism Spectrum Disorder. The second part of the literature review examines the limited research on utilization of relaxation strategies with children with a diagnosis of autism, emotional/ behavioral disorders (E/BD), or attention deficit hyperactivity disorder (ADHD). While there is evidence of studies implementing relaxation practices on autistic children who exhibit aggressive behaviors, there has yet to be a study utilizing specific techniques from *Capacitar for Kids* to reduce these behaviors in children with autism who receive their specialized academic instruction (SAI) in a special day class.

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Aggressive Behaviors of Children and Adolescents with ASD

The study by Kane and Mazurek (2011) is one of the first studies to examine prevalence rates and risk factors for aggressive behaviors of children and adolescents with ASD using a large national sample. The literature review in this study confirms the existence of aggression in children and adolescents with ASD, and further confirms that disruptive behaviors can have negative effects on the child as well as on the teachers, caregivers, and parents involved. In addition, the study analyses the correlation of intellectual disabilities, ASD, and aggression in its literature review.

The national study included a sample of 1,380 children ages 4 to 17 (mean age=9.1 years, SD=3.5). The children were part of the "Simons Simplex Collection (SSC), a North American multiple-site, university-based research study that includes families with only one child with ASD" (Kane and Mazurek, 2011, p. 928). The IQ scores ranged from 13-167, and the greater number of participants were male. The study examined the prevalence of risk factors for children with ASD compared to non-ASD students, as well as the level of severity and specific ASD symptoms in regard to aggression. Risk factors included income, age, parental education, gender, marital status, cognitive and adaptive functioning, language, and communication.

Kane and Mazurek (2011) used several measures to assess and calculate core symptoms of ASD: aggression, cognitive functioning, adaptive skills, receptive language, emotional behavioral functioning, and family history. The *Autism Diagnostic Interview-Revised* (ADI-R) is a 93-item semi-structured diagnostic interview. It provides basic developmental history as well as information on core elements of ASD (including language, communication, and social interactions) along with repetitive, restrictive, and stereotypic behaviors. The *Autism Diagnostic* *Observation Schedule* (ADOS) is a standardized observational assessment that concentrates on core ASD symptoms similar to those in the ADI-R, in addition to imagination, creativity, and restricted interests, which are compiled into four different modules. The *Social Responsiveness Scale* (SRS) is a parent report that is used to assess various attributes of children with ASD. It includes sixty-five questions that look at social motivation for engagement with others, reciprocity in social interactions, and emotional and social cues. The *Repetitive Behavior Scale-Revised* (RBS-R) was administered to all the parents of the participants. The RBS-R focused on targeted repetitive behaviors that are observed many times in children with ASD. Five subscales were a result of the response analysis: 1) Stereotypic behaviors; 2) Self-injurious behaviors; 3) Restricted Interests; 4) Compulsive Behaviors; and 5) Rituals/ Sameness. All of the above tests have good inter-rater reliability according to Kane and Mazurek (2011).

Cognitive Functioning was measured using the *Differential Ability Scales, 2nd Edition* (DAS-II). IQ's of 89.6% of the sample were determined through this assessment. The *Mullen Scales Early Learning* was used on 4.2%, the *Wechsler Intelligence Scale for Children, 4th edition* (WISC-IV) was used on 2.7%, and the Wechsler Abbreviated Scale of Intelligence (WASI) was used for 3.5% of the sample. This was due to the varying ages of the sample and their ability to complete the assessments.

Adaptive measures were assessed using the Vineland Adaptive Behavior Scales, 2nd Edition-Survey form. It is a questionnaire that is filled out by the parents. It consists of three categories: communication, socialization, and daily living. The results of the scores of these three categories provided an Adaptive Behavior Standard Score. Other measures used included the *Peabody Pictures Vocabulary Test, 4th Edition* (PPVT-4), which also has good test-retest

reliability, to assess receptive language. Lastly, the *Child Behavior Checklist* (CBCL) was used to measure emotional and behavioral functioning. This is a checklist completed by the parent, tracking the child's or adolescent's symptoms over the previous six months. There are eight scales including anxious/depressed, social problems, attention problems, rule breaking, withdrawn, physical complaints, and aggressive behavior. Aggressive behavior included physical aggression, property destruction, and verbal aggression. The aggressive behavior scale was looked at more closely in Kane and Mazurek's study.

Kane and Mazurek (2011) focused on aggression using the ADI-R, which had specific questions that asked about both current and past aggression of children and adolescents, and whether the aggression was directed towards caregivers or non-caregivers. The results of the questions based on aggression from the ADR-I, coupled with analysis, developed into a division of the sample into two categories. One group was showing aggression to both caregivers and non-caregivers and the other group was not showing aggression.

Results of the study indicated that out of 1,380 participants, 56% were currently engaging in some form of aggressive action toward caregivers, 32% toward non-caregivers. In general, children and adolescents with autism spectrum disorders (ASD) in this study had overwhelming results, with 68% showing some type of aggression to a caregiver, and 49% showing aggression to non-caregivers. Results also indicated that when the child or adolescent showed aggression toward a caregiver, they were also likely to display that aggression towards non-caregivers. In addition, Kane and Mazurek (2011) reported a higher frequency of aggressive behaviors in correlation with higher increases in income, repetitive behaviors, and social /communication deficits, and a lower frequency of aggressive behaviors in correlation with increases in age.

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Factors that typically have bearing on aggressive behavior with non-ASD children, such as parent marital status, parent education level, and intellectual functioning, were not seen as predictors for aggression in ASD children. Finally, aggression among both boys and girls in this study was similar, which is generally not the case among typically developing children. Boys have historically been more likely to engage in aggressive behaviors.

Some limitations of the study included: 1) parent reporting that could lead to bias; 2) a longer study would have shown how levels and predictors of aggression change as the child ages; 3) using mostly "high functioning" children with IQ scores within the low average range; and 4) the child with ASD being the only child in the family with this disability. Even with these limitations taken into consideration, this study shows there is a high degree of aggression in children and adolescents with ASD.

There are common symptoms and factors related to this aggression that give us powerful data to use in future research. The study by Kane and Mazurek (2011) demonstrates that there is a high prevalence of aggression toward caregivers and non-caregivers in both children and adolescents with ASD, as well as risk factors relating to it. The results of this study indicate the importance of implementing calming and relaxation strategies in the classroom for these children to help them reduce these types of aggressive behaviors. This will be shown later in this author's study.

Aggression in Children with Autism Spectrum Disorder and Intellectual Disabilities

Another study of aggression with children with autism spectrum disorders was done by Farmer and Aman (2011). They compared a sample of 121 children with autism, ages 3-20 years, to a sample of 244 children with intellectual and developmental disabilities ages 4-21

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years. Farmer and Aman argue that while aggression in children with ASD has not been distinguished as a core symptom, research reports show that aggressive behavior has been a significant factor in children with intellectual disabilities (ID). They report that there has been some documentation to conclude that there is a correlation between the effects of aggressive behavior for children with ASD and ID.

Participants in Farmer and Aman's study were children who received special education services from the state of Iowa, or were members of the ARC (Association for Retarded Citizens) of Ohio listserv. "The ARC of Ohio is a statewide membership association made up of people with intellectual and developmental disabilities, their families, friends, interested citizens, and professionals in the disability field" ("About the ARC of Ohio", 2012). A total of 365 children were used for the study with the focus on the ASD subgroup that consisted of 121 children, which was 33% of the entire sample.

A total of 1,225 parents whose children were receiving special education services in the state of Iowa were sent a packet that included the C-SHARP questionnaire form, a form on demographics that specifically asked for information regarding traits, developmental abilities, psychiatric diagnoses, and current medications. Members of the ARC of Ohio listserv received an email, and if they responded they were sent the same packet as the parents of the children receiving special education services in Iowa.

The C-SHARP questionnaire measures aggression through its *Children's scale for Hostility and Aggression: Reactive/Proactive* (C-SHARP). They also looked at ASD characteristics of aggression, including specific behaviors and subtypes of aggression, as well as the types of ASD, gender, and age. The C-SHARP has five subscales including: Verbal Aggression, Bullying, Covert Aggression, Hostility, and Physical Aggression. The problems are rated on two Likert scales, one for frequency and another for severity.

The results indicated that the subgroup with ASD had a considerably higher proportion of males than the subgroup with Intellectual Developmental Disabilities (IDD), which was the only significant variance in the demographics. On the three subscales of Bullying, Hostility, and Physical Aggression, the group mean scores subjected to t-tests showed considerably higher scores for children with ASD than those with IDD. Children in the ASD subgroup classified as "moderate" or "severe" scored highest in the areas of Reacts Impulsively (70.1%), Hot-headed (63.6%), and Slow to Cool Off (55%). The Verbal Aggression subscale results did not have any comparable differences, showing that both the ASD and the IDD subgroups engaged in these behaviors similarly. The ASD subgroup also showed higher rates than the IDD subgroup in regard to the Bullying and Hostility subscales.

Lastly, the average scores of the subscales were evaluated via t-tests based on the specific diagnosis, which included autism, Asperger's, or pervasive developmental disorder not otherwise specified (PDD-NOS). They also looked at age ranges: less than nine years old; 10-13 years old; and above 14 years old; and also whether the children were male or female. While there were not any major differences to be reported for age and gender, younger children received higher scores for the subscales of Bullying and Aggression, and lower scores on the Verbal Aggression subscale. The Asperger's subgroup showed noticeably higher scores than the autism subgroup on the subscales of Verbal Aggression and Covert Aggression.

Farmer and Aman (2011) concluded, taking into consideration the limited amount of research in this area, that children with autism spectrum disorders do in fact engage in aggressive

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behaviors. These behaviors may be displayed at higher rates than children with other disabilities such as IDD, but both, in fact, engage in aggressive behaviors. While some of the aggressive behaviors may be a result of unawareness of personal space, someone taking something of theirs, lack of impulse control, or not intentionally meaning to cause distress or harm to others, the scores are significant enough to show that these behaviors can cause problems for the child with ASD, in both the social and academic environment.

Farmer and Aman's study has some limitations, including parent reporting reliability, and their accuracy of reporting disabilities and diagnoses. They also found that some of the scores that were higher, such as Reactive/Hostile aggressions, are characteristic of children with Attention Deficit Hyperactivity Disorder (ADHD). Since ADHD is not part of the current DSM model of ASD, which does not allow for diagnosis of ADHD in children with ASD, this finding needs to be further researched. Their study also did not look at the child's IQ or adaptive behavior, which would more than likely impact the results of the study. Future studies would need to use a larger sample, and also look at the type of ASD diagnosis, simultaneously existing diagnoses, age, gender, and functional levels. Farmer and Aman's study confirms that various forms of aggression exist in children with ASD at higher rates than children with other disabilities. Given the above information on aggression in children with ASD, there needs to be more research examining strategies and programs that can be utilized effectively to decrease disruptive behaviors in both academic and social settings.

Relaxation

This next section of the review of the literature will examine the effectiveness of relaxation, including Progressive Muscle Relaxation (PMR), Yoga, and Tai Chi in children with autism, emotional/behavioral disorders, and Attention Deficit Hyperactivity Disorder.

Edmund Jacobsen developed Progressive Muscle Relaxation (PMR) in 1939. "The PMR procedure teaches you to relax your muscles through a two-step process. First you deliberately apply tension to certain muscle groups, and then you stop the tension and turn your attention to noticing how the muscles relax as the tension flows away" ("Progressive Relaxation", 1997-2013).his type of relaxation has benefited individuals with and without disabilities (Jacobsen, 1939).

A boy with autism and disruptive behaviors receiving PMR training.

According to Mullins and Christian (2001), research indicates that Progressive Muscle Relaxation has resulted in benefits for children with autism and other developmental disabilities, with a result in decreased aggression. Mullins and Christian (2001) examined a boy with autism who displayed disruptive behavior, and they examined the effectiveness of implementation and training in Progressive Muscle Relaxation. Chris, who was the boy in the study, was 12–yearsold with a diagnosis of autism and mild mental retardation. He received his special education services in an elementary school and also received home-based behavior services through a local agency. The study was conducted in Chris's home, and also in the home of the first author, where Chris was receiving respite care. Both settings were environments in which Chris was comfortable and familiar. Some of the behaviors Chris engaged in were loud, brief screams, sounds with a high ascending pitch, echolalic statements, as well as hand and toe chewing, nose picking, and finger picking. These behaviors usually occurred during demanding, stressful situations, and during times with a low level of supervision or no supervision.

Each experimental condition was presented five times in random order, and an equal number of times across settings. The sessions were videotaped, and then data was collected on the use of Progressive Muscle Relaxation, using the Behavior Relaxation Scale (BRS), and the percent of time engaging in disruptive behaviors. The BRS is an observational method that assesses the degree to which an individual displays a relaxation response. To obtain a baseline, Chris was observed during leisure activity sessions that included looking through preferred magazines, or watching television shows, when there was minimal supervision. This activity was chosen for the study because it was one of the times Chris most frequently displayed the disruptive behaviors. The baseline data during leisure activity was collected before implementation of the relaxation training.

Chris received training for Progressive Muscle Relaxation via a training book that Mullins and Christian adapted from the work of Cautela and Groden (1978). The training book consisted of copies of drawings of a boy performing each step of the Progressive Muscle Relaxation program. The training included resting for 1 minute before and 1 minute after performing the steps in Mullins and Christian's PMR book. Prompts were used and recorded from most to least intrusive. Each session was 6-10 minutes long, and included completing the exercises in the PMR book two times. This phase of the study took 11 sessions until Chris was mostly independently performing the relaxation exercises. Conditions observed were; 1) not having PMR relaxation exercises before the leisure activity, which was considered the baseline; 2) having PMR relaxation before the leisure activity; and 3) relaxation before the leisure activity with prompts to relax (cued relaxation).

Data was collected by two trained graduate students who reviewed the BRS and the videotapes, which included the PMR training, disruptive behaviors, relaxation behaviors, and the leisure activity. The Upright Behavior Relaxation Scale (UBRS), which is a variation of the BRS, was used as well. This allowed for measuring relaxation in an upright position. Results overall showed that there was a decrease in the duration of disruptive behaviors in this autistic boy using the PMR training. When the training was before the leisure activity, Chris exhibited disruptive behaviors a mean of 18% of his time. A mean of 31% of his time was spent in disruptive behavior during the cued relaxation phase, and a mean of 55% during the baseline measurement when he was just engaging in the leisure activity without the implementation of the PMR training. The BRS findings indicated that relaxed behaviors increased right after training in Progressive Muscle Relaxation. Chris performed these exercises almost independently, with little prompting. Parent and in-home behaviorist reports stated that Chris was able to independently employ some of the learned techniques during stressful times or activities. concluding that he did acquire the relaxation skills, and there was evidence of some generalization of the Progressive Muscle Relaxation exercises.

Limitations of this study included the need for a longer experimental phase, as Chris's behavior was variable throughout the study during this phase. Another limitation is the use of the BRS, as the scores for relaxed behaviors never went higher than 60% during the entire study. The BRS is typically used with 5 minutes observations, yet for this particular study, due to behavioral challenges, cognitive abilities, and inattention of the participant, one-minute

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observations were used. The BRS had yet to be studied using one-minute observations. Further research is necessary to determine the validity and reliability of the BRS when used with individuals with autism, and to look at the behavioral challenges, inattention, and cognitive abilities of these individuals in relation to the procedures of the BRS.

Mullins and Christian (2001) also suggest different relaxation training methods other than Progressive Muscle Relaxation, as well as varying the setting (e.g., a bean bag chair, a reclining position rather than upright) may impact and improve the results further. They also conclude that there is a possibility that Progressive Muscle Relaxation may have become a replacement behavior for Chris. Further research would be needed to compare PMR and a different system used for replacement behavior, and then assess the effects on disruptive behavior. Lastly, Harvey, Karan, Bhargava & Morehouse (1978) state that it is possible that there would be a larger decrease in disruptive behaviors if the Progressive Muscle Relaxation training was used in combination with other supports such as positive reinforcement, time out, and stimulus change (cited in Mullins and Christian, 2011). Even though Chris's disruptive behaviors definitely decreased after receiving relaxation training, they did not decrease throughout the study.

While Mullins and Christian's study confirmed there was a definite decrease in disruptive behaviors, it clearly states that there are limitations to PMR, and that other types of relaxation techniques and programs should be researched. The study concludes that the disruptive behaviors observed in Chris significantly interfere with this boy's environment, yet they are not as aggressive as the behaviors exhibited by the three students in the present study. Mullins and Christian (2001) looked at Progressive Muscle Relaxation being presented in the home, rather than in a school classroom setting. This limitation gives further support for the need to study relaxation exercises in the classroom.

Progressive muscle relaxation with elementary children with behavior disorders.

Lopata (2003) states that students with emotional and behavioral disorders frequently engage in challenging behaviors that include physical aggression. In particular, Lopata examined PMR's ability to reduce aggression in elementary children with emotional or behavioral disabilities.

Lopata studied 24 students, ages six to nine, who were diagnosed with emotional or behavior disorders (E/BD). There were four classes consisting of 6 students in each class, as well as a teacher and an aide. The four classes were broken down into a younger group (kindergarten and first grade) and an older group (second and third grade). In both the younger and older groups there was a control and treatment group established through stratified randomcluster sampling. All students attended the day school/ treatment program, which was a behaviorally focused program and dealt with uncontrollable behaviors as well as aggression.

Measurements included a frequency count of aggressive occurrences using a tracking form, made by the researcher, as well the *Child Behavior Checklist* (CBCL), which included teacher rating scores on the aggression scale. The CBCL is a standardized test that measures individual emotional and behavioral problems. The physical aggressions that were tallied by the researcher-made forms were "hitting, slapping, biting, pushing/shoving and spitting;" and the design for Lopata's study was a "pretest-posttest-follow up control group" (Lopata, 2003, p 165). Teachers and aides that worked with the assigned treatment groups were trained in Progressive

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Muscle Relaxation, and received detailed procedures to follow that included a program of systematic relaxation of muscle groups.

One week of pretest data collection occurred, recording physical aggressions and completing the CBCL's aggression scale for each student. After the pretest, PMR was implemented daily for the treatment groups after breakfast, for forty minute sessions, five days a week, for four continuous weeks. Students were to lie on their backs on mats during the PMR sessions. While the treatment group was participating in the PMR, the control group was engaged in silent reading for the same amount of time. After the four weeks of treatment, an additional one-week posttest was conducted using the researcher-made frequency forms and the CBCL Aggression scale. An additional one-week follow-up posttest was administered three weeks after the first one-week posttest.

Results for the treatment groups that received the Progressive Muscle Relaxation indicated that there was a decrease in frequency of aggression, based on the researcher-made form, with a mean score of 0.67, which was significantly lower than the mean score at pretest, which was a mean score of 2.08. The results of the CBCL for the treatment groups also indicated a decrease in behaviors, with a posttest mean score of 25.33, which is lower than the pretest mean score of 34.83. Both frequency of aggression, as well as the CBCL, showed slight increases from posttest to follow–up, which was three weeks after the posttest. The mean scores for the control groups for frequency of aggression and CBCL had an increase for posttest mean scores.

An examination of the limitations of this study indicate that more attention should be placed on the various levels of aggression during the pretest phase, since the students in these

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treatment groups had, overall, higher levels of aggression before implementation of the relaxation training. A larger sample, random assignment of individuals instead of clusters, and classification by age and level of aggression, would be useful conditions for future study. While there was a significant reduction in physical aggression due to the use of Progressive Muscle Relaxation, this study provides only short term effects because the data concluded that there was an increase in aggressions three weeks after the posttest.

The Lopata study has a research design similar to the one that will be used in the current study, which is a single-subject, interrupted-time series. It is important to take into consideration the idea of a follow-up study, and to take note if the introduction of the new exercises caused the decrease in aggression, or the relaxation program itself caused the decrease. Nevertheless, while Lopata's study shows positive effects for aggression reduction in children with E/BD using Progressive Muscle Relaxation, the study did not look at children with a diagnosis of autism to determine whether PMR can reduce aggression in these students.

Yoga and Dance Therapy for Students with Autism

"Yoga is a mind and body practice with historical origins in ancient Indian philosophy. Like other meditative movement practices used for health purposes, various styles of yoga typically combine physical postures, breathing techniques, and meditation or relaxation" (*Yoga for Health*, 2008). The next study examines the implementation of yoga and dance therapy, as well as breathing techniques, for students with autism.

A study by Rosenblatt et al., (2011) examined 24 children ages 3 to 16 years of age. All the children had a diagnosis of autism spectrum disorder (ASD). Children were selected who had been referred to the senior author's outpatient treatment practice, while others were selected from a listserv of children with a diagnosis of ASD who were informed of the relaxation program's accessibility. The method of measurement used for this study was a pretest, treatment, and posttest. The Behavioral Assessment System for Children, Second Edition (BASC-2) scale was used as well as the Aberrant Behavioral Checklist (ABC). These two tools assess problem behaviors of children and psychiatric functions (Rosenblatt et al., 2011). The program was implemented over eight weeks, with a 45-minute session each week. Each session included breathing techniques, yoga positions, relaxation, as well as music and dance. The child's caretaker or parents gave verbal and visual cues during the sessions. According to Rosenblatt, results of pretest and posttest scores were analyzed using paired t-test comparisons. Of the three BASC-2 scales, the only improvement was seen on the Behavioral Symptom Index (BSI), and it showed higher improvement in children age three to seven. This could be due to the fact that children at younger ages are more receptive to programs with movement and sound. On the ABC, the entire group did not have any scales that changed. The children in the age range of three to seven showed that they were tending toward improvement on the irritability score on the ABC. Overall, children in the three to seven age range showed the greatest change in posttreatment when the scores of both the BASC-2 score and ABC for irritability were combined.

The study by Rosenblatt et al. effectively showed that there can be improvements in behavior in students with autism spectrum disorder through the implementation of yoga, breathing techniques, music, and dance. The authors did not go into detail on the specific music used, or the type of dance or breathing techniques. This information could be useful for further studies, but the authors only showed the different yoga poses implemented. This makes it difficult for researchers trying to recreate the study, or use parts of it in their own study. Limitations based on the findings of this study included the need to research this program with a larger number of subjects, more assessment tools, and an analysis of what contributes to individual responses to treatment. Rosenblatt et al. state that they need to take into account: 1) any medications the individual may be taking; 2) data of whether they practiced the program at home; and 3) whether the number of sessions they attended impacted the results. There was an ample amount of statistics, data, and analysis on this study to validate the findings.

Overall, this study provides evidence that implementing a relaxation program of dance, music, yoga, and breathing techniques (i.e., a multimodal relaxation program), produces a positive effect on children's behavioral and cognitive symptoms in the BASC-2. The discussed limitations and the need for further research attest to the fact that relaxation can affect children with autism. The Rosenblatt et al. study did not discuss aggressive behaviors comparable to the ones observed in the SDC class in the present study, but evidence supports continued research on children with ASD and children with multiple disabilities who engage in aggressive behaviors.

Tai Chi with Students with Attention Deficit Hyperactivity Disorder

The last study discussed in this review of the literature is by Hernandex-Reif, Field, and Thomas (2001). Their study examined 13 adolescent children with a diagnosis of attention deficit hyperactivity disorder (ADHD) who participated in Tai Chi classes two times a week for a total of five weeks. "Tai chi is an ancient Chinese tradition that, today, is practiced as a graceful form of exercise. It involves a series of movements performed in a slow, focused manner and accompanied by deep breathing" (*Stress Management*, 1998) People with ADHD have traits that include impulsivity, inattention, hyperactivity, behavioral, and cognitive deficits. Many children with this diagnosis take drugs such as Ritalin and Methylphenidate that have shown short-term improvements in their academic and social environments.

Hernandex-Reif et al. (2001) looked at anxiety, mood, hyperactivity, and conduct in11 male and three female participants with a mean age of 14.5 years. These students attended a middle school class for adolescents with developmental problems. The study's aim was to examine these children before, during, and after receiving Tai Chi training. The design for the study included the baseline phase, without Tai Chi; a 5 week Tai Chi Phase; and a follow up phase two weeks after the Tai Chi training ended. Tai Chi movements were taught two times a week over a five-week period. Each session was thirty minutes long, and took place in the afternoon. Breathing exercises were included with the various Tai Chi movements.

Data was collected using the *Corners Teacher Rating Scale* (CTRS-R) at baseline, at the end of the Tai Chi phase, and two weeks after the Tai Chi phase for a total of three data collections. The CTRS-R has 28 items, and includes scores for hyperactivity, anxiety, asocial behavior, conduct, dreaming, and emotion. According to Hernandex-Reif et al., this test has good test-retest reliability.

Overall, "during Tai Chi the children displayed (1) less anxiety, (2) improved conduct, (3) less daydreaming (4) less inappropriate emotions and (5) less hyperactivity" (Hernandex-Reif et al. (2001 p.121). These improvements continued in the two week follow-up phase without Tai Chi. The teachers reported that they observed adolescents in this study to be less anxious, emotional, and hyperactive after Tai Chi exercises.

Possible limitations of this study could be that the adolescents' positive improvements are a result only of the breathing exercises incorporated into the Tai Chi exercises, or possibly

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because the adolescents become familiar and comfortable with their instructor. The authors suggest that future studies include a breathing control group, as well as more than one instructor, to reduce the possibility that the improvement was from something other than the Tai Chi Exercises. Overall, Tai Chi is a program that needs to be looked at more closely, and could possibly be combined with other stress-reducing programs. It can be implemented with students with a diagnosis of autism, who exhibit aggressive behaviors that impact their ability to access their learning environment.

These studies in the review of the literature have provided useful information and data, as well as recent research in regard to aggression and relaxation. The limited number of studies that deal specifically with relaxation and reduction of aggression in children with autism is the reason for the current study. The focus of the current study will evaluate and examine a specific set of exercises from a relaxation program, *Capacitar for Kids*, and will analyze the effect it may have on reducing aggressive behaviors of children with autism and children with multiple disabilities. While *Capacitar for Kids* has been implemented as a pilot study to reduce stress levels in two catholic schools in Ohio, it has not been examined and evaluated in a special education classroom with children with significant disruptive behaviors. The present study will evaluate the use of various exercises from *Capacitar for Kids* and their impact on reducing aggressive behaviors. Chapter Three will provide details on the research design, the participants, and the instruments and procedures that will be used for this study.

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Chapter Three: Methods

Research Design

This quantitative study was conducted to analyze the correlation between the implementation of relaxation exercises from *Capacitar for Kids* and the reduction of aggressive behaviors in two elementary students with autism and one elementary student with multiple disabilities. A single-subject, interrupted time series design was used and evaluated for the present study. The entire study was three weeks in duration. Each week consisted of five school days, Monday through Friday. Week one was the pre-intervention phase (no relaxation); week two, the intervention phase (with relaxation); and week three, the post-intervention phase (without relaxation). Researcher-made aggression frequency forms were used to collect data on the three students. Aggressive behaviors that were tracked by frequency included screaming, crying, punching, biting, grabbing clothing, hitting, scratching, pulling hair, kicking, destroying objects, and throwing objects. The duration and functions of the behaviors were also tracked on the data forms. Results of the study allowed the researcher to test the following hypothesis: two elementary students with autism and one student with multiple disabilities, who receive their specialized academic instruction in a special day class for behavior, will reduce their aggressive behaviors in frequency and duration as a result of the implementation of scheduled relaxation exercises throughout the school day, measured by observation data records.

Participants

The participants were three elementary school students who received specialized academic instruction in a special day class (SDC) at Sunflower Elementary School, located in a small city in Southern California, north of Los Angeles. The school is a general education

campus that includes an SDC class designed for students who have significant disabilities, including disruptive aggressive behaviors. This setting was appropriate to test the hypothesis as it allowed the researcher to collect accurate and specific data as it occurred during the students' normal day, with the ability to provide good reliability. The participants were selected as a result of a sample of convenience, which is a non-probability sampling approach where subjects are selected because of their convenient accessibility and proximity to the researcher.

Three male students, one each in first, second, and third grade, participated in the study. Student A was in the first grade, had a diagnosis of autism, was seven years old, and was African American. Student B was in second grade, had a diagnosis of multiple disabilities, was eight years old, and was African American. Student C was in third grade, had a diagnosis of autism, was ten years old, and was Caucasian. All students spent their day in the SDC class at Sunflower Elementary School. They participated in the general education setting for recess, lunch, and extracurricular activities including music, PE, art, music, field trips, and parties.

The researcher obtained permission from the principal at Sunflower Elementary School to study the students in the researcher's classroom (See Appendix A). Intent and informed consent letters were given to the parents of each of the three students who participated in the study. The letter was hand delivered to the parents, and a follow up call was made to the parents to discuss the study further and to answer any questions they had. The signed consent forms were hand delivered back to the researcher by the parent of each of the three participants. All three parents that signed consent letters were willing and eager to have their children participate in the study (See Appendix B). The three students, whose parents provided written consent for

their child to participate in the study, were given assent forms, where they each indicated that they agreed to participate in the study (See Appendix C).

Instruments

A researcher-made frequency data collection form was used to record aggressions of each of the three participants. Experts have used these forms and have found them to be both reliable and valid. There was a daily form to track aggressions for each student throughout the entire school day. Eleven behaviors were tallied on this form: screaming, crying, punching, biting, grabbing clothing, hitting, scratching, pulling hair, kicking, destroying objects, and throwing objects. Possible functions for the aggressions and their duration in minutes were also recorded on the form. The functions included: escape/avoidance, tangible, attention, and frustration. This form was used to collect data in the pre-intervention, intervention, and post-intervention phases of the study. This was an appropriate instrument to use to measure aggressive behaviors for the students in this study as it allowed data collection of specific behaviors, possible functions, and the duration of the behaviors for each student (See Appendix D).

Procedure

The students participated in exercises from the *Capacitar for Kids Teacher Handbook* as well as the *Capacitar for Kids* DVD (Cane, P.C. & Duennes, M. (2005), both of which included step-by-step visuals of the exercises. Cane and Duennes developed this program to offer wellness for children involved in violence and trauma in their lives and surrounding neighborhoods. The idea was to bring health and wellness to these children through relaxation exercises including balance, Tai Chi, energy flow, visualization, and breathing. "Capacitar is a Spanish word meaning 'to empower, to encourage, to bring each other to life'" (Cane and

Duennes, 2005, p.6). The following exercises from *Capacitar for Kids, Section 2, Wellness Practices to Promote Energy Flow* were implemented in this study: Finger Holds to Manage Emotions, Side to Side, Rocking Movement, Shower of Light, Flying through the Air, and Salute to the Sun. In addition they did deep breathing. Side to Side, Rocking Movement, Shower of Light, and Flying through the Air are "energy exercises based on a variation of Tai Chi called Tai Chi Chih®, a simple form developed by Justin Stone" (Cane and Duennes, 2005, p. 28). Salute to the Sun is based on yoga practices from India to help energize the mind, body, and spirit.

Explanation of Exercises

Finger holds. (Cane and Duennes, 2005) - are helpful for children to use in school when difficult situations or challenges occur. Each finger corresponds to a different emotion (See Figure 1). They include the following: Thumb=Grief, Tears; (See Figure 2) Index Finger= Fear, Panic, Terror; (See Figure 3) Middle Finger=Rage, Anger; (See Figure 4) Ring Finger=Anxiety, Worry; (See Figure 5) and Small Finger=Lack of Self-esteem (See Figure 6). Each finger is held with the opposite hand for ten seconds. The child breathes in deeply and out slowly. The child will often feel a pulsing sensation as the energy moves through the fingers.


Figure 1: Finger Holds



Figure 2: Thumb Finger



Figure 3: Index Finger



Figure 4: Middle Finger Figure 5: Ring Finger Figure 6: Small Finger

Side to Side- swinging the arms loosely at the sides, back and forth, with one arm crossing over the front of the body and the other arm crossing over the back of the body.

Rocking Movement- "raise your heels and, at the same time with palms facing upwards, raise your hands and arms to the level of your chest. Turn your palms and move your hands downward while you lower your heels and raise your toes in a rocking movement. Continue the motion, slowly rocking up and down while you breathe deeply" (Cane and Duennes, 2005, p. 28) (See Figure 7).



Figure 7: Rocking Movement

Shower of Light- "left foot forward, hands separated the width of your body and palms facing each other, raise your hands up over the head, and move them downward as if showering yourself with light. Repeat on the right side with your right foot forward" (Cane and Duennes, 2005, p. 30). As you lift your hands breathe in and when you lower your hands breathe out. This is done while toes and heels are doing the same actions as the Rocking Movement, but one foot is in front of the other (See Figure 8). Before you switch sides, bring your hands into the centering position (See Figure 9).



Figure 8: Shower of Light



Figure 9: Centering Position

Flying through the Air-"with left foot forward, move your left hand above your left shoulder, palm outward. Move your right hand, palm upward, so that it is level at the right side of your waist. Swim or fly through the air" (Cane and Duennes, 2005, p. 32). The rocking movement, with one foot in front of the other, and deep breaths in and out, should be included in this exercise. Arms and shoulders should remain light and relaxed throughout. (See Figure 10)



Figure 10: Flying Through the Air

Salute to the Sun (Cane and Duennes, 2005) - rub your hands together, stand with feet shoulder-width apart. Hold hands out in front of you, palms facing up (See Figure 11). Then stretch arms forward with palms facing down and exhale (See Figure 12). As you inhale, move

arms up towards the sun, over your head slightly, arching your back (See Figure 13). Next, bring your arms forward and reach all the way down until your hands touch the ground (earth) (See Figure 14). Continue with breathing (inhale and exhale) during the entire exercise. Completely relax your body when it is bent over to the ground. Finally, from the bent position slowly move your body back upright, breathing in, and come back to standing position with arms bent up by elbow with palms facing out (See Figure 15). End the exercise with palms touched together (See Figure 16).



Figure 11: Palms Up



Figure 14: Reach Down



Figure 12: Palms Down



Figure 15: Elbows Up



Figure 13: Over Your Head



Figure 16: Palms Together

Students will be instructed to engage in deep breathing at the start of each set of exercises and at the end. Deep breathing will include breathing in through the nose and out through the mouth slowly. This type of breathing will also be implemented during the exercises.

The following exercises— Finger Holds to Manage Emotions, Side to Side, Rocking Movement, Shower of Light, Flying through the Air, and Salute to the Sun— were implemented three times a day: before circle time, after recess, and after lunch. The Finger Holds went through all the fingers of one hand, holding for 10 seconds for each finger hold, while taking a big deep breath in and out. Side to Side was done for 10 seconds. Rocking Movement was completed 10 times. Shower of Light and Flying through the Air were completed 5 times on each foot and side. The exercise program finished with the completion of Salute to the Sun. The total time for each exercise session was 10 minutes, and was conducted by the classroom teacher/ researcher. Classroom teacher/researcher and aides were trained using the *Capacitar for Kids Training Video* by Capacitar International, produced in Cincinnati, Ohio. The teacher/researcher and aides reviewed and practiced the exercises that were used in the study one week prior to the study.

Different music CDs were played in the background and alternated between each exercise session throughout the day. Some examples of the music that were used came from the following CDs: "Music to Inspire Positive Thinking," designed by Dr. Lee R. Bartel and John Herberman; "Sun Spirit" by Deuter; "Touch the Sky" by Max Highstein; and "Healing Water Fall" by Max Highstein.

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Data Analysis

Quantitative data was collected using researcher-made aggression frequency forms. Total aggressions were tallied each day for each participant during pre-intervention, intervention, and post-intervention. In addition, total tallies for functions of escalations and duration were also collected. The total percentages for aggressions for each of the three students individually, as well as all three students together, were calculated to determine if there was a reduction in aggressive behaviors during the pre-intervention, intervention, and post-intervention phases. Line graphs were utilized to display the frequency and duration of aggressions of the three students during the three phases discussed above. Ultimately, the results discussed in the next chapter will provide evidence for the validity of the hypothesis that there was an overall decrease in aggressive behaviors in students with autism by 30%. This was directly due to the implementation of the *Capacitar for Kids* exercises discussed earlier in the Procedure section of this chapter.

Participants, instruments, procedures, and data analysis have been described for the current study, providing details about the process, implementation, and data collection of this study. The descriptions and the specific explanations of the exercises have given useful information for future researchers who may want to implement or utilize the same program. The next chapter will provide details of the results, including line graphs as well as background information on each of the students.

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Chapter Four: Results

This chapter will report the specific results from the study for each of the three students. It will also include details of each participant including ethnic background, verbal and motor abilities, daily activities, supports, and behaviors. This is followed by the results of the three -week study. Data will be displayed on a line chart for each student, displaying both frequency and duration of the behaviors in the pre-intervention, intervention, and post-intervention phases. The final section of the chapter provides evidence to support the hypothesis that the overall aggressive behaviors of these three students will decrease in frequency and duration with the implementation of relaxation exercises.

Student A Background

Student A is a first grade boy with a diagnosis of autism. He is seven years old and is African American. He lives with his mother, stepfather, and two younger brothers in an apartment near the school. He lives in a small affluent city north of Los Angeles. Student A travels to and from school on the bus. The bus is a location where student A engages in aggressive behaviors, and he has been suspended from the bus several times over the course of the year.

He is verbal, with poor articulation and significant phonological delay. His struggle in oral-motor planning makes it difficult for him to successfully sequence phonemes in increasing length of words and sentences. His overall average length of utterances is reduced. While his receptive language skills are an area of strength for him, they are still below average. His inability to communicate effectively and his delays in intelligibility can sometimes cause him to be frustrated. He maintains age appropriate coordination and balance, and has all the necessary motor abilities to independently navigate through his school day. He can participate in all physical activities independently, and participates like his same age peers.

He spends the majority of his day in the SDC class at Sunflower Elementary and participates in recess, lunch, music, art, library, PE, and computers with his general education class. There is always an instructional assistant maintaining close proximity to Student A to assist with weekly occupational therapy and help when he engages in aggressive behavior. He also receives specialized academic instruction in the SDC via a modified curriculum for both math and language arts, as well as proactive teaching of behaviors daily in both a 1:1 and 1:3 teacher/instructional assistant to student ratio. Furthermore, Student A also uses a token economy. He has speech and language with ABA instruction embedded throughout the day. He has had times when he cannot participate in activities outside the SDC classroom because of his aggressive behavior.

He is social and likes to laugh and have fun during preferred events and activities when demands are not placed on him. He particularly likes tetherball, cars, and playing on the iPad. He becomes easily frustrated when denied access to tangibles, when involved in non-preferred activities, or when demands are placed on him. Possible functions of Student A's aggressive behaviors are frustration, or escape/ avoidance, tangible, and communication deficits. When he gets frustrated he immediately tries to throw, swipe, throw objects at others or across the room, or elope outside the classroom. Most of his aggressions include hitting, punching, screaming, scratching, and kicking.

He was able to independently complete the daily relaxation exercises and memorized them quickly. The first time the exercises were implemented during the intervention phase he whined and complained, but once he learned them, he seemed to enjoy doing them and looked forward to them.

Student A Data

During week one, in the pre-intervention phase, Student A exhibited a total of two aggressive behaviors, with a total of 2 minutes in duration. This pattern of behavior was significantly low and atypical for this student. Out of the five days in the pre-intervention week, Student A was absent one day and there was a school holiday. This left a total of three days of data collection. During week two, the intervention phase, Student A actually had an unexpected increase in behaviors with a total of 21 aggressive behaviors with a total of 9 minutes in duration. Student A was absent one of the five days in the second week of data collection, and there was an additional day off for a holiday, leaving three days of data collection. During week three, the post intervention phase, when the relaxation exercises were removed, there was a spike in behaviors that were more typical for this student; he had a total of 156 aggressive behaviors with a total duration of 46 minutes. This frequency of aggressive behaviors is similar to what Student A usually displays in a typical school week. Out of the five days of data collection in the post intervention phase, Student A attended all of the school days, which allowed for five data collections days.

Figure 17 displays Student A's aggressive behaviors and duration in minutes for each of the three phases of the study. Overall, Student A was receptive to the relaxation exercises even though his aggressive behaviors did increase slightly during treatment. There was a slight increase of aggressive behaviors from pre-treatment to intervention. There was an additional increase in aggressive behaviors with the absence of the relaxation from the treatment to postintervention phases. Student A's most significant increase in aggressive behaviors was from preintervention to post-intervention. It appears from the data that had the treatment period been longer, there may have been a bigger decrease in behaviors observed during the treatment phase (See Figure 17).



Figure 17: Frequency and Duration of Aggressions by Student A

Aggression Definition- Behaviors that include: screaming, crying, punching, biting, grabbing clothing, hitting, scratching, kicking, pulling hair, and destroying objects, or throwing objects.

Student B Background

Student B is a second grade boy who is eight years old and is African American. He has a diagnosis of multiple disabilities including a neurological impairment and pineal cyst on the brain. During childbirth the cord was wrapped around his neck and caused him to momentarily stop breathing. He lives with his mother and father and two younger brothers. His grandfather is very involved in his life and often takes him and picks him up from school. He lives locally in a home near the school in an affluent city north of Los Angeles.

He is excessively verbal and expresses perseverative language by repetition of statements and questions. For example, he will continually ask when he is going to computers, or if it is on his schedule that day. Or he will continually ask the teacher for homework or a workbook. He loves math workbooks. For play, he's only interested in tetherball and will continually talk about playing, and ask when he can play. He often speaks without a clear intent or reason. He is currently able to produce 4-5 sentences that are sequenced and logical in conversation with some partial verbal prompting. Student B is able to attend to verbally presented 5 sentence passages, but he needs prompts and redirection. He has stronger receptive language skills when he is attending and focused; however, he is still considered mildly delayed compared to same age peers. He is able to effectively communicate with his peers and teachers and have reciprocal conversations, with verbal prompts to continue the conversation, or he needs assistance with questions to ask.

Student B has challenges with visual-motor and visual-spatial skills. He has some good fundamental gross motor and object manipulation skills. He can play tetherball independently, as well independently use the iPad. He can throw and catch a ball successfully, yet often

becomes unbalanced during physical activities that require coordination and several steps to complete. When he runs he has a widened gate and sometimes becomes off balance or falls. He continually rolls his head around when talking or engaged in physical activity, which can throw him off balance. Throughout the treatment phase Student B needed adult assistance to stay balanced during various times of the relaxation exercises. He needed full or partial physical prompts from an instructional assistant throughout each exercise session. It was difficult for him to watch the exercise the researcher was doing, and then do it independently. Towards the end of the study he became more comfortable and was able to have more independence during the exercises.

Student B spends the majority of his day in the SDC class at Sunflower Elementary and participates in activities such as recess, lunch, music, art, library, PE, and computers with his general education class. He has 1:1 adult assistance during physical activities for balance, and because of the severity of his behavior. He attends speech and language, occupational therapy, and adaptive physical education therapy weekly. Student B receives specialized academic instruction via a modified curriculum for both math and language arts in a small group setting with a ratio of 1:3 teacher/ instructional assistant to student. He also receives proactive behavior teaching in a 1:1 and in a group setting. Student B uses a time-based token economy system with ABA instruction embedded throughout the day.

Student B often gets fixated on topics and perseverates on particular items, activities or events. For example, he would talk about a particular workbook he saw in the classroom and want to take it home, or want to play a particular math program on the iPad, or want to go outside to play tetherball, or go to computers. It is typically interest-based items that he perseverates on. If these items are not obtained, taken away, or the activity is ended, he will become aggressive. Functions of his aggression are usually task avoidance (non-preferred activities such as language arts and writing), attention, and tangible (wanting a particular item or activity that is the topic of his current perseveration). His aggression includes: hitting, kicking, punching, grabbing clothing, and pulling hair, throwing objects (specifically at adults and students in the room to gain attention), and screaming.

Student B Data

During week one, in the pre-intervention phase, Student B exhibited a total of 104 aggressive behaviors with a total of 24 minutes in duration. These were typical aggressive behaviors for this student. Out of the five days in the pre-intervention week of data collection there was one day off of school for the holiday. This fact allowed for a total of four days of data collection. During week two, the intervention phase, Student B had a decrease in aggressive behaviors with a total of 14 aggressive behaviors and a total of 15 minutes in duration. Out of the five days in the second week of data collection there was a day off for a holiday. This fact allowed for a total of four days of data collection for the intervention phase. During week three, the post-intervention phase, when the relaxation exercises were taken away, Student B's aggressive behaviors increased from the treatment phase, but overall were lower than the preintervention phase. Student B had a total of 55 aggressive behaviors with a total duration of 22 minutes during the post-intervention phase. The duration in minutes of the behaviors was within two minutes of each other for the pre-intervention and post-intervention phase. Of the five days of data collection, Student B was absent one day, which allowed for four data collections days. Figure 18 displays the aggressive behaviors and duration in minutes for each of the three phases

of the study for student B. There was a decrease in aggressive behavior from pre-intervention to the treatment phase. From the treatment phase to the post-intervention phase, when relaxation exercises were taken away, there was an increase in aggressive behavior. There was a decrease in behavior frequency from the pre-intervention phase to the post-intervention phase. (See Figure 18).





Aggression Definition- Behaviors that include: screaming, crying, punching, biting, grabbing clothing, hitting, scratching, kicking, pulling hair, and destroying objects, or throwing objects.

Student C is a third grade boy with a diagnosis of autism. He is ten-years-old and is Caucasian. While his primary diagnosis is autism, his cognitive scores are in the severely low range which indicate that this student has an intellectually disability as well. He lives with his father along with his older brother, and a caregiver lives with them full time. His parents are divorced and his mother shares custody. He is brought to school and picked up by his caregiver who has been with him since he was one-year-old. Both homes of his mother and father are near school in an affluent city north of Los Angeles.

He has demonstrated improved memory skills for visually and auditorily presented information over the past few years, yet is still in the well below average range. He has specifically improved in the area of language arts (memorizing sight words, reading, and basic cvc words) but experiences difficulty retaining higher level concepts such as comprehension. He is verbal and can communicate basic needs such as "I need help," "I need a break," or "I don't like that," and use scripted language. He has difficulty with pragmatic social language. He can attend to a 3-sentence paragraph and respond to basic "wh" questions. When attention is not optimal, he will confuse the questions. His communication skills are increasing with peers and adults, though he still often gives the same questions and answers to the same people every day. For example, he will tell one of the instructional assistants every day that he likes his shirt, or give the same compliment every day. He does need verbal prompting to propose appropriate comments and questions following initial greetings. Student C also continues to have difficulty comprehending linguistic concepts, (spatial, temporal, and qualitative). His receptive language is below average. He can follow basic one to two step directions, but recall and memory can be more difficult.

Student C has deficits in both fine and gross motor ability that affect his ability to independently participate in all physical activities. He usually needs partial to full physical prompting to complete these activities. He has overall difficulty with motor planning, which makes it difficult for him to complete any of the relaxation exercises independently in the intervention phase. He needs adult support to physically guide him through the relaxation exercises throughout the entire intervention phase. When he was left to try to do the activity by himself he would start to do it, but then stop until physically prompted to continue. Towards the end of the intervention phase he was able to engage in the activity with partial physical and verbal prompting.

Student C spends the majority of his day in the SDC class at Sunflower Elementary and participates in activities such as recess, lunch, music, art, library, PE, and computers with his general education class. He has a 1:1 instructional assistant with him at all times when transitioning outside of the SDC class, including lunch and recess. He receives speech and language and occupational therapy, as well as adapted physical education therapy weekly. Student C receives specialized academic instruction via a modified curriculum for both math and language arts. He is in a 1:1 teacher/instructional assistant to student arrangement for language arts, and in a 1:3 small group setting for math. He also receives proactive teaching of behaviors daily in a 1:1 setting. Student C uses a token economy system with ABA instruction embedded throughout the day, as well as a timer to calm him that is set at ten-minute intervals throughout the day.

The functions of Student C's behavior are frustration, attention, task avoidance, and excitement. His aggressive behaviors include: hitting people or objects (such as a door, wall, or desk); property destruction (breaking objects, throwing them on the floor, and swiping counters of objects); kicking; biting; and throwing objects at people near him. Student C had a tremendous decrease in aggressive behavior two to three weeks prior to the start of the study due to a change in medication. In addition, in-home ABA behavior therapy was reinstated after a two-month absence.

Student C Data

During week one, in the pre-intervention phase, Student C exhibited a total of 11 aggressive behaviors with a total of 5 minutes in duration. Out of the five days in week one of data collection, Student C had one day off of school for the holiday. This fact allowed for a total of four days of data collection. During week two, the intervention phase, Student C did not exhibit any behaviors. Out of the five days in the second week of data collection, Student C had one day off for a total of four days of data collection. This allowed for a total of four days of data collection, Student C had one day off for a holiday. This allowed for a total of four days of data collection for the intervention phase in which student C did not display any aggressive behaviors. During week three, the post-intervention phase, when the relaxation exercises were taken away, aggressive behaviors were observed in similar frequency to the pre-intervention phase. He had a total of 16 aggressive behaviors with a total duration of 20 minutes. Student C attended all school days in week three, and there were not any holidays that week, which allowed for five data collection days. The aggressive behaviors observed in both the pre-intervention and post-intervention phases were both higher in frequency than the student had been displaying in the weeks prior to the beginning of the study. Figure 3 displays the aggressive behaviors and duration in minutes

for each of the three phases of the study for student C. Overall, student C participated willingly in the relaxation exercises and did not resist adult assistance to complete them. From preintervention to the treatment phase Student C had a decrease in behavior. He had the largest increase in aggressive behavior from intervention to the post-intervention phase, when the relaxation exercises were taken away. From the pre-intervention phase to the post-intervention phase there was an insignificant increase in comparison. (See Figure 19).



Figure 19: Frequency and Duration of Aggression by Student C

Aggression Definition- Behaviors that include: screaming, crying, punching, biting, grabbing clothing, hitting, scratching, kicking, pulling hair, and destroying objects, or throwing objects.

Chapter Five: Discussion

Summary of the Findings

The results on implementing specific scheduled relaxation for two students with Autism (Student A and C) and one student with multiple disabilities (Student B) supported the hypothesis that these students will exhibit a decrease in aggressive behaviors in frequency and duration. During the intervention week of the study, when the students were engaged in relaxation for ten minutes three times daily, their overall combined aggressions decreased in frequency from 117 down to 35 and from 31 to 23 minutes in duration. This was a significant decrease in behaviors for these students. This is an astounding result due to the fact that the intervention was only in place for one week. While the aggressions decreased during the intervention phase, they made a tremendous increase in the post intervention phase when the relaxation exercises were taken away.

Interpretation

The differences in aggressive behaviors may be a result of the implementation and subsequent elimination of the exercises. The results of this study answer the two previously stated research questions. The first question was: How can we reduce aggressive behaviors in a SDC classroom? The relaxation exercises implemented for one week resulted in an overall decrease in aggressive behaviors for the three SDC students at Sunflower Elementary. This leads to the second research question: Will specific, scheduled relaxation and calming activities decrease aggression in a SDC setting? From this study it can be said that specific, scheduled

exercises from *Capacitar for Kids*, implemented three times daily for a week, can in fact decrease aggressive behaviors in three elementary students.

Student A had a very unusual decrease in overall behavior in the pre-intervention phase with a total of two aggressive behaviors. Student A had not shown that kind of decrease in behavior the entire school year leading up to the study. He also was absent one day during the first and second week of the study. Typically when this student is absent from school, behaviors spike when he arrives back to school. While there is no explanation for the decrease in aggressive behaviors during the pre-intervention and the additional increase in the intervention phase, the significant increase when the relaxation was eliminated supports the theory that relaxation can improve aggressive behaviors.

Student B attended all the days of the study except for the two holidays in the first two weeks that all of the students had off. He had consistent aggressive behaviors throughout the study, although he still had an overall decrease in aggressive behaviors during the relaxation phase and an increase when the relaxation was taken away. Student B has shown the same frequency of behaviors the entire school year, so it is not surprising to see that he continued the intensity during the study. He was present for all data collection days in comparison to the two days that student A missed. Even with the consistency of aggressive behavior for this student, he still showed an increase in aggressive behavior from the treatment to the post-intervention phase , which provides further evidence that the implementation of the relaxation exercises played a significant part in decreasing behaviors.

Student C had been through a few months of significant aggressive behaviors before the study was implemented. He had been receiving ABA home therapy daily after school for 30

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hours a week, and it was dropped by the service provider and not implemented again until a few weeks before the study had started. The ABA home therapy probably influences the fact that this student had a significantly high decrease in behaviors during the pre-intervention phase. Even though, this student had outside factors leading to his decrease in aggressive behavior, he still had an increase when the student was not engaged in relaxation exercises daily.

There is limited research that uses specific relaxation exercises to improve aggressive behavior in students in an SDC class who have a diagnosis of autism or multiple disabilities. There is not yet a study in the United States implementing specific exercises from *Capacitar for Kids* to decrease aggressive behaviors in these students. While Kane and Mazurek (2011) study the prevalence and risk factors of aggressive behaviors in children and adolescents with autism, they do not provide any research or data that implements intervention or treatment for these behaviors. They do provide powerful evidence for the need for future research in this area, with 68% of children and adolescents out of a population of 1,380 showing aggressive behaviors toward caregivers.

The present study had some similarities to those of Mullins and Christian (2001). While they used only one student in their study, they used a form of relaxation, called *Progressive Muscle Relaxation*, to improve the student's behaviors during leisure activity. While the behaviors were not as aggressive as the ones in the present study, they were interfering and considered disruptive. As with the present study, the student, towards the end of the study, became more independent doing the exercises. This student also had an overall increase of 55% of disruptive behaviors compared to the 18% he had when he went through the relaxation training. The student in the study by Mullins and Christian (2001) was most similar to student C,

as he received intensive in-home behavior services, and had a diagnosis of autism and IDD. While student C does not have a diagnosis of IDD, cognitive testing shows he could possibly have it. Again, while this study has some concurrent finding with the present study, its results were not as significant with the specific exercises implemented.

Lopata (2003) evaluated elementary students with challenging aggressive behaviors which are in line with the present study, yet the diagnosis of the students in his study was emotional or behavior disorder (E/BD), not autism or multiple disabilities. This study used Progressive Muscle Relaxation like Mullins and Christian (2001). Lopata's (2003) study was similar to the present study, with a pretest, treatment, and post-test design. However, they also had control groups and three weeks longer of treatment, which would have been beneficial to the present study. Lopata's study used researcher-made data forms with similar aggressions to the present study being tallied with the Child Behavior Checklist (CBCL). Lopata (2003) reported seeing an increase in behaviors after treatment with PMR, just as was seen in the present study after treatment with the Capacitar for Kids exercises. Overall, aggressions decreased from 2.08 to 0.67 based on the researcher-made data forms. This was a result of the implementation of PMR for the students in the treatment groups, which indicates that relaxation exercises do in fact decrease aggressive behaviors, but for Lopata's study it provides evidence for students with diagnoses of E/BD, not Autism or Multiple Disabilities.

Rosenblatt et al., (2011) studied the implementation of Yoga, breathing exercises, and dance in children ages 3-16 years old with a diagnosis of autism, yet he did not differentiate students with specific aggressive behaviors. He used a research design similar to the current study, with a pretest, treatment, and post-test. His results indicated that the largest change in

behavior was in the younger children ages 3-7. The students in the present study were ages 7-10, and while the treatment incorporated breathing and relaxation, it did not use any type of dance.

Hernandex-Reif, Field, and Thomas (2001) studied the effects of Thai Chi Exercises on adolescent children who had a diagnosis of attention deficit disorder. While some of the Thai Chi exercises used by Hernandex-Reif et al. were similar to the exercises used in *Capacitar for Kids*, the students in their study had an average age of 14.5 years, making them older than the students used in the present study. Their subjects also did not have the same diagnosis or severity of behaviors of the students in the present study. The research design was the same as the present study and showed a decrease in overall emotions, conduct, anxiety, and hyperactivity. But, unlike the present study, they did not see an increase in behaviors up to two weeks after the Thai Chi exercises were eliminated.

Implications for Practice

The findings of the present study are useful for educators of students with autism or multiple disabilities. Teachers can access the researcher-made data form, the listed music, a specific description of the exercises, and the schedule to implement these exercises in their own classroom. Many times educators are busy, especially special education teachers. They don't always have the time to research programs to implement in their classrooms. This study provides specific information and supports so that teachers can immediately begin a similar program in their current classroom. They can assess their students' behavior using the data form before, during, and after the exercises to see if the aggressive behaviors of their students decrease. The exercises take about 10 minutes for each session, which can be shortened as needed. It is important for educators working with special education students who present aggressive behaviors to have the ability to incorporate a program that can possibly reduce the behaviors. Aggressive behaviors can put both the teacher and the student at risk and they impact the student's ability to learn and grow academically and socially. The research supports the fact that aggressive behaviors due in fact exist among students with autism. While various studies have decreased aggressive behaviors, there is not a study that is specifically similar to the one in the current study that can be as easily implemented.

Limitations

The main limitation for the present study was the sample size. While the results supported the hypothesis, only having three participants made it difficult to generalize. The length of the study also had an impact on the overall results. Had there been more than one week of relaxation exercises, it would have been possible to see either a continued decrease in aggressive behaviors or the possibility of the students becoming satiated with the novelty of a new activity. The students' various motor abilities and inability to perform the exercises independently made it difficult to assess if the students were benefiting from the exercises themselves, or if students B and C were benefiting from the prompting and physical assistance they received.

During week one of the study there was a holiday on Friday, the last day of the week, which allowed for only four data collection days. In addition, there was another holiday the following week on Monday during the intervention relaxation phase. The last week of the study, the post-intervention phase, allowed for all five data collection days with a total of five. Because there were five data collection days during the post-intervention phase, the additional day may

have affected the results of the study. While the additional day would not change the fact that, overall, aggressions decreased during the relaxation treatment and increased after the relaxation phase ended, the additional day would possibly have reflected different percentages and frequencies. Another limitation of the study was that student A was absent two days in the first two weeks of the study, which was a total of four data collection days missed including the holidays. The researcher was the person implementing the research exercises daily as well as collecting the data, and was involved with each of the students when he engaged in the aggressive behaviors. This could have affected the reliability of the data collection at times.

All three students who participated in this study were also receiving ABA therapy throughout their day through the use of token boards, daily proactive teaching of behaviors, and the basic teaching and structure of the entire class. The inclusion of ABA with the relaxation exercises during the intervention phase played a part in the results of the study. In addition student C had already had a significant decline in aggressive behavior as a result of the reimplementation of in-home ABA therapy, which had been taken away for two months prior to the study. This impacted the overall low amount of aggressive behaviors observed in this student.

Further Research

In the future, researchers should look at several factors in considering this study. An increase of the sample size as well as randomization should be considered and further looked at. Students should be assessed for similar levels of aggression prior to the study as well as their physical ability to independently engage in the exercises. A longer study with extended time for the relaxation intervention phase of the study, and extended time for post-intervention, will allow

for assessment of generalizability. Using different behavior scales and including a non-intrusive observer could improve the reliability of the data collection. It would also help to implement the study during a time when the students will not be absent for any holidays, which, in the current case, caused an interruption in the data collection and the study itself.

While there are limitations and specific needs to be addressed in future research in regards to the present study, there is an absolute need to research further. It can not only have an impact on future students with autism with aggressive behavior, but it can improve the ability of the teachers who work with these students to engage with them more freely and reduce the risk of harm to the students and themselves. This study supported the presented hypothesis of reducing aggressive behaviors in students with autism and a student with multiple disabilities through relaxation exercises, and has set the framework for current and future special education teachers to make a more positive environment for these students, whether in an SDC, partial inclusion, or in a general education setting.

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Appendix A

LUPIN HILL ELEMENTARY SCHOOL

26210 ADAMOR RO., CALABASAS, CA 91302 TELEPHONE (818) 880-4434 LAS VIRGENES UNIFIED SCHOOL DISTRICT

April, 17,2012

California Lutheran University School of Education 60 W. Olsen Road Thousand Oaks, CA 91360

Dear Dr. Martindale:

I give my permission for my school to be involved in the action research study entitled "Reducing Aggressive and Tantrum Behaviors in Students with Autism by Implementing Scheduled Relaxation Exercises," that Jodi Loomis will be conducting while completing her Master's Program in Special Education at California Lutheran University. I am aware of the procedures, risks, and benefits of the study. I understand the students from Mrs. Loomis's class will be participating in this study, and that I will receive the results of our school's participation after the results of the study have been analyzed.

Sincerely,

Śheila Grady

Principal

Appendix B

Parent Informed Consent

May 14, 2013

Dear Parent:

My name is Jodi Loomis. As part of the Masters of Science in Special Education program at California Lutheran University, I am conducting a study on relaxation and aggression for elementary students with autism or multiple disabilities. The purpose of the research project, "Reducing Aggressive Behaviors in Students with Autism by Implementing Scheduled Relaxation Exercises," is to examine if implementation of scheduled relaxation exercises throughout the day will reduce the frequency of aggressive behaviors in the classroom setting.

Exercises from a program called *Capacitar for Kids* by Cane and Duennes is a program in Multicultural Wellness Education for children schools and families. It incorporates breathing, centering, meditation, energy flow, balance, managing emotions, acupressure, and tai chi, to clear the mind increase focus and in turn establish more effective learning. Several exercises from this program will be implemented at scheduled times of the day along with calming music playing in the background. Data will be collected for each child participating in the study via researcher made data frequency charts. The charts will gather information on types and frequency of aggressions throughout each phase of the study that will occur before, during and after implementation of the relaxation exercises. Students that choose to participate will have their age, grade, and gender and ethnic background included in the project but will **not** provide any names.

Ensuring confidentiality for participating students is of the utmost importance. Neither the names of the students, nor the name of their school, will be disclosed in any publication or presentations of the results. All data collected will be stored in a locked file cabinet in the home of the researcher, Jodi Loomis. Participants or parents of participants may view their own records at any time, and all data will be destroyed after three years.

There are minimal risks involved in participating in this study. As with any implementation of a new activity or change in routine, there is the possibility of an increase in behavior or anxiety. If the participant is emotionally discomforted in any way, he/she may choose not to participate in the relaxation exercises at any time during this project. Your child's participation in the study has the potential of providing insight into the possibility of decreasing aggressive behaviors through implementation of relaxation exercises. It may also provide evidence of the significant need for further research in this area. The results have the potential to improve overall academic and social success in your child as well as others and possibly decrease their overall aggressions so they can access their learning environments successfully.

Signing this informed consent form will by no means constitute a waiver of any rights for you or your child. You or your child may still withdraw from the study at any time by contacting the researcher, Jodi Loomis, and there will be no consequences for doing so. You may also refuse to participate in this research study, with no explanation required.

The final results of the study will be shared with the Institutional Review Board at California Lutheran University, as well as your elementary school. As the parent of a participating student, you may also request a summary of the study at no cost. Likewise, participation in this study is free and of no cost to you, or your child.

If you have any questions, please contact the researcher, Jodi Loomis, at 818-880-4434 or by email at <u>loomis@callutheran.edu</u>. In addition, you may contact the Instructional Review Board at California Lutheran University with any questions or concerns by email, at <u>IRB@callutheran.edu</u>. Sincerely,

Jodi Loomis

"I give my consent to participate in the Action Research project conducted by Jodi Loomis in order to fulfill the Master of Education requirements through California Lutheran University. I understand that I (or my child) may withdraw from the project at any time without consequence or choose not to participate. I understand that there are no more than minimal risks to participate."

Parent Signature

Date

Printed Name

Witness Signature

Printed Name
Appendix C

Student Assent

I will work with Mrs. Loomis



YES

NO

Appendix D

Aggressive Behavior Frequency Form

NAME _____ DATE _____ Behaviors: screaming, crying, punching, biting, grabbing clothing, hitting, scratching, and destroying or throwing objects

Functions of Behavior: escape/avoidance, tangible, attention, frustration

Activity	Duration	Functions	Behavior Tally	Total

DAILY TOTAL

Appendix E

Capacitar for Kids Relaxation Schedule

8:30, 10:15, 12:20 Daily

- 1. **Finger holds to manage emotions-** will go through all the fingers of one hand holding for 10 seconds for each finger hold while taking a big deep breath in and out.
- 2. Side to Side 10 seconds.
- 3. Rocking Movement- will be completed 10 times.
- 4. Shower of Light-completed 5 times on each foot.
- 5. Flying through the Air- completed 5 times on each foot and side.
- 6. Salute to the Sun-1 time.

***While playing calming music-from a dogs ear, positive thinking, or capacitar

Appendix F



Appendix G

Institutional Review Board irb@callutheran.edu Date: Tues, May 14, 2013 at 6:46 AM To: "loomis@callutheran.edu" loomis@callutheran.edu Cc: "Martindale, Maura" mmartind@callutheran.edu

Dear Ms. Loomis:

On behalf of California Lutheran University's IRB Committee, I am pleased to inform you that your application "Reducing aggressive behaviors in students with Autism by implementing scheduled relaxation exercises" has been approved. Approval for this study will be valid from May 14, 2013 to May 13, 2014. The study has been assigned IRB number 2012144. Please use this number on any correspondence related to the project.

Please be aware that you must promptly report any change in research activity or amendments to any protocol associated with the study. As well, you must promptly report any unanticipated problems involving risks to subjects or others.

The IRB grants approval for each study for a definite period of time, not in excess of one year. Approval of your study expires on the date listed above. Continuation of the study past this date requires IRB review and approval of a Continuing Review Form from the investigator. With this form, a copy of the Informed Consent Document currently in use must be submitted by you. In order to receive approval by the expiration date, you must submit this information to the IRB at least one month prior to the expiration of the study.

When your study activity has been completed, the Final Report Form must be used to notify the IRB of study termination and outcomes. Both of these forms are available on the CLU IRB web site (http://www.callutheran.edu/IRB).

Best of luck on your project!

Sincerely,

Steve Hawkins

Steve Hawkins, Ph.D. Chair of the CLU IRB Committee